

Marys Peak

Bonneville Power Administration

Communications Site Project

Final Environmental Assessment

DECEMBER 15, 2021



DOE/EA-2050



USFS #50453



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Marys Peak Bonneville Power Administration Communications Site Project

Final Environmental Assessment

DOE/EA-2020

Note to Reader: Changes made in the final environmental assessment since the draft environmental assessment are shown as follows, unless noted otherwise:

- Added text in ***bold, italicized orange font***
- Deleted text in ~~strike through~~ font

**Bonneville Power Administration
U.S. Forest Service
Bureau of Land Management**

DECEMBER 15, 2021

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Acronyms and Abbreviations

APE	Area of potential effects
BLM	Bureau of Land Management
BMPs	Best management practices
BPA	Bonneville Power Administration
CPI	Consumers Power Inc.
dBA	Decibels on the A-weighted scale
dbh	Diameter at breast height
DEQ	Oregon Department of Environmental Quality
DOE	U. S. Department of Energy
EMF	Electromagnetic field
EMR	Electromagnetic radiation
EPA	U.S. Environmental Protection Agency
ESA	U.S. Endangered Species Act
FCRTS	Federal Columbia River Transmission System
FR	Federal Register
GHG	Greenhouse gas
KVA	Key viewing area
MAP	Mitigation action plan
NAAQS	National Ambient Air Quality Standards
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
ORBIC	Oregon Biodiversity Information Center
SBSIA	Scenic Botanical Special Interest Area
SHPO	Oregon State Historic Preservation Office/Officer
SNF	U.S. Forest Service Siuslaw National Forest
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

Chapter 1 Purpose of and Need for Action

1.1 Introduction

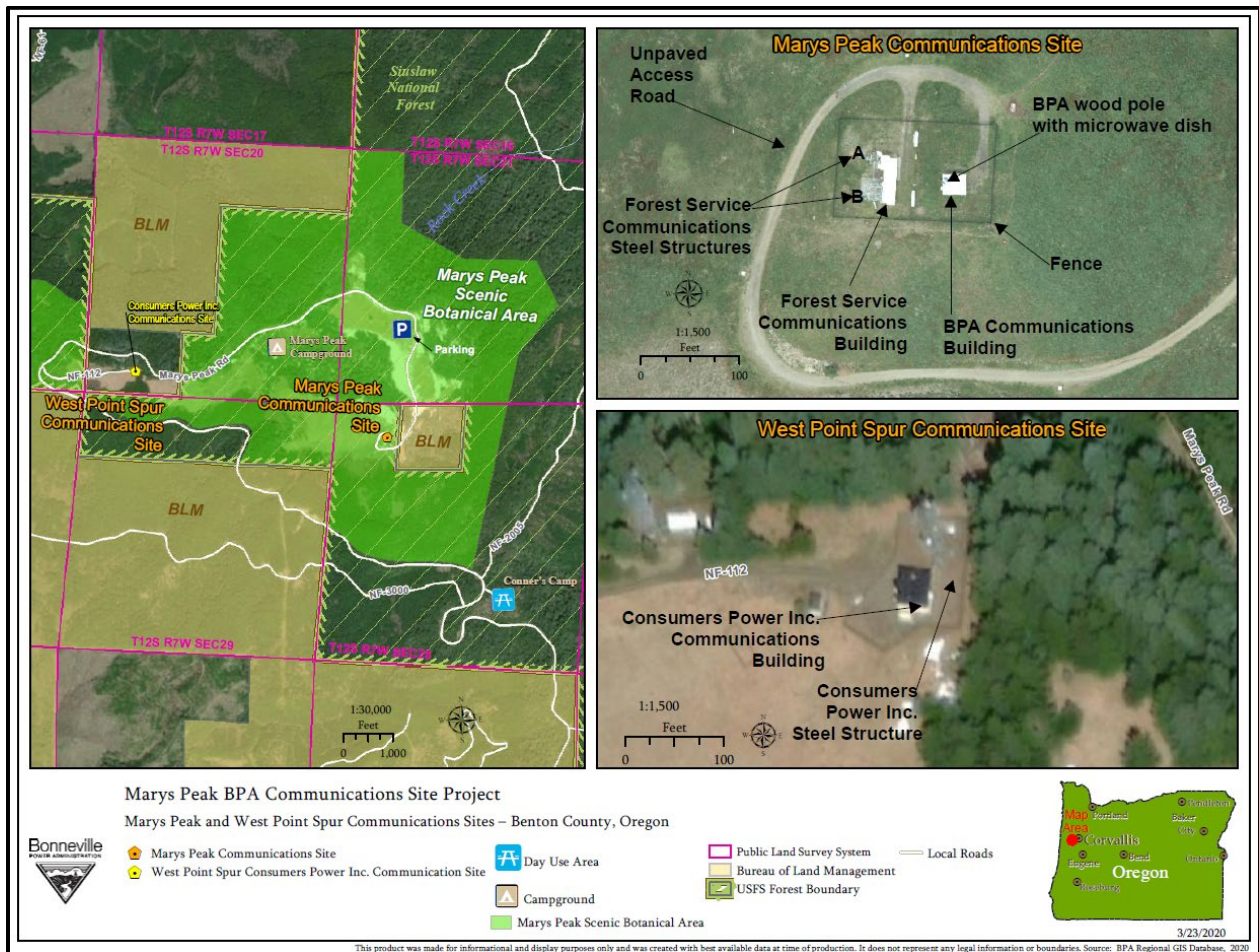
The Bonneville Power Administration (BPA) is proposing to maintain and upgrade **the** existing BPA communications **site** facilities located at the summit of Marys Peak. Marys Peak is located about 15 miles southwest of Corvallis, in Benton County, Oregon (see Map 1-1). BPA is proposing to conduct work at the Marys Peak BPA communications site because the communications equipment at the site is outdated and needs to be replaced and because the communications structure is unstable.

In addition to the proposal to conduct work at the existing BPA communications site, the Marys Peak BPA Communications Site Project (Project) includes two alternative communications sites that could replace the existing Marys Peak BPA communications site. The alternatives being considered are described in Section 2.1 of this **environmental assessment (EA)**.¹

The existing Marys Peak BPA communications site is located on lands managed by the U.S. Department of Agriculture Forest Service (USFS) Central Coast Ranger District of the Siuslaw National Forest (SNF). The site is located within the Scenic Botanical Special Interest Area (SBSIA), which is a USFS special interest area managed under the terms of the SNF Land and Resource Management Plan (USFS 1990) as amended by the Northwest Forest Plan. Some project activities could occur on lands administered by the Bureau of Land Management (BLM) Northwest Oregon District (formerly Salem District). Under one alternative, Project activities would occur on lands owned by the City of Corvallis.

BPA prepared this EA for this proposal pursuant to regulations implementing the **National Environmental Policy Act (NEPA)** (42 USC 4321 et seq.), which requires Federal agencies to assess the impacts their actions may have on the environment. This EA describes potential impacts to natural and human resources from the Project. It includes construction practices and mitigation measures that would help avoid or minimize these impacts.

¹ Technical terms that are in bold, italicized typeface are defined in Chapter 6, Glossary. Acronyms used in this EA are listed at the front of the document.



Map 1-1. Marys Peak Project Vicinity Map.

1.2 Background

BPA is a federal agency that owns and operates the Federal Columbia River Transmission System (FCRTS), which includes more than 15,000 miles of **high-voltage** transmission lines. BPA’s transmission lines move most of the Pacific Northwest’s high-voltage power from facilities that generate power to utility customers throughout the region. The Federal Columbia River Transmission System Act directs BPA to construct the improvements, additions, and replacements to its transmission system necessary to maintain electrical **stability** and **reliability**, as well as to provide service to BPA’s customers (16 United States Code [USC] 838b(b-d)). BPA’s communications system directly supports the operation and maintenance of the FCRTS.

1.2.1 Communications Transmission

The path of communications signals between BPA staff working in the field (field staff) and dispatchers at BPA control centers is shown in Figure 1-1. Power systems are monitored, controlled, and regulated from control center facilities by BPA dispatchers.

BPA field staff and dispatchers communicate about the operation of transmission facilities. Dispatcher responsibilities include issuing electrical clearances to communicate to workers when it is safe to maintain and repair equipment. Field staff may report on the progress of repairs, confirm outages during repairs on electrical equipment, and receive directions. Field staff may report emergencies, such as an injured worker or unsafe road conditions. It is essential that field staff and dispatchers

communicate during maintenance and emergency situations to ensure timely restoration of power and to prevent worker injury or death.

BPA dispatchers and field staff communicate using mobile radios that transmit the audio signal using **Very High Frequency (VHF)** radio waves. The VHF audio signal is sent from the field and received at a BPA communications site, such as the Marys Peak communications site. The signal is then relayed from the communications site to BPA dispatch via microwave radio signals. When dispatchers need to communicate with field staff, they send audio signals via microwave radio to BPA communications sites, where it is converted back to VHF audio signal and sent to field staff using the VHF radio.

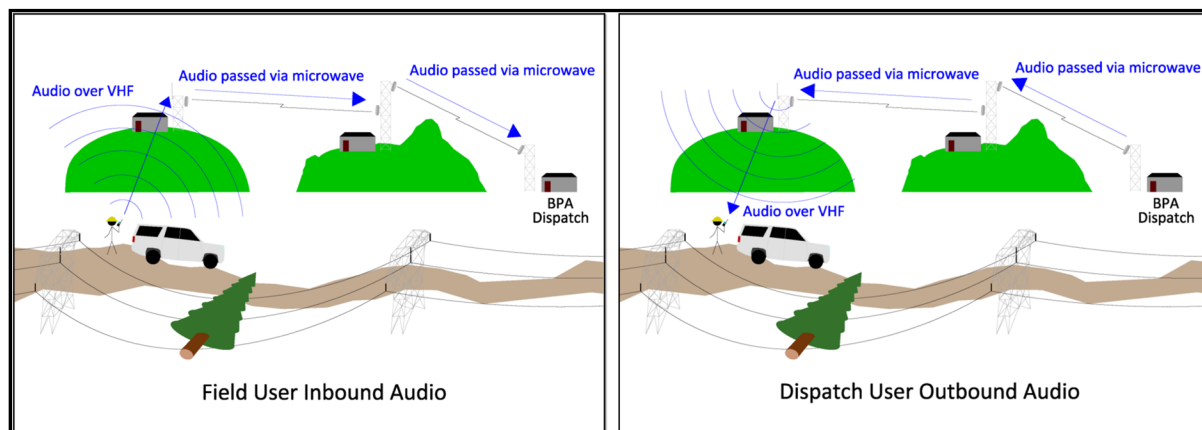


Figure 1-1. Microwave Radio and VHF Transmittal of Audio Communications.

1.3 Need for Action

BPA’s communications network is essential to the safety and reliability of BPA’s power transmission system. As part of that network, the Marys Peak BPA communications site provides real-time voice communications between BPA control centers that monitor and regulate the FCRTS and BPA field crews working in the region. This allows for critical information exchange during maintenance and emergencies, enabling safe and timely power restoration during outages.

However, for the Marys Peak communications site to maintain consistent and reliable communications signals, it requires upgrading or replacement. Some communications equipment at the site needs to be replaced because it is outdated. The existing **microwave** radio dish is attached to an aging and unstable wood-pole structure that sometimes shifts during high wind conditions in the winter, degrading or preventing the transmission of communications signals. The communications site also needs a more reliable back-up power source due to potential power outages and due to the difficulty of accessing the site during the winter months to conduct repairs.

BPA needs to either maintain and update the inadequate communications equipment at the Marys Peak communications site or construct an alternative site that meets BPA’s communications requirements to continue delivering reliable power transmission in the region. All alternatives for the Marys Peak communications site Project must meet national and regional reliability criteria established by the **North American Electric Reliability Corporation (NERC)** and the **Western Electricity Coordinating Council (WECC)**. They help coordinate the operation and planning of the bulk transmission system in the region. Utilities are required to meet the standards of both organizations when planning new facilities and during operation of existing facilities.

1.4 Purposes of Action

Purposes are the goals to be achieved while meeting the need for the Project. BPA has identified the following purposes that will be used to evaluate Project alternatives:

- Meet BPA and industry standards for public safety, reliability, and security to support the safe and reliable operation and maintenance of the FCRTS
- Provide VHF communications coverage equal or better to what currently exists
- Continue to meet BPA's contractual obligations
- Demonstrate responsible environmental stewardship by avoiding or minimizing environmental impacts
- Demonstrate cost-effectiveness
- Use facilities and resources efficiently

1.5 Agency Roles

1.5.1 Lead and Cooperating Agencies

BPA is the lead agency responsible for preparing this EA under NEPA. BPA will use this EA, along with comments from the public, other stakeholders, and interested and affected agencies, to decide whether to maintain and upgrade the existing communications site, select an alternative site and decommission the existing site, or take no action at this time.

The Council on Environmental Quality (CEQ) regulations for implementing NEPA allow for the designation of other federal, state, and local agencies and Indian Tribes as cooperating agencies for an EA where appropriate. BLM and USFS are cooperating agencies for this EA. Both agencies have special expertise and jurisdiction by law on the lands they manage that could be affected by the Project.

Two Project alternatives would affect lands managed by the City of Corvallis. BPA invited the City of Corvallis to become a cooperating agency, but the City did not respond. They are coordinating with BPA on the portion of the proposal that could affect the lands they manage.

As cooperating agencies, the roles of BLM and USFS are to provide information, comments, and technical expertise to BPA regarding the lands they manage in the Project area and to provide data and analyses for use in this EA. Both agencies may also need to make realty decisions that would require permits. BLM may need to grant a permit that would allow BPA to cut trees on BLM property. BPA would need to submit an SF-299 form to BLM to update the permit to use their portion of the access road to the summit of Marys Peak. BPA currently has a Land Use Grant Instrument with the USFS for the existing communications site that would need to be updated, depending on the selected alternative.

Although BPA is the lead agency with responsibility for the completion of this EA, BPA, BLM, and the USFS will each complete their own ***Finding of No Significant Impact (FONSI)*** statements, if warranted.

In addition, USFS will have an administrative review process (a "45-day objection period") after the combined release of the final EA and draft Decision Notice. The objection period is available to those who submitted comments during the scoping periods or during the draft EA comment period. The USFS reviewing official can then respond to objections as they relate to the Project, particularly on SNF Forest Plan concerns.

1.5.2 Other Agencies that May Use this EA

Chapter 4, Environmental Consultation, Review, and Permit Requirements, of this EA identifies other federal agencies that may have permitting, review, or other approval responsibilities related to certain

aspects of the Project. Some state, regional, and local agencies also may use all or part of this EA to fulfill their applicable environmental review requirements for any actions they may need to take for the Project (see Chapter 4).

1.6 Public Involvement

BPA conducted public outreach for the Project to help determine the topics that should be studied and discussed in this EA. Outreach was conducted to provide notice of and information on the Project proposal, the environmental process, and opportunities to comment.

1.6.1 Project Webpage

BPA created a Project-specific webpage where information can be accessed. The Project webpage went live on September 27, 2016, and has been updated throughout the environmental review process. The Project webpage contains current information about the Project and the environmental review process, links to Project materials, information on when and how to comment, comments received, and project contacts (see <https://www.bpa.gov/goto/maryspeak>).

1.6.2 Public Scoping Process

BPA held two scoping periods for the Project. The initial scoping period was held from September 27, 2016, to December 2, 2016, and an additional scoping period was held from January 8, 2018, to February 21, 2018.

BPA began the public scoping process for the Project on September 27, 2016, by sending a letter to people potentially interested in or affected by the Project. The Project mail list was reviewed by BLM and USFS. BPA notified landowners within a minimum distance of 1 mile from Marys Peak Road, the road that is used to access the existing communications site. BPA also notified Tribes and federal, state, and local governments and agencies, including elected officials and public interest groups such as the Marys Peak Alliance.

The letter explained the need for the proposal, the environmental process, how to participate, the scoping period dates, and contact information for BPA Project staff. The mailing included the notification letter, a project vicinity map, a comment form, reply card with document delivery options, and a postage-paid return envelope. The letter, map, and comment form were posted on the BPA Project website.

BPA sent a press release to local media with information about the initial scoping period and public scoping meeting and placed paid advertisements (5 inches by 6 inches in size) in the *Corvallis Gazette-Times* and the *Albany Democrat-Herald* newspapers on November 4, 6, and 9, 2016.

The initial scoping period for the Project closed on December 2, 2016. BPA invited comments through a variety of methods, including written comments submitted by U.S. Postal Service mail, through e-mail, and by fax. The Project website included an electronic comment form that allowed the public to submit online comments. Verbal comments could be submitted directly to a Project team member by calling a toll free BPA phone number.

The USFS first published the Project to the Schedule of Proposed Actions on January 1, 2017. BPA began the additional public scoping period on January 8, 2018, by sending a letter to people potentially interested in or affected by the Project. The mail list also included persons and groups that expressed interest in the Project since the initial scoping period. BPA notified landowners within 1 mile from the road that is used to access the existing Marys Peak BPA communications site (Marys Peak Road) and within 1 mile of the BPA Albany Substation and the BPA Prospect Hill communications site. The same process was followed for the additional scoping period as for the first, described above.

BPA sent a press release to local media with information about the additional scoping period and public scoping meeting and placed paid advertisements (5 inches by 6 inches in size) in the *Corvallis Gazette-Times* and the *Albany Democrat-Herald* newspapers combined Sunday publication on January 14 and 21, 2018. The additional scoping period for the Project closed on February 21, 2018.

1.6.3 Public Scoping Meetings

Two Project scoping meetings were held to meet with interested persons to describe the need for the Project, answer questions, and solicit comments. BPA, USFS, and BLM staff attended both meetings. The initial scoping meeting was held on November 9, 2016, and an additional scoping meeting was held on January 25, 2018.

About 35 persons attended the initial scoping meeting on November 9, 2016. The meeting was held at Philomath High School's Community Room in Philomath, Oregon. Attendees included members of the public with a personal interest in the Project and representatives of the following organizations: Benton County Amateur Radio Emergency Service (ARES), Benton County Sheriff's Office, U.S. Hang Gliding and Paragliding Association, Marys Peak Alliance, and a private company, Silke Communications.

The initial scoping meeting featured 10 stations with topic-specific project information, including maps showing aerial imagery, topography, and the existing communications site. At the time of the initial scoping meeting, the Project was in the very early stages and action alternatives other than work at the existing BPA communications site were not developed. BPA, USFS, and BLM Project team members answered questions, discussed possible alternatives, and accepted comments relevant to the scope of the environmental analysis. Project staff recorded verbal public comments. A comment station provided members of the public an opportunity to complete and submit a comment form during the public meeting.

About 40 persons attended the additional scoping meeting on January 25, 2018. The meeting was held at Linus Pauling Middle School's Auditorium in Corvallis, Oregon. Attendees included members of the public with a personal interest in the Project and representatives of the following organizations: the Oregon Department of Forestry, Benton County ARES, Benton County Sheriff's Office, Philomath Fire and Rescue, Monroe Fire Department, Blodgett-Summit Rural Fire Protection District (RFPD), Corvallis 911, Corvallis Mountain Rescue, Marys Peak Search and Rescue, Cascade Paragliding Club, Marys Peak Alliance, Friends of Marys Peak, Corvallis Chapter of the Native Plant Society of Oregon, and the Marys Peak Group Sierra Club.

Unlike the initial scoping meeting, potential action alternatives were presented at this meeting. These alternatives were developed based on earlier public comments and agency input. BPA provided a presentation on five action alternatives being considered at that time. BPA, USFS, and BLM Project team members received information, listened to concerns, answered questions, and discussed other possible alternatives. Staff accepted comments relevant to the scope of the environmental analysis.

1.6.4 Scoping Period Comments

Comments received during the scoping comment periods, both written and verbal, were posted on the Project website. BPA received comments about a wide range of issues for consideration and some comments are very detailed. Comments from both scoping periods are summarized below; a more detailed summary of the comments received during both scoping periods is posted on the Project website (<https://www.bpa.gov/goto/maryspeak>).

All comments were considered in the environmental analysis of the Project and these topics are addressed in appropriate sections of this EA. Comments helped shape the proposed alternatives. Most comments received during both comment periods focused on the Marys Peak communications site. Many comments emphasized the importance and value of Marys Peak to the local community and to

visitors due to its high quality and unique resources, including botanical, wildlife, ecological, geological, visual, aesthetic, cultural, historic, spiritual, educational, and recreational resources. Others commented on the value of Marys Peak as a communications site (BPA site and/or USFS site) due to the 360-degree unobstructed view from the peak, emphasizing that Marys Peak serves as a critical component of the regional emergency and non-emergency communications infrastructure for Federal and state agencies, local governments, private companies, and amateur radio groups. While some people are concerned that the summit communications site is and will continue to be harmful to the scenic beauty, tranquility, and natural plant communities on Marys Peak, others are concerned that moving communications facilities off the summit would provide less effective communications.

During the second scoping period, comments were also received on the BPA Prospect Hill communications site and the BPA Albany Substation site. Those comments included concerns about the proximity of the BPA Albany Substation to neighborhoods and potential health effects, as well as the potential for Project structures decreasing property values. Commenters suggested that BPA use Prospect Hill instead of the BPA Albany Substation site because it is located in a less populated area. Another person stated that the use of the Prospect Hill site would not require the removal of any trees at Prospect Hill. A request was made for an explanation of which site would be better, the BPA Albany Substation or Prospect Hill, from BPA's and DOE's perspective.

The main topics of the suggestions, information, questions, and concerns include:

- History and use of the existing Marys Peak communications site
- Specific questions about the Project proposal
- Agencies involved, their roles and responsibilities, and how agencies would make decisions about the Project
- NEPA process, including public involvement and schedule
- Suggestions on Project alternatives
- Resources to consider in the environmental analysis
- Types of land use and recreation at Marys Peak
- Benefits of Marys Peak visitation to the local economy
- Concerns about impacts to visual resources
- Need for measures to protect soils, vegetation, wildlife, and cultural resources
- Concerns about the introduction or spread of weeds and suggested control measures
- Concerns about the effect of noise on recreation
- Concerns about public health and safety, such as fire danger, exposure to radiation and magnetic fields from electrical and communications equipment, and greenhouse gas emissions
- Request for seismic enhancement, weather resistance, and physical security at the communications site
- Potential impacts to resources from each alternative
- Suggested construction practices and mitigation measures to avoid or minimize impacts to resources, including restoration of construction work areas
- Statements that Marys Peak is essential to emergency services, including emergency responders and 911 services

1.6.5 Scoping Outreach and Post-Scoping Public Involvement

In addition to public scoping meetings, staff from BPA, USFS and BLM organized and attended various meetings related to the Project. USFS staff discussed the Project periodically with Marys Peak Alliance

members, a group dedicated to conserving the ecological communities, physical features, and cultural importance of Marys Peak. From the **initial** scoping period until **through** the release of the draft **final EA and beyond**, BPA continues to update the Project website with new information and Project maps.

BPA consulted with two Tribes – the Confederated Tribes of Grand Ronde and the Confederated Tribes of Siletz – that have an interest in the Project. BPA requested information from these Tribes on cultural resources in the Project vicinity. BPA provided information about the alternatives during Project scoping to Tribal cultural resource program staff and solicited comments about these alternatives with respect to cultural resources. This information was used to shape the alternatives and the cultural resource field investigations for the Project. Throughout the Project, BPA continued consultation with Tribes and the Oregon State Historic Preservation Office (SHPO) to identify cultural resources in the Project area and any potential adverse effects to cultural resources.

Staff from BPA coordinated with federal and state agency staff about known and potential wildlife and botanical resources in the Project area. These meetings and coordination are described in more detail in Chapter 4, including consultation with the U.S. Fish and Wildlife Service (USFWS) under the federal **Endangered Species Act (ESA)**.

1.6.6 Distribution, Review and Comment for the Draft Environmental Assessment

BPA is releasing this **released the** draft EA for review and comment **on October 13, 2020**. In addition to distributing the draft EA to interested parties, the draft EA and other documents were posted on the Project website, including the draft EA distribution letter, comment form, and information on how to comment. BPA also notified landowners within 1 mile of Marys Peak Road (the road that is used to access the existing Marys Peak BPA communications site) and within 0.25 miles of the BPA Albany Substation and the BPA Prospect Hill communications site.

During the public review period for the draft EA, BPA accepted comments orally, via email, by letter and at an online virtual public meeting on October 28, 2020. BPA sent a press release to local media with information about the draft EA comment period and the online virtual public meeting that was held October 28, 2020, from 6:30 to 8:00 p.m. BPA also placed paid advertisements in the Corvallis Gazette-Times and the Albany Democrat-Herald newspapers' combined Sunday publication on October 11 and 18, 2020. The USFS also placed a paid legal advertisement in the Eugene Register-Guard, the newspaper of record, on October 23, 2020.

About 14 persons (not affiliated with the lead or cooperating agencies) participated in the virtual public meeting, including, but not limited to: members of the Marys Peak Alliance, the Native Plant Society - Corvallis Chapter, Corvallis Gazette-Times, an emergency services volunteer and disaster response communications unit leader, recreationalists with ties to Marys Peak, and others with unidentified affiliations.

The comment period for the draft EA ended on November 23, 2020. BPA considered all comments received during the review period in preparing the final EA. Appendix F, Public Comments and Agency Responses to the Draft Environmental Assessment, of the final EA includes responses to all substantive comments received. Based on the final EA, BPA and cooperating agencies will determine whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact for the Proposed Action.

1.7 Draft *Final* EA Content and Organization

The remainder of this EA is organized as follows:

- Chapter 2, *No Action and Action Alternatives*, describes the No Action Alternative, the three action alternatives, and alternatives eliminated from detailed consideration. It describes the criteria that BPA engineers and other specialists used to evaluate potential communications site locations.
- Chapter 3, *Affected Environment, Environmental Consequences, and Mitigation Measures* describes, for each type of resource that could be affected by the Project, the existing environment, potential environmental consequences of the action alternatives and the No Action Alternative, and mitigation measures that have been or could be taken to avoid or minimize resource impacts.
- Chapter 4, *Environmental Consultation, Review, and Permit Requirements*, discusses the coordination activities, consultation requirements, permits, and other approvals that would need to be obtained to implement the Project and the Project's consistency with state substantive standards. It provides an explanation of how BPA consulted and coordinated with agencies, consulted with Tribes, and any other permits or approvals required.
- Chapter 5, *Persons, Tribes, and Agencies Receiving this EA*, identifies the individuals, Tribes, agencies, and organizations notified of the availability of this EA.
- Chapter 6, *Glossary*, defines terms used in this EA. Terms defined in the glossary are shown in bold, italicized typeface the first time they are used in this EA.
- Chapter 7, *References*, provides the references cited, used as sources of information, or used to support the analysis in this EA.
- Supporting technical information is provided in appendices or referenced on the Project website.

Chapter 2 No Action and Action Alternatives

This chapter describes the No Action Alternative and the three action alternatives. Communications sites that would be used for the action alternatives are described in Section 2.3, followed by descriptions of Project design, construction, operation, and maintenance requirements at each communications site. Areas that would be temporarily or permanently impacted by construction and tree cutting under each alternative are also estimated.

While developing a reasonable range of action alternatives, BPA considered a variety of factors (environmental, technical, social, and economic) and all comments received from the public during the public scoping periods (see Section 1.6, *Public Involvement*). For each potential alternative, BPA assessed whether the alternative would meet the identified need for the Project (see Section 1.3, *Need for Action*) for reliable communications and achieve the Project's purposes (see Section 1.4, *Purposes of Action*). Alternatives that were considered but eliminated from detailed study in this EA are described in Section 2.10, along with the reasons why they were eliminated.

2.1 No Action Alternative (Alternative 1)

Under the No Action Alternative, existing BPA communications sites at Marys Peak and Prospect Hill would remain. Periodic routine and emergency maintenance would occur at both communications sites to ensure they continue to function within the larger BPA communications network. However, the reliability and safety concerns that prompted the proposal for action would persist. Because BPA would not have reliable communications between field staff and dispatch, BPA would likely need to seek alternative communications solutions in the future.

2.2 Action Alternatives

Each of the three action alternatives includes two communications sites between which BPA communications signals would pass. (An explanation of how BPA communications transmissions work is provided in Section 1.2.1.) For all action alternatives, Project activities would occur at the existing BPA Marys Peak communications site. Depending on the alternative, activities would also occur at either the existing BPA Albany Substation, the existing BPA Prospect Hill communications site, or the existing Consumers Power, Inc. (CPI) communications site at West Point Spur. **These four communications sites – BPA Marys Peak, BPA Albany Substation, BPA Prospect Hill and the CPI site at West Point Spur – are referred to as “Project components” in this EA.** The proposed work that could occur at the four components under each alternative is described in Sections 2.4, 2.5, and 2.6 of this EA.

2.2.1 Development of Action Alternatives

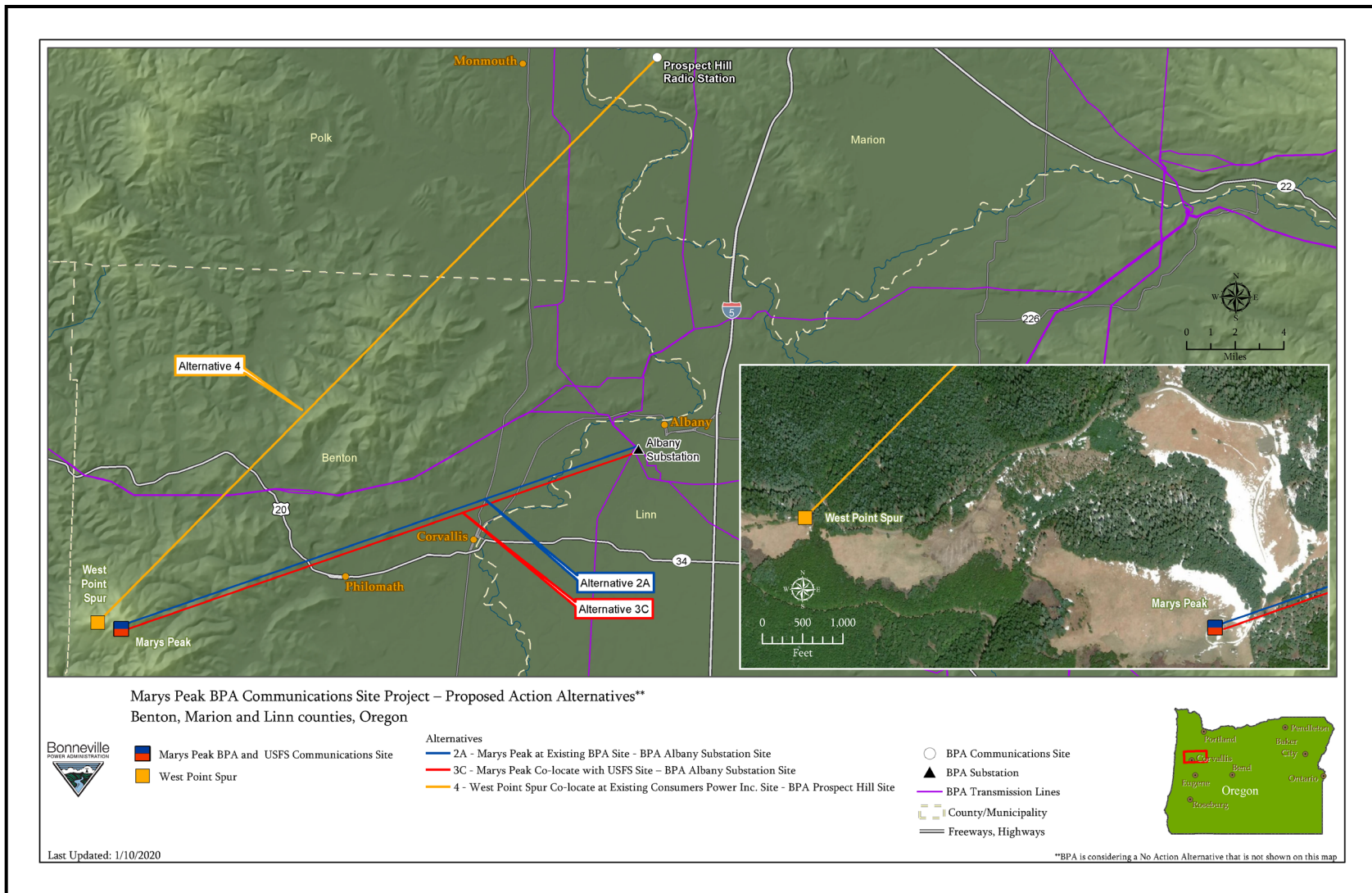
While developing action alternatives, BPA considered more than 30 western Oregon sites for potential use as BPA communications sites for this Project. These sites were identified based on comments received during public scoping and suggestions by BPA engineers. Locations considered were sites owned and operated by various entities, sites developed for other purposes, and undeveloped sites.

BPA considered whether existing communications sites could provide reliable and adequate communications coverage for BPA field staff working on BPA transmission facilities. BPA also considered topography, landscape features, the known or potential occurrence of cultural resources, and the presence of natural resources, such as rare wildlife and plant species. BPA staff reviewed available information on resources and information received from USFS and BLM subject matter experts. Finally, BPA also considered ways to minimize the Project footprint by identifying established infrastructure that could be used, such as existing electrical service and access roads.

Of all the alternatives considered for the Project, three action alternatives are analyzed in detail in this EA (Map 2-1). Below is a list of the alternatives presented to the public during the additional scoping period in early 2018. Each alternative includes two communications sites between which BPA communications signals would pass. Three of these action alternatives are analyzed in detail in this EA and are designated in bold font (see Section 2.10 for a discussion of why the remaining action alternatives were considered but eliminated from detailed study in this EA):

- **Alternative 2A.** Marys Peak at Existing BPA Communications Site – BPA Albany Substation
- Alternative 2B. Marys Peak at Existing BPA Site – BPA Prospect Hill Communications Site
- Alternative 3A. Marys Peak Co-locate at New USFS Site – BPA Albany Substation
- Alternative 3B. Marys Peak Co-locate at New USFS Site – BPA Prospect Hill Communications Site
- **Alternative 3C.** Marys Peak Co-locate with USFS – BPA Albany Substation
- **Alternative 4.** West Point Spur Co-locate at Existing Consumers Power, Inc. (CPI) Site – BPA Prospect Hill Communications Site
- Alternative 5. West Point Spur New BPA Site – BPA Prospect Hill Communications Site

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Map 2-1. Locations of Marys Peak BPA Communications Site Project Action Alternatives. Alternative 1, the No Action Alternative, is not shown on this map; if included, it would be a straight line between Marys Peak and Prospect Hill Radio Station, representing the existing microwave radio communications signal that currently passes between the BPA communications site located on the Marys Peak summit and the BPA Prospect Hill communications site.

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2.3 Description of Project Components

2.3.1 BPA Marys Peak Communications Site

The BPA Marys Peak communications site is located about 15 miles southwest of the City of Corvallis, in Benton County, Oregon, on SNF lands. Work would be conducted at the BPA Marys Peak communications site under all action alternatives. Under Alternative 2A, the existing BPA communications site would be maintained and upgraded. Under the other two action alternatives, BPA would remove the existing BPA communications site from Marys Peak and move it to another location.

The BPA communications site is accessed by an unpaved 0.65-mile long access road that begins at the paved public parking lot located below the Marys Peak summit (Photograph 2-1). Vehicle access to the unpaved road to the summit is restricted by a locked USFS gate near the parking lot. Most of the access road is on USFS lands, but about 0.18 mile (948 feet) is on BLM lands. The road is not maintained on a regular basis. ~~It is~~ **its exposed gravel surface ranges from about 9 feet to about 12-16 feet wide, and is deeply** rutted and scoured in some areas. The access road also serves as a public hiking trail.



Photograph 2-1. Paved public parking area and **unpaved** access road leading to Marys Peak summit.

The BPA Marys Peak communications site is used when BPA staff needs to communicate about BPA transmission facilities in the mid- and southern Willamette Valley. These communications signals currently pass between the communications sites at Marys Peak and Prospect Hill. A portion of the BPA communications site was initially leased to BLM for communications purposes, but BLM relocated their equipment to the USFS site in the fall of 2018.

The BPA communications site was constructed in 1960 and 1961, and began operating in 1961. The communications site consists of a communications building, a wood pole that supports a microwave communications dish and VHF **whip antennas**, a small steel-lattice structure, a steel pole with weather data collection equipment and a BLM VHF whip antenna, and a propane tank; all enclosed within a chain link fence (Photographs 2-2 and 2-3).



Photographs 2-2 (left) and 2-3. Views of the BPA Marys Peak communications site, looking southwest and northeast, respectively.

The BPA and USFS communications sites are located within a common chain link fence at the summit of Marys Peak. The black fence is 8 feet tall enclosing an area 160 feet wide by 100 feet long. At the top of the fence, three barbed wire strands add an additional foot of height to the fence. To protect the site from lightning strikes, an underground grounding system is connected to the fence. In addition to a pedestrian gate, both BPA and USFS have double gates in the northern portion of the fence to provide vehicle access to the unpaved parking areas adjacent to both facilities. BPA vehicles typically park inside the fence on the graveled area near the BPA communications building (Photographs 2-4 and 2-5).



Photograph 2-4 (left). BPA pedestrian and vehicle gates in the chain link fence.

Photograph 2-5. BPA vehicle parking area within the fence.

The BPA communications building is a concrete building with a plaster exterior coating. It is about 20 feet wide by 16 feet long and 9 feet tall. The windowless black building has a white, flat metal roof and one exterior door. The building foundation is reinforced concrete.

The BPA building houses equipment for communications, weather monitoring, data logging, lightning protection, batteries, alarm systems, and sensors. A forced-air electric heater keeps the interior of the building at stable temperatures during winter months. Because the building is only cooled with a fresh air vent, summer temperatures within the building can become quite hot. Elevated temperatures, generally above 77 degrees Fahrenheit, can reduce the useful life of the batteries and decrease optimization or cause failure of sensitive electronics equipment.

A 28-foot tall wood pole structure on the west side of the BPA communications building supports the BPA microwave communications dish. A 5-foot long VHF whip antenna is attached at the top of the wood pole structure, resulting in a total height of about 30 feet. The wood pole is about 20 inches in

diameter, directly embedded into the ground, and supported by three guy wires. An 8-foot diameter, gray antenna cover (radome) protects the sensitive microwave antenna attached to the wood pole.

Two structures are located on the south side of the BPA communications building (Photograph 2-6). A BPA anemometer is attached near the top of a 20-foot tall structure that is bolted to a concrete footing. The second structure, owned and maintained by BLM, is a 15-foot tall steel pole *that up until 2018 had with a 6-foot long VHF whip antenna and a temperature and relative humidity meter mounted near the top of the pole.*



Photograph 2-6. *Marys Peak communications site, looking west.*

Electrical service to the communications site is provided by CPI, which automatically monitors power usage. The electrical line is installed in underground conduit within the unpaved access road between the public parking lot and the electrical meter pedestal, located between the USFS and BPA buildings (Photograph 2-7). There is no running water and no bathroom facilities.



Photograph 2-7 (left). *The electrical station service pedestal with BPA and USFS meters.*

Photograph 2-8. *BPA propane tank (foreground right) and USFS propane tank (background).*

Back-up power is provided to the BPA communications building by a propane-fired engine generator, located inside the building. The generator starts up automatically during a power outage. The generator system is tested for about 90 minutes each week throughout the year, usually between 1 a.m. and 4 a.m., to ensure that it is running correctly.

A 1,000-gallon propane tank is located on two concrete footings within the fence to the southeast of the BPA building (Photograph 2-8). The fuel gauges are inspected each fall to ensure that the tank has at least 65 percent reserves prior to the start of winter. The tank usually needs to be refilled every other year. When the tank requires filling, the propane supplier usually contacts USFS to see if their tank also requires filling so they can fill both tanks during the same visit. Propane is delivered to the site in a large fuel truck that travels up the access road to the communications sites, and enters the chain link fence through the USFS double gate.

BPA performs routine maintenance at the Marys Peak communications site. Two BPA staff visit the communications site at least four times per year to maintain equipment within the communications building.

Emergency repairs at the communications site can occur at any time of year. An emergency occurs when there is a severe reduction in the communications signal strength due to the microwave communications dish misaligning from the beam path due to high winds, ice loading, and other environmental conditions. In the past five years, there have been high wind events that resulted in signal degradation or complete failure, including two emergency incidents that required immediate resolution. When the signal drops low enough, a radio alarm sounds at the control center, and field staff are alerted that they need to visit the site to realign the communications dish. Staff travel to the site, sometimes in a snowcat with a trailer in tow if large equipment is necessary, to precisely re-align the microwave communications dish with the BPA Prospect Hill communications equipment to restore the communications signals.

2.3.2 USFS Marys Peak Communications Site

The existing USFS Marys Peak communications site is located immediately west of and downslope from the BPA communications site, within the same fence (Photograph 2-9). Under Alternative 3C, an addition to the USFS Marys Peak communications building would be constructed. A new 60-foot tall steel-lattice structure would also be constructed. BPA would become a tenant in the addition and move BPA communications equipment to the new steel-lattice structure. BPA would remove the BPA existing communications building and structures from the Marys Peak summit.



Photograph 2-9 (left). The USFS communications site (at right) and BPA communications site (left).
Photograph 2-10. Double gate in north fence leading to USFS building parking area.

The USFS and BPA communications sites are accessed by the same unpaved access road, described above. The fence that encloses both the BPA and USFS communications sites is also described above. Within the fence, a grassy, open area surrounds the USFS communications building on three sides. A double gate in the south fence opens to an unpaved parking area near the USFS building (Photograph 2-10) where the USFS and their tenants typically park vehicles.

The current USFS communications building was constructed in 1996. The site is used by USFS and about nine tenants who lease space. Each tenant maintains their own equipment. The USFS site consists of a building, two steel-lattice structures, and a propane tank; all enclosed within the fence. The taller of the two structures is a 40-foot USFS steel-lattice box structure with 11 antennas and one microwave communications dish. The shorter of the two steel-lattice structures is owned and operated by the Oregon Department of Transportation (ODOT) and Oregon State Police. It is 20 feet tall, with six antennas and three microwave communications dishes.

The USFS communications building is constructed of concrete slab walls. The roof is flat and covered by a white polyethylene membrane. Within the building, there is a USFS and tenant communications equipment room and a backup generator room, each accessed by a separate exterior door. The building has a heating, ventilation, and air conditioning (HVAC) wall unit to maintain stable temperatures for optimal equipment operation, to prevent damage to sensitive electronics equipment, and to prevent reduction of useful battery life. A security system monitors the site.

Electrical service to the USFS communications site is provided by CPI, as described above. From the USFS meter, the electrical conduit goes through a service disconnect panel to the USFS building. There is no running water and no bathroom facility within the USFS building.

In the event of a power outage, backup power is provided to the USFS building by the propane-fueled generator. The 1,000 gallon tank is located on two concrete footings, with a safety barrier to prevent damage by vehicles. The generator system is turned on for 30 minutes a week throughout the year during daylight hours to test it and ensure it is running correctly.

USFS performs routine maintenance at their communications site. The USFS facilities manager generally inspects the site monthly, between May and October. Typical maintenance tasks include coating the roof with elastomeric paint, water sealing the concrete exterior of the building, cleaning the HVAC filter, and repairing any broken fencing. The propane tank is filled annually, generally during the summer months. A USFS radio technician and communications site tenants visit the site as needed to conduct inspections and maintenance. ODOT staff visit the site to service the backup generator.

USFS occasionally needs to perform emergency maintenance at their communications site, primarily during the winter when severe weather can affect equipment. USFS and ODOT staff drive snowcats or snowmobiles to the site to conduct emergency maintenance when snow impairs access.

2.3.3 BPA Albany Substation

The BPA Albany Substation is located about 1 mile west of U.S. Highway 99 on Queens Avenue SW, in the City of Albany, Linn County, Oregon. *It was originally constructed in 1942 as a temporary substation and then rebuilt, expanded upon and converted into a permanent substation in 1954.* The substation is located within a chain link fence immediately adjacent to Queens Avenue SW, the Calapooia River, and Hazelwood Park and directly across the road from Chase Orchards Subdivision (Photograph 2-11). Under Alternative 2A and Alternative 3C, some work would be conducted at the BPA Albany Substation.



Photograph 2-11. BPA Albany Substation viewed from Hazelwood Park.

The substation is accessed from Queens Avenue SW. A small paved parking lot is located on the east side of the substation control house. The control house and a steel-lattice structure are located about 40 feet from the street.

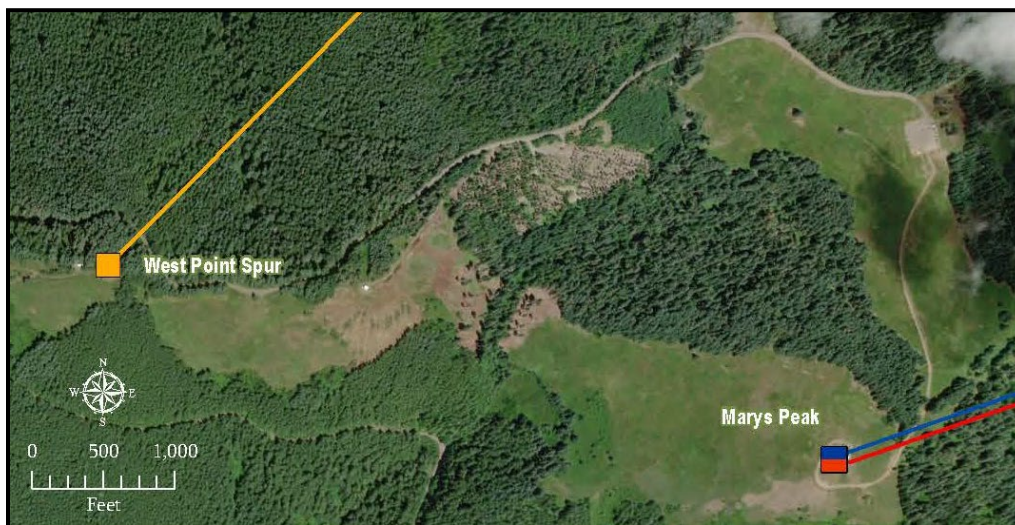
BPA has fiber optic communications equipment and a VHF mobile antenna within and on the BPA Albany Substation control house. The 100-foot tall steel-lattice structure, constructed in 1997, does not support any communications equipment and has not been used for about 10 years.

The only Project work proposed at the BPA Albany Substation would be the installation of equipment on the steel-lattice structure and within the control house. Because there would be minimal work at this location, detailed descriptions of the control house and communications equipment at the BPA Albany Substation are not provided in this EA.

The only Project work

2.3.4 West Point Spur – CPI Site

The CPI site is located about 15 miles southwest of the City of Corvallis, in Benton County, Oregon, and about 1 mile west of the Marys Peak summit on a ridgeline known as West Point Spur (Photograph 2-12a and Photograph 2-12b). Under Alternative 4, BPA would co-locate within the existing CPI communications site and remove the existing BPA communications site on Marys Peak.



Photograph 2-12a. View of the CPI West Point Spur communications site in relation to the Marys Peak communications site shared by BPA and USFS. (Lines show the paths of communications signals under various alternatives.)



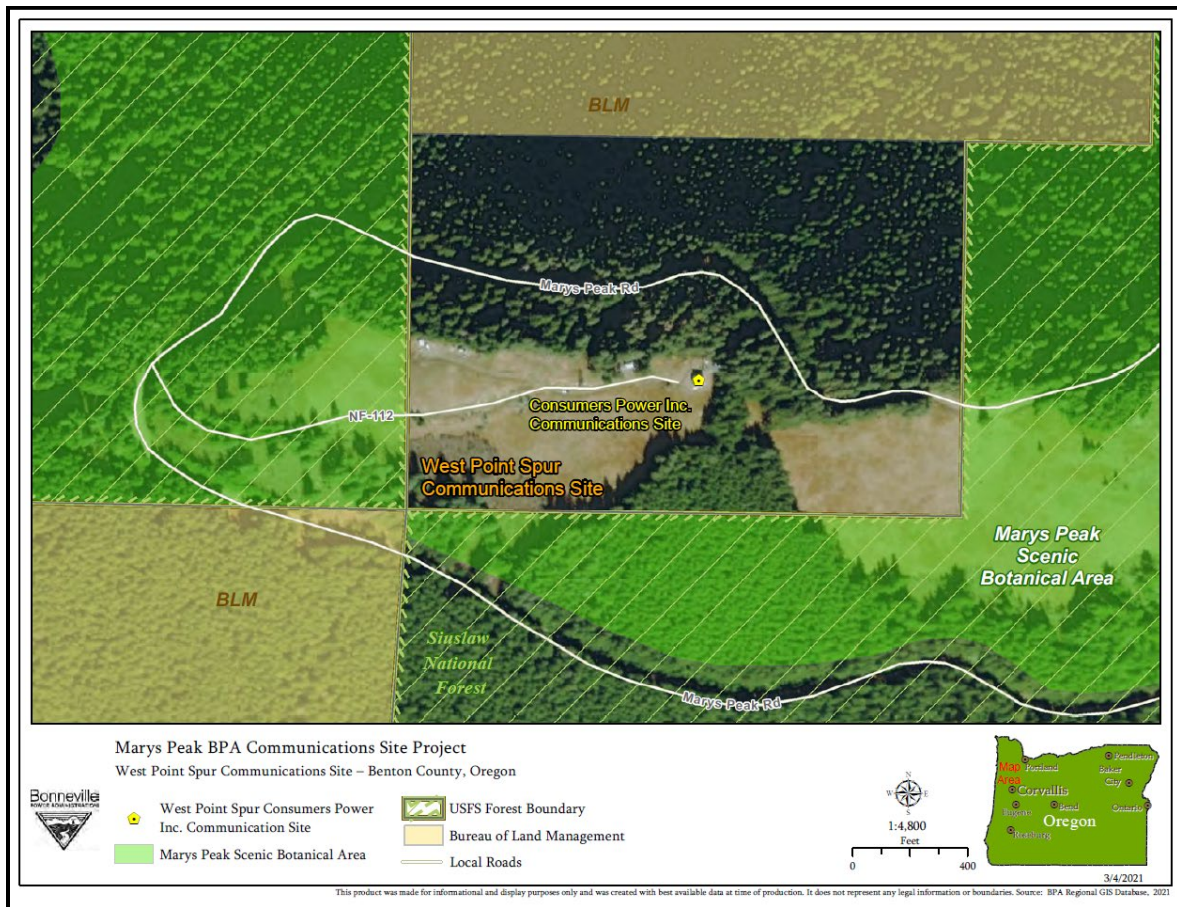
Photograph 2-12b. West Point Spur as seen from the unpaved access road near the Marys Peak summit (looking west). (This photograph was added to the EA in response to Comment 13-07)



Photograph 2-13. West Point Spur access road NF-112, facing west.

The majority of West Point Spur is owned by the City of Corvallis. The City leased the communications site to CPI in 2012. CPI subleases a portion of the site to tenants.

The CPI site is accessed from an unpaved National Forest road (NF-112; *see* Photograph 2-13 *and* *Map 2-2*) which begins at a gate off of Marys Peak Road about 7.2 miles from Highway 34. NF-112 is about 0.37 miles long between the gate and the CPI site. About half of its length is on SNF lands; the other half is on City of Corvallis lands. NF-112 is currently not regularly maintained by either landowner. It is rutted in some areas but usable for maintenance vehicles.



Map 2-2. Access to the CPI communications site via access road NF-112 at West Point Spur. (This map was added to the EA in response to Comment 06-02 and Comment 31-43)



Photograph 2-14. CPI West Point Spur communications site, facing east.

The CPI communications site includes a building with equipment, an approximately 80-foot tall steel-lattice structure that supports microwave communications dishes and two VHF whip antennas, and a diesel tank protected under a steel cover (Photograph 2-14). The 0.25 acre site is surrounded by a chain link fence. Vehicles generally park in the graveled area immediately outside the fence.

The windowless CPI building is constructed of cinder block. Because there is no HVAC equipment in the building to regulate heating or cooling, the temperature inside the building fluctuates during extreme

weather temperatures. Back-up power is provided to the building by a diesel-fired generator located within the building. The 500-gallon diesel tank sits on a concrete footing within the fenced area.

CPI performs ongoing routine maintenance at the site, including filling the diesel tank annually. CPI indicated that they have not needed to conduct emergency maintenance at the site to date, but could access the site year-round if necessary by using a snowcat or snowmobile when snow impairs access.

2.3.5 BPA Prospect Hill (Alternative 4)

The BPA Prospect Hill communications site is located about 5.3 miles west of Interstate-5, and about 7 miles southwest of downtown Salem in Marion County, Oregon. There are other non-BPA communications sites at Prospect Hill (Photograph 2-15). Under Alternative 4, some work would be conducted at the existing BPA Prospect Hill communications site.



Photograph 2-15 (above). BPA Prospect Hill communications site and nearby communications sites owned and managed by other entities.

Photograph 2-16. Near view of BPA Prospect Hill site.



The BPA communications site at Prospect Hill is mainly used by BPA for communications among staff who work on transmission facilities in the mid-Willamette Valley. **A microwave radio communications signal currently passes between the BPA communications site at the Marys Peak summit and the BPA Prospect Hill communications site.** BPA leases a portion of the **its Prospect Hill** communications site to the U.S. Army Corps of Engineers.

The BPA Prospect Hill site is accessed by a 0.7-mile long unpaved access road that begins at a locked gate at Skyline Road. Although the access road is rutted in some areas, it is currently usable by maintenance vehicles. BPA vehicles generally park in the graveled road immediately outside the site.

The BPA Prospect Hill site consists of a building that houses communications equipment, a steel-lattice structure with microwave communications dishes, a propane tank, and an outhouse located within a chain link fence (Photograph 2-16). The 140-foot tall steel-lattice structure adjacent to the BPA building supports multiple microwave communications dishes. Multiple dishes are needed on the structure because this site has seven distinct communications paths that point in several different directions. Some signals require more than one dish to ensure reliable communications.

Project work at the BPA Prospect Hill site would consist of modifications to the existing steel-lattice structure, installation of equipment on the steel-lattice structure, and installation of communications equipment within the building. Since there would be minimal work, detailed descriptions of the existing building, communications equipment, electrical service, and back-up power are not provided in this EA.

2.4 Proposed Activities by Action Alternative

The activities proposed at each Project component, under each alternative, are described in this section. Details on site preparation, construction, and post-construction activities are presented, including how materials would be staged, how steel-lattice structures are constructed, *best management practices* (BMPs) to be implemented, and how vegetation would be restored.

2.4.1 Alternative 2A: Marys Peak BPA Comm. Site – BPA Albany Substation

Alternative 2A includes some maintenance of the BPA communications building at the Marys Peak summit, installation of BPA communications equipment inside the building, replacement of the existing wood pole that supports a microwave radio dish with a 40-foot tall steel-lattice communications structure, and cutting up to 14 noble fir located northeast of the summit. A microwave radio dish would be installed on an existing steel-lattice structure at the BPA Albany Substation.

At the Marys Peak BPA communications site, activities would include:

- Stage equipment, materials, and vehicles within the fence at the summit and in up to 1,800 square feet (0.04 acre) of the paved public parking lot
- BMPs involving temporary structures or features would be installed and removed when no longer needed for public safety and to protect sensitive resources, including temporary fencing to restrict access and erosion and sediment controls
- Improve the unpaved access road leading from the paved parking lot to the summit for construction access
- Improve the building (install an HVAC system and paint the building)
- Install, replace, and maintain equipment inside the building, including microwave and VHF radios, a DC battery system and a generator
- Construct a 40-foot tall steel-lattice structure with a 20-foot tall VHF whip antenna at the top, in a grassy area within the fence
- Install a 6-foot diameter microwave dish on the steel-lattice structure
- Construct an *ice bridge* between the steel-lattice structure and the building
- Upgrade electrical service between electrical meter and the BPA building
- Repaint or replace the BPA propane tank
- Cut up to 14 noble firs (*Abies procera*) to create an unobstructed microwave beam path on about 0.53 acre of BLM land
- Revegetate areas disturbed by construction and infrastructure removal with native plant species

At the BPA Albany Substation, activities would include:

- Install a microwave radio system and other equipment inside the building
- Install a 6-foot diameter microwave dish and antenna system on the steel-lattice structure

2.4.2 Alternative 3C: Marys Peak Co-locate with USFS – BPA Albany Substation

Alternative 3C includes construction of a building addition to the existing USFS communications building at the Marys Peak summit, installation of BPA communications equipment inside the addition, construction of a new 60-foot tall steel-lattice communications structure, cutting up to 14 noble fir located northeast of the summit, and removal of the BPA communications site. A microwave radio dish would be installed on an existing steel-lattice structure at the BPA Albany Substation.

At the Marys Peak BPA communications site, would include:

- Stage equipment, materials, and vehicles within the fence at the summit and in up to 1,800 square feet (0.04 acre) of the paved public parking lot
- BMPs involving temporary structures or features would be installed and removed when no longer needed for public safety and to protect sensitive resources, including temporary fencing to restrict access due and erosion and sediment controls, if needed.
- Improve the unpaved access road leading from the paved parking lot to the summit for construction access
- Construct a building addition (13-foot wide, 25-foot long, 8-foot tall) on the east side of, **and immediately adjoining to**, the **existing** USFS-owned building to replace the existing BPA building
- Install a HVAC system and other ventilation systems, as necessary
- Construct a 60-foot tall, ~~USFS-owned~~, steel-lattice structure with an ice bridge connected to the USFS communications building; add or adjust the tower grounding system underground
- Construct a rock retaining wall next to the new steel-lattice structure's slab footing, if needed
- Install a 6-foot diameter BPA microwave dish and a 20-foot tall VHF whip antenna on the new ~~USFS-owned~~ steel-lattice structure
- Relocate none or some USFS or other user communications equipment and antennas from the existing structures onto the new steel-lattice structure; possibly remove existing structures
- Upgrade electrical service between the electrical meter and the new building
- Relocate or replace the existing BPA propane tank
- Demolish the existing BPA facilities and remove materials from site
- **Install about 100 feet of new chain link fence and associated lightning protection ground rods underground closer to the USFS site; remove about 229 feet of existing chain link fence that currently surrounds the BPA communications site, leaving the existing fence post footings and lightning protection ground rods underground** ~~Remove and replace portions of the existing chain link fence closer to the USFS site; remove and replace lightning protection ground rods located underground and connected to the fence~~
- Cut up to 14 noble firs to create an unobstructed microwave beam path on about 0.53 acre of BLM land
- Revegetate areas disturbed by construction and infrastructure removal with native plant species

At the BPA Albany Substation, activities would include:

- Install a microwave radio system and other equipment inside the building
- Install a 6-foot diameter microwave dish and antenna system on the steel-lattice structure

2.4.3 Alternative 4: West Point Spur Co-locate at CPI Site – BPA Prospect Hill

Alternative 4 includes installation of BPA communications equipment inside the existing CPI communications building at West Point Spur and installation of equipment on the existing steel-lattice communications structure. Up to 20 conifers located northeast of the CPI facility would be cut. The existing BPA communications site at Marys Peak would be removed. At the BPA Prospect Hill communications site, a microwave radio dish would be installed on the existing steel-lattice communications structure.

At the CPI communications site, activities would include:

- Stage equipment, materials, and vehicles within the CPI fence and in a 0.01-acre area west of the CPI site
- BMPs involving temporary structures or features would be installed and removed when no longer needed for public safety and to protect sensitive resources, including temporary fencing to restrict access due and erosion and sediment controls, if needed.
- Repair CPI's existing chain link fence and gate
- Improve the unpaved access road (NF-112) leading from Marys Peak Road to CPI's communications site for construction access
- Install BPA communications equipment and other equipment inside the CPI building
- Modify external doors on existing building, if needed
- Install a 10-foot diameter microwave dish on the existing CPI steel-lattice structure
- Install two additional 20-foot tall VHF antennas, one at the top of the existing CPI steel-lattice structure, and one approximately 40 feet below the top of the structure
- Install a 2,000-gallon propane tank and propane supply line
- Install an HVAC system on the existing CPI building
- Install an ice bridge between the existing CPI building and the steel-lattice structure, if needed
- Hand-excavate one or more 18-inch deep holes near the base of the existing CPI steel-lattice structure to expose the existing grounding mat and bond ground bars to the mat
- Cut up to 20 conifers (Douglas fir, noble fir and western hemlock) to create an unobstructed microwave beam path on about 0.76 acre of City of Corvallis land
- Revegetate areas disturbed by construction and infrastructure removal with native plant species

At the BPA Prospect Hill communications site, activities would include:

- Install a microwave radio system and other equipment inside the BPA building
- Install a 10-foot diameter microwave dish and two 20-foot tall VHF whip antennas on the steel-lattice structure
- Reinforce the existing steel-lattice structure to increase structural stability; this could include adding multiple steel bars within the structure or grouting the steel structure

At the Marys Peak BPA communications site, the following activities would occur after BPA equipment has been installed at the CPI site:

- Demolish the existing BPA site and remove materials from site
- ***Install about 100 feet of new chain link fence and associated lightning protection ground rods underground closer to the USFS site; remove about 229 feet of existing chain link fence that currently surrounds the BPA communications site, leaving the existing fence post footings and lightning protection ground rods underground*** Remove and replace portions of the existing fence closer to the new USFS communications site
- Revegetate areas disturbed by construction and infrastructure removal with native plant species

2.5 Construction Activities

If one of the Project's action alternatives is selected for construction, the final design would be completed for that alternative, including the precise location of steel-lattice structures, buildings, electrical service, propane tanks, and other equipment. Land rights would be acquired, if needed. After completion of the environmental review, construction could begin.

Construction activities would occur during a three- to five-month period, depending on the alternative selected. The sequence of construction activities would begin with work on access roads (if needed), then staging of materials. BMPs would be put in place, such as temporary fencing to restrict public access and erosion and sediment controls. This section describes the type of construction activities that would occur under each action alternative.

Communications site construction is typically done in three phases:

1. **Site preparation** includes leveling the ground in areas where installation of buildings and steel-lattice structures would occur; bringing in soil and rock to the site if needed; then, below-ground work such as installing grounding mats, concrete foundations, rock retaining walls and drainage
2. **Outdoor work** includes erecting structures (buildings and steel-lattice structures), installing communications equipment on structures, installing other outdoor equipment such as propane tanks and electrical meters, trenching *or directional boring* for electrical service, and erecting fencing
3. **Indoor work** includes the installation of the electrical station service, communications equipment, HVAC system, batteries, generator, and testing of all equipment

2.5.1 Typical Construction Crew

The size of the construction crew would depend on the amount and type of work at each Project component under the selected alternative. For the minimal amount of work at the BPA Prospect Hill communications site, the BPA Albany Substation, and the existing CPI communications site, a small crew of about six people would be needed (two climbing the steel-lattice structure, one watching during structure work and two to three installing indoor equipment). Under Alternatives 2A, a crew of about eight people could be needed during peak construction. The most construction would be done under Alternative 3C, requiring about 11 people during peak construction.

The following construction vehicles and equipment could be used during Project construction, depending on which alternative is selected and the construction contractor selected:

- Vehicles (pickups, vans, trucks)
- Cement, dump and work trucks
- Graders
- Large excavators (bulldozers, backhoes)
- Auger and rock drills
- Road construction equipment (dump trucks, graders, dozers, excavators, water trucks, *compaction road roller*)

2.5.2 Access Roads

Access roads would be used to reach communications sites during construction and maintenance. BPA has existing rights to access all the Project components except West Point Spur (Alternative 4). If Alternative 4 is selected, BPA would acquire rights from both the City of Corvallis and the USFS to use the access road to the CPI site.

For all action alternatives, improvement of existing access roads would be needed because the existing road prism is **conditions are** inadequate for use by construction and maintenance vehicles. Existing access roads would be bladed, graded, and shaped, and **To improve the unpaved access roads**, crushed rock would be placed **on top of the existing road's exposed rock surface area and then spread out on the existing rock surface area and compacted by heavy equipment**. Work on existing road surfaces is not added to the temporary or permanent disturbance areas. No new or temporary roads are proposed under any of the alternatives.

Water drainage features such as **water bars** could be installed to carry seasonal runoff, resulting in temporary and permanent disturbance at the side of roads. A typical water bar consists of a dip about 4-6 feet wide and 12-18 inches deep crossing diagonally across the width of the road, and a 10-foot-by-10-foot permanent rock apron on the downhill slope.

Installation of the drainage apron at the edge of the water bar would require the clearing of existing vegetation, grading and compacting soils, and installing **up to** a 10-foot-by-10-foot permanent and more sparsely vegetated rock-lined drainage apron on the downhill slope. The apron would be constructed with enough rock to slow runoff from the road, but would leave enough space to allow vegetation to grow through the apron itself, eventually visually obscuring the rock. Each water bar **and rock apron** installation would permanently disturb **about up to** 100 square feet (rocked area) and temporarily disturb up to 500 square feet at the sides of the rock apron.

At some Project components, including the BPA Albany Substation and the BPA Prospect Hill communications site, access road improvements would not be needed. If any damage to access roads occurs because of construction, the damaged road portions would be returned to a condition as good as their preconstruction condition. The access road improvements that could be conducted at each Project component **and under each Action Alternative are summarized** is in Table 2-1.

The access road leading to the Marys Peak communications site would be used under all alternatives. USFS has stated this access road needs to be improved. **Under Alternative 2A or Alternative 3C**, BPA would resurface the entire **unpaved** access road **leading to the Marys Peak summit** in order to safely access the communications site with construction equipment. BPA would also repair the road after construction, if needed, so maintenance equipment could safely access the site.

Table 2-1. Proposed Access Road Improvements for each Project Alternative

Alternative	Type of Road Improvement	Length of Road Improvement Area and Ownership
2A		Total: Up to 3,450 feet (0.65 mile)
Marys Peak*	Improvement of surface; installation of up to 3 new water bars, improvement to 5 existing water bars	Up to 2,500 feet (0.47 mile), USFS Up to 950 feet (0.18 mile), BLM
Albany Substation	None	0
3C		Total: Up to 3,450 feet (0.65 mile)
Marys Peak*	Improvement of surface; installation of up to 3 new water bars, improvement to 5 existing water bars	Up to 2,500 feet (0.47 mile), USFS Up to 950 feet (0.18 mile), BLM
Albany Substation	None	0
4		Total: Up to 1,990 feet (0.37 mile)
West Point Spur	Improvement of surface if needed with 5 new water bars, new spot rock in areas with pot holes	1,000 feet (0.19 mile), USFS 990 feet (0.18 mile), City of Corvallis
Marys Peak*	None, work would be restricted to dry weather	0
Prospect Hill	None	0

* BPA would conduct the minimal amount of work needed to safely access the site with construction and maintenance equipment.

Under Alternative 4, BPA would not improve the unpaved access road leading to the Marys Peak summit. The **Only the** existing access road leading to West Point Spur would be improved on USFS and City of Corvallis lands under Alternative 4. This access road is currently passable, but it has deep ruts and pot holes in some places. This road would remain gated and locked.

Access road improvements could result in the following temporary and permanent disturbance areas, all from the installation of water bars:

- Alternative 2A and Alternative 3C:
 - Temporary – 4,000 square feet (2,500 square feet on USFS lands, 1,500 square feet on BLM lands)
 - Permanent – 800 square feet (500 square feet on USFS lands, 300 square feet on BLM lands)
- Alternative 4:
 - Temporary – 2,500 square feet (1,500 square feet on USFS lands, 1,000 square feet on City of Corvallis lands)
 - Permanent – 500 square feet (300 square feet on USFS lands, 200 square feet on City of Corvallis lands)

2.5.3 Staging of Equipment and Vehicles

Temporary staging areas would be needed at all Project components for construction crews to store materials, construction vehicles, and equipment. The size of staging areas would vary depending on the amount of materials needed for the work at each Project component (Table 2-2).

Table 2-2. Staging Areas Needed for each Project Alternative

Alternative	Location	Land Ownership and Size
2A		
Marys Peak	Inside the site fence (meadow) Paved parking lot	USFS: Up to 6,100 sq. ft. inside fence Up to 1,800 sq. ft. in paved parking lot
Albany Substation	On graveled area inside substation fence	BPA: Up to 4,300 sq. ft.
3C		
Marys Peak	Inside the site fence (meadow) Paved parking lot	USFS: Up to 11,325 sq. ft. inside fence Up to 1,800 sq. ft. in paved parking lot
Albany Substation	On graveled area inside substation fence	BPA: Up to 4,300 sq. ft.
4		
West Point Spur	Inside the CPI site fence (gravel) and outside the CPI site fence (meadow)	City of Corvallis: Up to 3,920 sq. ft. inside CPI fence Up to 3,920 sq. ft. outside (west of) CPI fence
Prospect Hill	Inside fence (gravel)	BPA: Up to 600 sq. ft. inside fence

At components where a new steel-lattice structure would be constructed, a staging area would be needed to assemble steel-lattice structure segments. No staging would occur on BLM lands for any alternatives.

There would be no permanent disturbance area from staging areas, but they would cause the following temporary disturbance areas:

- Alternative 2A: 6,100 square feet temporary disturbance within the fence
- Alternative 3C: 11,325 square feet temporary disturbance within the fence
- Alternative 4: 3,920 square feet temporary disturbance outside the CPI fence

2.5.4 Site Preparation

Site preparation would be needed at the Marys Peak communications site under Alternative 2A and Alternative 3C to create level areas so workers could safely set up equipment and construct foundations and footings. Footings are steel and concrete placed in the ground at each of the four structure corners or one large concrete slab. The most site preparation would be needed under Alternative 3C because site development would be needed for the steel-lattice structure, the new concrete slab for the building addition, and potential construction of a retaining wall. Temporary disturbance areas resulting from site preparation activities are accounted for under disturbance areas for staging activities (see prior section), because staging areas are the largest and most expansive temporary disturbance area. The only alternative with permanent disturbance due to site preparation is Alternative 3C.

Site preparation would not be needed at the BPA Prospect Hill communications site, the BPA Albany Substation, and the CPI communications site because they are existing communications sites, and there would be no site expansion.

To begin site preparation, heavy machinery would be used to level the construction work area and excavate areas for footings and foundations. In some areas, a layer of rock or soil would be laid down prior to pouring concrete foundations for some equipment and structures. A stormwater retention system would be needed for all alternatives because the total disturbance area would be greater than 5,000 square feet.

2.5.5 Steel-lattice Structure Construction

Above-ground construction work would begin with the erection of the steel-lattice structure and installation of other equipment. Under Alternative 2A, BPA would construct a 40-foot Valmont Q-style box steel-lattice structure. Under Alternative 3C, a tapered Valmont 800 series structure would be constructed, that would be 60 feet tall (Figure 2-1). The new structure would be made of galvanized steel and could appear shiny for two to four years before the steel dulls from weathering.

Under Alternative 2A and Alternative 3C, the new steel-lattice structure would be securely attached to the ground with footings (described above). Holes for the structure footings would be dug with a track hoe; drilling could also occur if rock is present. Footings would then be created by pouring a 3-foot thick concrete pad on a gravel base. The steel-lattice structures would be assembled onsite (*within the Marys Peak communications site's chain link fence area*) and lifted into place by a large crane. The base of the structure would then be bolted to steel protruding from the concrete footing(s). The relative size and shape of the steel-lattice structures are shown in Table 2-3.

The permanent disturbance area for a steel-lattice structure is estimated to extend about 5 feet from the footings or concrete pad. The area within 5 feet of the structure footings would be unavailable for most other uses and difficult to revegetate, and therefore considered a permanently disturbed area.

The size of the temporary disturbance area around the new steel-lattice structure could differ depending on terrain, slope, soil or bedrock conditions, accessibility, and other site-specific characteristics. The temporary disturbance area would include areas disturbed by construction equipment, crane pads, etc. Soils in the temporary disturbance area would be decompacted and

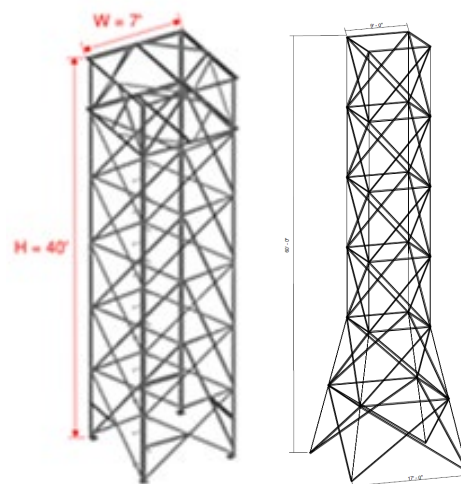


Figure 2-1. Valmont Q-style box structure (left) and tapered Valmont 800 series structure (right). Not to scale.

revegetated after Project construction. The temporary disturbance area is estimated to extend up to 40 feet beyond the permanent disturbance area, but would not extend beyond the fence.

Under Alternative 3C, the existing 20-foot tall steel-lattice structure on Marys Peak could be removed if equipment is relocated to the new structure. Under all action alternatives, BPA would remove the BPA wood-pole structure on Marys Peak.

Under Alternative 4, no new structure would be built; the existing *CPI* steel structure would be used with no additional height increase. However, several 18-inch holes would be excavated at the base of the existing CPI steel-lattice structure footing to expose the existing grounding mat. Additional grounding bars would be bonded to the exposed mat to ensure the structure is grounded in the event of a lightning strike, protecting nearby workers on the ground.

Steel-lattice structure construction could result in the following disturbance areas:

- Alternative 2A:
 - Temporary – Up to 6,100 square feet on USFS lands would be disturbed by equipment, but this area has already been accounted for in the staging area footprint
 - Permanent – 529 square feet on USFS lands
- Alternative 3C:
 - Temporary – Up to 11,325 square feet on USFS lands would be disturbed by equipment, but this area has already been accounted for in the staging area footprint
 - Permanent – 625 square feet on USFS lands
- Alternative 4: No disturbance because the structure is existing

Table 2-3. New or Existing Steel-lattice Structures by Alternative

Alternative	New or Existing Steel –lattice Structure*	Height; Size at Base	Concrete Footing	Steel-lattice Structure Equipment or Improvements
2A				
Marys Peak	New	40 ft.; 7 ft. by 7 ft.	13 ft. by 13 ft. by 3 ft. deep	6-ft. diameter microwave dish; 20-ft. VHF antenna; ice bridge
Albany Substation	Existing	NA	NA	6-ft. diameter microwave dish; antenna system
3C				
Marys Peak	New	60 ft.; 15 ft. by 15 ft.	23 ft. by 23 ft. (+/- 2 ft.) by 3 ft. deep	6-ft. diameter microwave dish; 20-ft. tall VHF antenna; USFS: Install equipment currently mounted on the 3 rd party structure, if agreed upon by parties; ice bridge
Albany Substation	Existing	NA	NA	6-ft. diameter microwave dish; antenna system
4				
West Point Spur	Existing	NA	NA	10-ft. diameter microwave dish; two 20-ft. VHF antennas; ice bridge
Prospect Hill	Existing	NA	NA	10-ft. diameter microwave dish; two 20-ft. VHF antennas and steel structure bars or grouting to reinforce the structure

* Steel-lattice structures would be BPA-owned for Alt. 2A at Marys Peak, and are currently owned at the Albany Substation and Prospect Hill.

2.5.6 Communications Equipment Installation

Under the selected action alternative, communications equipment would be mounted on the existing or new lattice-steel structures and updated equipment installed inside the buildings at each component.

Communications equipment mounted on steel-lattice structures would include microwave dishes, whip antennas, ice bridges, and stabilizing bars.

Microwave dishes are circular and mounted on the steel-lattice structure at about 35 feet above ground. Their diameter varies from 6 to 10 feet, depending on the Project component. They are generally a light gray color that can appear white.

VHF antennas, also called whip antennas, are narrow wires mounted at the top of the structures. They receive and emit the VHF communications signals. VHF antennas are generally about 20 feet long.

Installation of new or updated ice bridges are proposed under all action alternatives. An ice bridge is a metal structure constructed about 8 to 10 feet above the ground that runs between the steel-lattice structure and the communications building. The ice bridge provides protection from ice and snow loading that could potentially damage the communications and power cables.

The existing structure at the BPA Prospect Hill communications site would need some reinforcement to be strong enough to support the additional communications equipment. To stabilize the structure, some areas could be grouted or stabilizing bars could be added. Stabilizing bars would consist of steel cross arms bolted to the structure.

Depending on the alternative, equipment that could be installed inside the building includes microwave and VHF radios, a DC battery system, HVAC equipment, a generator, and other miscellaneous communications equipment.

Communications equipment installation activities under Alternative 2A and Alternative 3C would not create temporary or permanent disturbance areas beyond those already accounted for under structure construction. Because an existing structure in a gravel communications yard would be used under Alternative 4, there would be no temporary or permanent disturbance areas.

2.5.7 Building Maintenance or Construction

Depending on the alternative selected, the existing communications building at some Project components would be maintained or remodeled, or a building addition would be constructed immediately adjacent to and adjoining to an existing USFS communications building. The activities that would be conducted under each alternative are shown in Table 2-4.

Table 2-4. Communications Building Work

Alternative	Type of Work	Description of Building Work
2A		
Marys Peak	Improvement	Paint existing building and install an HVAC system. <i>Install a security system, including outdoor motion-sensor activated lighting</i>
Albany Substation	None	
3C		
Marys Peak	Build addition	Construct a concrete block building addition on a concrete slab with a metal roof, single door and no windows on the east side of the USFS building <i>(13 feet by 25 feet and 8 feet tall)</i> ; install an HVAC system; <i>and install a security system, including outdoor motion-sensor activated lighting</i> ; 13 feet by 25 feet and 8 feet tall
Albany Substation	None	
4		
West Point Spur	Improvement	Create a separate BPA communications area within the existing building by erecting a partition and potentially installing a separate door from the outside; install an HVAC system. <i>Install a security system, including outdoor motion-sensor activated lighting</i>
Prospect Hill	None	

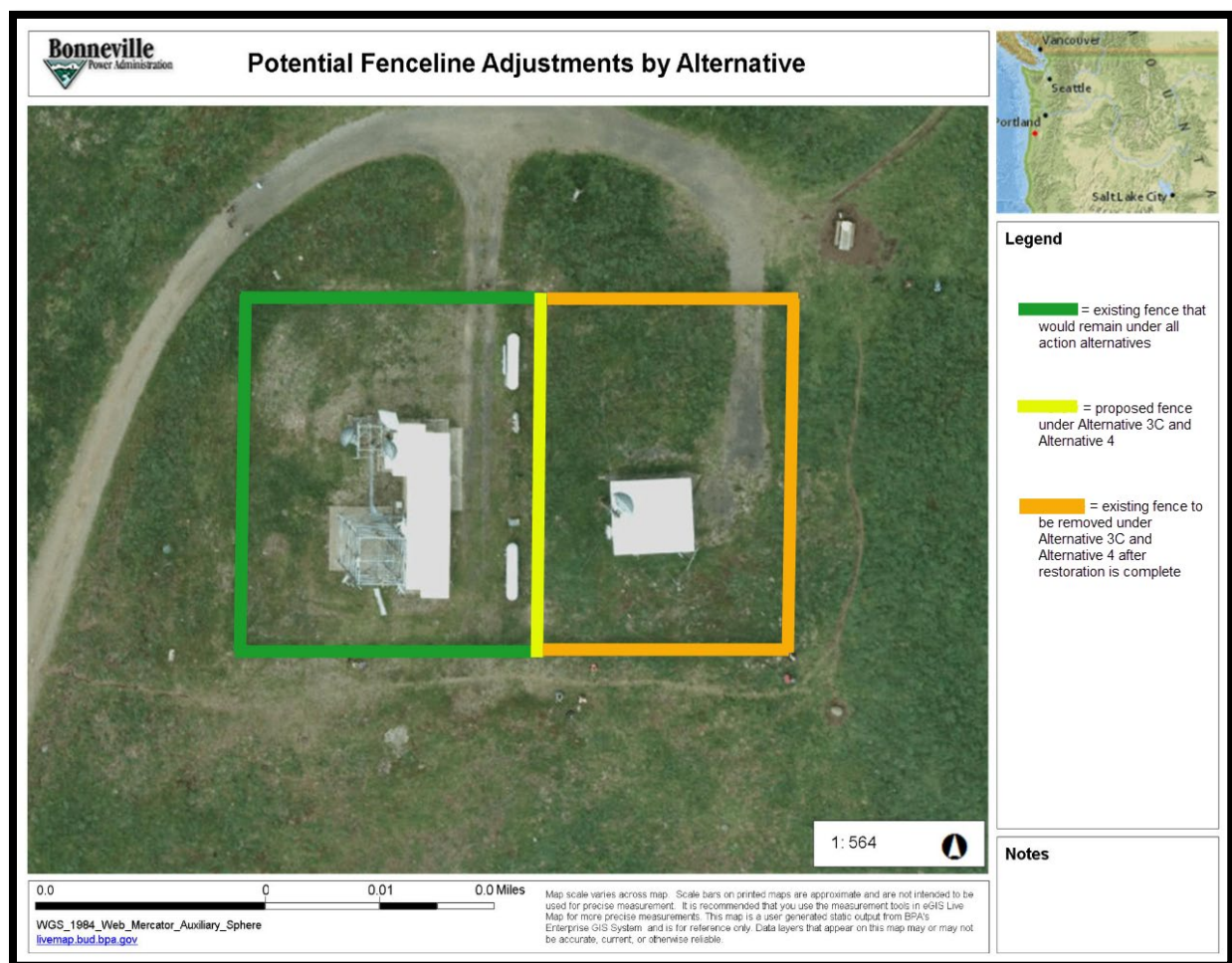
Depending on the action alternative, electrical service would be upgraded, removed, or installed. Under Alternative 2A, existing electrical service would be upgraded by installing a new electrical meter and digging a trench to lay new wire to the building. Under Alternative 3C and Alternative 4, the existing BPA electrical meter would be disconnected or removed.

The following are temporary and permanent disturbance areas that would be impacted by constructing or maintaining a communications building:

- Alternative 2A: No temporary or permanent disturbance because the building is existing
- Alternative 3C: Temporary disturbance areas are already accounted for in staging areas; 378 square feet of permanent disturbance
- Alternative 4: No temporary or permanent disturbance because the building is existing

2.5.8 Fencing

Under Alternative 3C and Alternative 4, USFS would ~~remove~~ *need to approve the removal of* approximately 229 feet of fencing (*fence segment represented by orange-colored line, Map 2-3*) from around the BPA communications site after the BPA site is removed and the site is restored.



Map 2-3. Proposed fenceline adjustments at the Marys Peak summit under Alternative 2A and Alternative 3C. (New map added based on public comments received; provides visual representation of potential fenceline adjustments for the three Action Alternatives).

After USFS approval, BPA would fund the removal of these segments of the chain link fence. Because the existing chain link fence posts were installed in concrete footings and are connected to lightning protection ground rods underground, the fence posts to be removed would be cut off at ground surface level and the above ground segments would be removed. To minimize the amount of ground disturbance area, the concrete fence post footings and ground rod material would remain in place underground. Prior to site revegetation and the removal of fencing from around the BPA communications site, a new 100-foot length of fence (fence segment represented by yellow-colored line, Map 2-3) would be installed approximately 60 feet closer to the USFS communications site than the current location of the eastern fence line's location. Alternative 2A does not propose any changes to the fence.

The areas where temporary disturbance would occur due to fencing removal and new fencing installation activities on Marys Peak summit under Alternative 3C and Alternative 4 are included under other activities and are not accounted for in this section. The installation of new fencing would have a negligible permanent disturbance area because vegetation could grow into the chain link material and immediately adjacent to the fence posts after revegetation.

Under Alternative 4, some repair to the existing CPI communications site fence may occur.

2.5.9 Propane Tank

Under Alternative 2A, the existing propane tank at the Marys Peak BPA communications site would be replaced or repainted. Under Alternative 3C, the existing propane tank at the Marys Peak BPA communications site could be removed, relocated or replaced. Alternative 4 could require the installation of a new propane tank at the CPI communications site. Tanks are generally about 2,000 gallons and mounted on two concrete footings per tank. A supply line from the tank to the building would be installed by excavating a trench and laying the gas line.

Temporary and permanent disturbance due to propane tank removal, relocation or replacement would be negligible because these areas are primarily graveled surfaces with minimal existing vegetation. If it is decided that a propane tank should be replaced under Alternative 3C, it would be located within the fence.

2.5.10 BPA Communications Site Demolition

Under Alternative 3C and Alternative 4, the BPA Marys Peak communications site would move to a different location and the existing site would no longer be needed. Once the new communications site becomes fully operational, the existing BPA communications site would be dismantled and all BPA owned and operated structures, equipment, and other materials removed. The original grade would be reestablished as much as possible. *A new 100-foot length of fence (fence segment represented by yellow-colored line, Map 2-3) would be installed approximately 60 feet closer to the USFS communications site than the eastern fence's current location.*

The existing fence would likely remain in place until site restoration was completed. ~~After restoration, USFS would remove the portion of the fence around the BPA communications site and build a fence about 60 feet closer to USFS site.~~ *After restoration, the USFS would need to approve the removal of the fence segments (fence segment represented by orange-colored line, Map 2-3) from around the BPA communications site prior to BPA funding the fence removal work.*

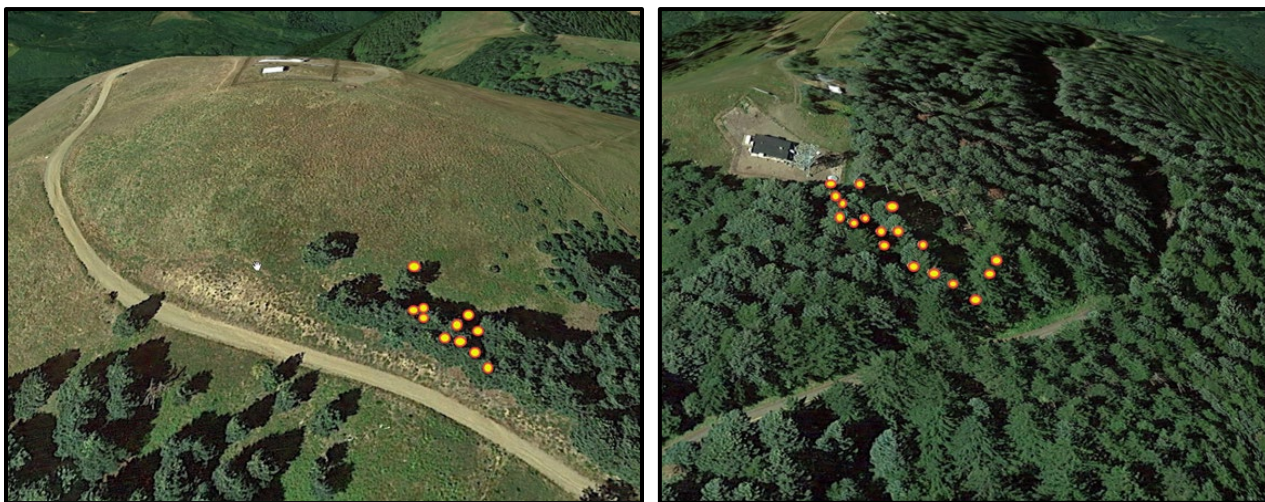
Removing BPA's existing communications building and structures would likely take place a year after relocation. Demolition would temporarily disturb about 0.14-acre (excluding the building footprint), and the entire BPA site would be revegetated under Alternative 3C and Alternative 4. This temporary disturbance area is already accounted for in the staging area associated with Alternative 3C, but not

accounted for under the staging areas for Alternative 4. Therefore, under Alternative 4, the restoration area is considered a temporary disturbance area.

2.5.11 Tree Cutting

Under Alternative 2A and Alternative 3C, up to 14 noble firs located on 0.53 acre of BLM lands near the Marys Peak summit would be cut to create an unobstructed microwave beam path (Photograph 2-17). Trees would be cut at a shorter height with chainsaws to remove the beam path obstruction, and left as **snags** at least 20 feet tall or taller, if possible. Heavy equipment and log trucks would not be used under any action alternative. The cut wood and debris would be scattered on the forest floor in the immediate vicinity on BLM's land. If tree tops **inadvertently** roll downhill onto the access road, then they would be chipped and hauled offsite for disposal. Trees would be cut between August 15 and March 1 to avoid the typical nesting period for birds.

Under Alternative 4, up to 20 conifer trees on 0.76 acre of City of Corvallis lands at West Point Spur (Photograph 2-18) would be cut at a shorter height with chainsaws to remove the beam path obstruction. The trees would be left as snags at least 20 feet tall or taller, if possible. Heavy equipment would not be needed because the cut portions of trees would not be removed from the site. The cut wood and debris would be left on the forest floor **in the immediate vicinity on City of Corvallis land**. Cutting would occur between August 15 and March 1 to avoid the typical nesting period for birds.



Source: Map Data ©2016 Google

Photograph 2-17 (left). Yellow dots show the location of noble firs that would be cut at Marys Peak, located about 30 feet from the unpaved access road. The BPA Marys Peak communications site is near the top of the photo.

Photograph 2-18. Yellow dots show the location of conifers that would be cut at West Point Spur; the closest tree is about 40 feet from Marys Peak Road. The CPI communications site is in upper left of the photo.

In some areas it may not be safe to leave trees as snags. For example, under Alternative 4, trees immediately adjacent to Marys Peak Road may need to be cut near the base, rather than left as snags, so they do not eventually fall into the road. Similarly, any trees close to the chain link fence around the CPI communications site would be cut near the base so they would not eventually fall into the communications site, potentially damaging equipment.

2.6 Site Restoration

Under the action alternatives, after construction is completed at each Project component, the construction contractor would remove construction equipment and debris, and restore the original

grade as much as possible. At Marys Peak, areas disturbed by construction activities would be revegetated according to a **Project** Revegetation Plan that ~~would be~~ **was** developed by USFS botanists, **and is available on the Project website at www.bpa.gov/goto/MarysPeak**. The **Project** Revegetation Plan ~~would specify~~ **provides revegetation details that are applicable for any of the action alternatives that could be selected, and specifies** the planting areas, species to be planted, source of seeds and other **propagules**, planting methods, timing of planting, how successful outcomes would be defined (performance **success** criteria), how and when the plantings would be monitored, and how weed control would be implemented during revegetation. Soils that are compacted in temporary disturbance areas would be decompacted, if needed, before planting.

At the summit of Marys Peak (all action alternatives), revegetation would be done with plant species that are known to occur on Marys Peak, from plant propagules obtained on Marys Peak. If Alternative 2A is selected, the revegetation area would be about 6,500 square feet (0.15 acre), but if Alternative 3C or Alternative 4 is selected, the revegetation area would be about 7,700 square feet (0.18 acre).

Plantings could involve the use of seeds gathered at Marys Peak or plants grown from seeds or propagules gathered at Marys Peak. The existing fence around the Marys Peak communications site would be left in place during restoration of the site to protect the plantings from trampling and disturbance. The new length of fencing would need to be constructed prior to revegetation so that any disturbance areas could also be revegetated. The plantings would be monitored each year until the defined performance criteria are accomplished. If some aspects of the plantings are not successful for some reason, additional planting, weeding, or other actions would be implemented to ensure success.

If Alternative 4 is selected, the construction disturbance areas at West Point Spur would be revegetated. Revegetation would be done with plant species that are known to occur on Marys Peak using plant propagules obtained on Marys Peak, according to a **Project** Revegetation Plan.

At the BPA Albany Substation and BPA Prospect Hill communications sites, revegetation would not be needed because work would only occur on existing structures, located within graveled yards. The BPA Albany Substation has no vegetation and Prospect Hill has sparse vegetation cover by non-native species, including weeds.

2.7 Construction Schedule

If an action alternative is selected, the expected duration of construction activities would be from three to six months. After completion of the environmental review process, acquisition of land rights and easements could begin, followed by construction during the summer and fall of ~~2021~~ **2022 or 2023**.

2.8 Operation and Maintenance

If an action alternative is constructed, BPA would perform routine, periodic maintenance and emergency repairs on the BPA communications site at Marys Peak or at West Point Spur, and at Prospect Hill or at the BPA Albany Substation. However, under all action alternatives, the need for both routine and emergency maintenance would likely decrease. Routine maintenance would be expected to decrease for a time due to new communications equipment. Each communications site would be visited several times per year for maintenance, up to once a month during the months when the site is accessible. Propane tanks would be filled each year or every other year, as needed. Under all action alternatives, there would be less need for emergency maintenance because the microwave dish would be securely mounted to a steel-lattice structure. This would help ensure the microwave dish would remain properly aligned during severe weather.

Under the No Action Alternative, routine and emergency maintenance would likely be needed more frequently as equipment fails and facilities deteriorate. Because the microwave dish at the BPA Marys

Peak communications site would remain mounted on the unstable wood-pole, the need for emergency actions to realign or reattach the microwave dish would continue.

2.9 Best Management Practices and Mitigation Measures

BMPs that would be implemented are identified in Chapter 3, under each applicable resource. In addition to BMPs, mitigation measures have or will be identified through preparation of this EA. Mitigation measures are actions that are taken to avoid, minimize or compensate for impacts to the environment. Mitigation measures would be done prior to, during, or immediately after construction. These mitigation measures, if known at this time, are identified in the discussion of each resource in Chapter 3. ~~It is expected that a~~ Additional mitigation measures ~~could be~~ *were* identified through public review of the draft EA *and have been added to the applicable resource sections in Chapter 3.*

If an action alternative is selected, a Mitigation Action Plan (MAP) would be prepared. The MAP would explain how mitigation measures identified for the Project would be planned and implemented. Monitoring during and after construction would help ensure implementation and success of the mitigation measures.

2.10 Alternatives Considered but Eliminated

For the Marys Peak BPA Communications Site Project, BPA considered whether each potential alternative would meet the identified need and facilitate achievement of the Project's purposes (see Section 1.4). BPA also considered whether the alternative would be practical and feasible, from a technical and economic standpoint. This section summarizes the alternatives that were considered but eliminated from detailed study in light of these considerations. The alternatives that were presented to the public during past scoping efforts are numbered (2B, 3A, 3B, 5), while those without numbers were not presented during scoping. The alternatives were eliminated from further consideration for the reasons stated below.

2.10.1 Site with No Line of Sight to Existing BPA Communications Sites

Reliable communications between BPA dispatch and field staff require establishing an unobstructed line of sight between any new communications site and an existing BPA communications site. BPA used the Path-loss software program to determine the feasibility of establishing microwave communications to all potential communications sites. These seven communications sites were eliminated from further consideration because they lacked line of sight to an existing BPA communications site due to obstructions, such as mountain peaks:

- Cannibal Radio Station
- Cline Hill Radio Station
- Coastal Radio Station
- Goodwin Radio Station
- Perpetua Radio Station
- SNF Radio Station
- Yaquina Radio Station

2.10.2 Low Elevation Sites with Substantial Loss of VHF Communications Coverage

The BPA Marys Peak communications site VHF equipment provides communications coverage of BPA transmission lines, substations, access roads, and highways throughout the Oregon Coast Range and Willamette Valley. Acceptable alternatives must be capable of providing similar VHF communications coverage. BPA found that alternatives at relatively low elevation sites in the Willamette Valley are not capable of providing adequate VHF coverage of BPA's service area in the Oregon Coast Range and coastal areas.

The following seven sites were eliminated from further consideration because their use would substantially diminish VHF communications coverage below the level of coverage currently provided by the BPA Marys Peak communications site:

- Coburg Radio Station
- Fern Radio Station
- Horton Radio Station
- Laupiel Radio Station
- Monroe Radio Station
- Prairie Radio Station
- Roman Radio Station

2.10.3 Other Sites with Substantial VHF Communications Coverage Loss

These existing sites could be capable of providing some of the VHF communications coverage that is provided by BPA's existing Marys Peak VHF communications equipment. To further evaluate these alternatives, BPA engineers coordinated with BPA's VHF communications equipment vendor and BPA's Geospatial Services team to develop differential VHF communications coverage maps. BPA engineers considered whether use of these sites would result in substantial loss of VHF communications coverage. The following sites were eliminated from further consideration because their use would substantially diminish VHF communications coverage relative to the level of coverage currently provided by the BPA Marys Peak communications site:

- Alsea Falls Radio Station
- Herman Peak Radio Station
- Mapleton Radio Station
- Prairie Peak Radio Station
- Roman Nose Radio Station
- Toledo Radio Station
- Vineyard Mountain Radio Station
- Walton Radio Station

2.10.4 Locations without an Existing Power Source

All BPA communications sites require an AC power source from an electrical distribution system. While each of these sites were either suggested during scoping or identified by BPA engineers, BPA was unable to identify the presence of any communications facilities or infrastructure. These sites are either undeveloped sites or minimally developed sites. Preliminary estimates indicate that establishing AC distribution service at these locations could cost up to or exceed \$2 million, depending on the length of the distribution line. This cost is in addition to the cost of the new communications facility.

The following sites were eliminated from further consideration because of the high cost of installing AC electrical distribution service:

- Cummins Radio Station
- Euchre Radio Station
- Franklin Ridge Radio Station
- Grass Mountain Radio Station
- Old Blue Mountain Radio Station
- Pioneer Butte Pioneer Radio Station
- Table Radio Station

2.10.5 Marys Peak – Federal Aviation Administration (FAA) Communications Site

The FAA communications site is located between West Point Spur and Marys Peak. The site is visible from the summit of Marys Peak. While the FAA site is readily accessible, it does not meet all of BPA's technical requirements. The FAA communications structure is about 40 feet tall, which is not tall enough to establish a microwave line of sight to an existing BPA communications site. In addition, based on the building dimensions, this site lacked sufficient space to accommodate BPA's communications equipment. The FAA communications site was eliminated from further consideration because of these deficiencies.

2.10.6 West Point Spur – Co-locate at Union Pacific Railroad Communications Site

The Union Pacific Railroad communications site is the westernmost building on West Point Spur. Although the communications structure seems to be tall enough to establish a microwave line of sight to the BPA Prospect Hill communications site, a structure loading analysis would be required to determine whether it could support the additional load from BPA’s antennas. The communications building shows signs of substantial weather-related and water-related damage, which could result in damage to or failure of communications equipment. This site also has limited space, no fencing around its structures, and evidence of substandard coaxial cable management and protection, and the access road would need improvement. Because reliability is one of BPA’s requirements for an alternative, the condition of Union Pacific Railroad’s facilities led BPA to eliminate the Union Pacific Railroad site from further study.

2.10.7 West Point Spur – Co-locate at Silke Communications Site

Silke Communications has two communications sites at West point Spur. The site has a wood-pole structure supported with guy wires, which could be tall enough to establish a microwave line of sight to the BPA Prospect Hill communications site. However, there is not sufficient space at the appropriate antenna height to facilitate this microwave shot, it is unlikely that the wood pole could structurally support BPA’s antennas, and the access road would need improvement. Because reliability is one of BPA’s requirements for an alternative, the condition of the facility led BPA to eliminate the Silke communications site from further study.

2.10.8 West Point Spur – Co-locate at NW Natural Gas Communications Site

The NW Natural Gas communications site at West Point Spur is accessed by a road that would require minor improvements. There is a steel-lattice structure with three microwave antennas. Assuming the structure is capable of passing a structure loading analysis with BPA antennas, it is feasible that the NW Natural Gas communications structure would be able to accommodate a microwave line of sight to the BPA Prospect Hill communications site. Tree cutting would likely be required for an unobstructed microwave path. Although the building seems to be in good shape, it is likely not large enough to accommodate BPA’s communications equipment and was consequently eliminated from further consideration.

2.10.9 Use of Satellite Phone

During public scoping for the Project *and again during the public comment period for the draft EA*, it was suggested that BPA field crews use satellite phones to communicate with BPA dispatch, instead of maintaining and upgrading the existing communications network. *The use of satellite phones is not considered a reasonable replacement for the mobile radio system because of their limited reliability compared to the mobile radio system for the reasons that follow.*

The communications protocol BPA dispatchers use to communicate with personnel working in the field requires real-time, three-part voice communication. This protocol ensures definitive confirmation from dispatch of a safe situation before a field crew member proceeds to work in a potentially dangerous high-voltage situation. First the sender speaks the message, the receiver then repeats the message, and the sender then responds.

When communication repeaters are located at key locations such as Marys Peak, the VHF band can reach into valleys where BPA field crews drive and work. VHF bands can traditionally penetrate thick vegetation, such as dense forested areas, to provide reliable communications. This is an essential form of communication for BPA field crews who often times work in remote and isolated areas, including areas with heavy forest canopy cover and dense vegetation. Satellite phones often have

difficulties transmitting clear voice messages in thick vegetation, or in heavy rain or snow conditions that would be problematic in a life-safety dependent situation. When operating and maintaining live-wire, high-voltage transmission lines, which get “turned-on” and “turned-off” by operators at locations potentially hundreds of miles away from the work that is being performed on the transmission line by the field crews, it is imperative for the crews working at remote sites on the transmission line that the BPA operator and field crew communication regarding the status of the line be reliable before the field crew may proceed to prevent a life-safety situation.

One type of satellite phone technology, Garmin InReach™, uses the Iridium satellite network with up/downlink frequencies 1616 to 1626.5 MHz in the L Band. BPA has tested extensively satellite phones using this network and experienced call drops in valleys and loss of signal under trees. This system would require a mobile radio system backup to provide adequate coverage for BPA.

BPA uses satellite phones when feasible and practicable for voice communication, but not as the primary means of communication where the safety of its crews are at stake because such phones lack the reliability and precision of the VHF communications system. BPA dispatch and crews also do not use satellite phones for text messaging because it is illegal to text and drive, is impossible to text while wearing thick gloves, and texting is error prone.

For these reasons, BPA does not rely primarily on satellite phone technology, and this alternative was considered but eliminated from further study.

Satellite phones are currently used by BPA crews to supplement BPA's mobile radio system but they are not considered a primary means of voice communications because several factors limit their reliability compared to the mobile radio system. These factors include the inability to control maintenance and outage intervals of third party satellite systems, limited effectiveness in areas with tree cover, and loss of coverage depending on the positioning of satellites in relation to the local terrain. The use of satellite phones is not considered a reasonable replacement for the mobile radio system because of their limited reliability compared to the mobile radio system.

2.10.10 Alternative 2B

Alternative 2B (Marys Peak at Existing BPA Site – BPA Prospect Hill Site) was presented to the public during the additional scoping period. Communications under Alternative 2B would go to the BPA Prospect Hill communications site, while communications under Alternative 2A would go to the BPA Albany Substation. Alternative 2A is preferred because the communications path from the BPA Marys Peak communications site to the BPA Albany Substation is a shorter than to BPA Prospect Hill. A shorter path equates to less loss of the communications signal. Additionally, the steel-lattice communications structure at the BPA Albany Substation has no attached communications equipment, whereas the structure at the BPA Prospect Hill communications site currently has microwave dishes and other communications equipment and would require structural modifications to support any additional equipment. Alternative 2B was eliminated from further consideration because Alternative 2A accomplishes the same connection to BPA's communication system with better reliability and more capacity on the steel-lattice structure at the BPA Albany Substation than at Prospect Hill.

2.10.11 Alternative 3A

Alternative 3A (Marys Peak Co-locate at New USFS Site – BPA Albany Substation) was presented to the public during the additional scoping period. The communications under Alternative 3A would go to the BPA Albany Substation, which is a shorter communications path than if it was pointed to BPA Prospect Hill. Alternative 3A was eliminated by USFS from further study because it called for USFS to construct a new building on Marys Peak summit to replace the existing USFS and BPA buildings. Alternative 3A was also eliminated from further consideration because Alternative 3C accomplishes the same objective and

is more cost effective by expanding the existing USFS building rather than constructing a new larger building.

2.10.12 Alternative 3B

Alternative 3B (Marys Peak Co-locate at New USFS Site – BPA Prospect Hill Site) was presented to the public during the additional scoping period. Communications under Alternative 3B would go to the BPA Prospect Hill communications site. Alternatives with communications going from the BPA Marys Peak communications site to the BPA Albany Substation are preferred because the path to the BPA Albany Substation is shorter than to BPA Prospect Hill. A shorter path equates to less loss of the communications signal. Additionally, the steel-lattice communications structure at the BPA Albany Substation has no attached communications equipment, whereas the structure at the BPA Prospect Hill communications site currently has microwave dishes and other communications equipment and would require structural modifications to support any additional equipment. Alternative 3B was eliminated from further consideration because Alternative 3C accomplishes the same connection to BPA’s communications system with better reliability and more capacity on the steel-lattice structure at the BPA Albany Substation than at Prospect Hill.

2.10.13 Co-location at existing USFS Site in Separate Building Addition with New 100-foot Steel-Lattice Structure

Co-location would include construction of a new BPA building addition located immediately adjacent and adjoining to the east side of the existing USFS building. The current BPA building would be demolished. The existing USFS building would be maintained. It would also include construction of a 100-foot tall steel-lattice communications structure on the southeast side of the new USFS building addition and removal of the existing ODOT and USFS steel-lattice structures and BPA wood pole.

The SNF Plan (1990) includes *Visual Quality Objectives (VQOs)* for the Marys Peak SBSIA. A scenic resources assessment of this option was completed by AECOM, a BPA contractor, and reviewed by Jessica Dole, an SNF landscape architect. In that assessment, visual simulations at several key viewing areas were used to determine the potential impact of a 100-foot tall steel-lattice structure on Marys Peak scenic quality. The assessment revealed that a 100-foot steel-lattice structure would be dominant in view from the primary viewing area – the meadow viewpoint and trailhead area below the summit. The scale of the steel-lattice structure above the noble fir forest would be clearly out of scale with the natural setting, and would create an obvious and substantial modification in the natural appearing view. USFS concluded that a 100-foot steel-lattice structure would not meet the Marys Peak SBSIA’s natural appearing scenic quality objective of retention.

Because co-location as described above would not meet the requirements of the SNF Plan, it was eliminated from further consideration.

2.10.14 Alternative 5

BPA considered constructing a new BPA communications site at West Point Spur in an undeveloped location. This alternative was presented during public scoping as Alternative 5. This site is about 300 feet to the west of and downhill from the existing CPI communications site on City of Corvallis lands.

The undeveloped site is accessed from the same road that leads to the CPI site (NF-112). An overgrown, 130-foot long, unpaved spur road off of NF-112 leads to the undeveloped site. The site is vegetated with grasses and conifers and surrounded by forested areas with the exception of the southwest corner, where it is a clear-cut open grassy area.

BPA developed a conceptual plan to consider what would be required to develop the site. Only a portion of the undeveloped site (about 75 feet by 75 feet) is relatively flat and the northern and

southern sides of the site slope down at about 30 degrees. The existing undeveloped site would require site preparation for the building foundation, footings for a 100-foot tall steel-lattice structure, propane tank installation, electrical service installation, parking, vehicle turnaround and vehicle pullout areas, and a level area to erect a chain link fence around the site.

To develop this site, the soil would need to be excavated down about 3.5 feet and about 836 cubic yards of soil and rock would be removed from the site. About 0.3 acre would be graded. This includes the area where an access road would need to be reconstructed to access the site. About 65 trees would need to be removed to develop the communications site and create an unobstructed microwave beam path. These trees are noble fir and Douglas-fir, ranging from 7 inches to 46 inches diameter at breast height (dbh).

Developing a new site would involve the most work compared to the other proposed alternatives, including extensive grading and soil movement, cutting 65 conifers, installing of new electrical service, and trenching for the erection of a new fence. The new steel-lattice communications structure would be the tallest under all proposed action alternatives. Alternative 5 would be the only alternative to require road reconstruction. This level of work would result in greater impacts to soils, vegetation, and wildlife than under other proposed alternatives and it would be about twice as expensive as other alternatives.

Because the communications capabilities of Alternative 5 would be about the same as Alternative 4, but Alternative 5 likely would result in greater impacts to resources and would cost more, BPA eliminated Alternative 5 from further consideration.

2.10.15 Marys Peak Co-locate at New USFS Facility with Public Access Observation Deck

During scoping, a member of the public proposed co-locating the BPA and USFS communications facilities with a recreational use facility on a smaller footprint atop Marys Peak (Figure 2-2). The plan for the site was well thought out conceptually. However the public proposal would not meet BPA and industry public safety and security standards for communications sites.

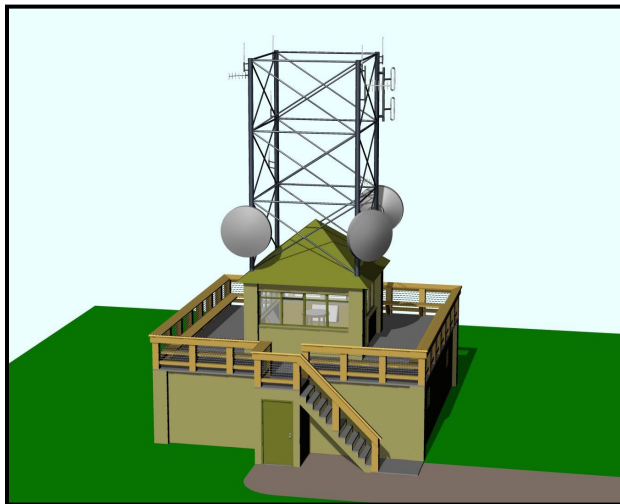


Figure 2-2. Conceptual rendering of proposed BPA/USFS combined facility with an observation deck.

An antenna attached to the building can attract lightning and this risk would need to be mitigated. Under the action alternatives, the public would be protected from close proximity with the antenna and to grounding rods inside the fence. Under this proposal, the public would have open access to the building and could walk under the steel-lattice structure, which could result in injury or death by a lightning strike. Also, this alternative would allow the public access to areas near microwave dishes at the facility, which could pose a potential radiation hazard. During winter, there would be the added risk of damage to the building or injury or death to the public from ice fall from the steel-lattice structure.

Open access to such a facility also raises concerns of vandalism and camping near the facilities.

Before the fence was installed, some people used to camp near the buildings and would light fires. If there was public access, propane tanks that are not part of the structure would have to be fenced or

otherwise secured for safety, all connections (AC outlets, lighting, etc.) would have to be protected to prevent tampering, and all materials used would have to be noncombustible.

Also, a preliminary size estimate of a square building sufficient to accommodate infrastructure and be lightning resistant would be almost 2,000 square feet. The steel-lattice communications structure would need to be at least 100 feet tall, much taller than any of the action alternatives.

This proposal would also be much more expensive than other alternatives. It would remove all structures currently in place for a new one. It is not economically feasible for the USFS to build such a site. USFS capital funds for construction are limited and there is a large backlog of deferred maintenance for all recreation and administrative sites. A site like this would be costly to build and maintain, and would not be sustainable at such a severe weather site. For all of these reasons, this alternative was eliminated from further consideration.

2.11 Comparison of Alternatives

The following pages contain two summary tables. Table 2-5 compares how the three action alternatives and the No Action Alternative would meet the purposes of the Project as defined in Sections 1.3 and 1.4 of this EA. A summary of the analysis of potential environmental impacts under each alternative is presented in Table 2-6.

Table 2-5. Comparison of Alternatives to Project Purposes

Project Purposes	Alternatives			
	2A	3C	4	No Action Alternative
Meet standards to support the safe and reliable operation and maintenance of the FCRPS	Yes	Yes	Yes	No; risks to reliable communications due to unstable wood monopole, unreliable back-up power system, and equipment subject to temperature fluctuations
Provide VHF communications coverage equal or better to what currently exists	Yes	Yes	No; lesser or no coverage in some portions of BPA's Eugene region	Yes
Continue to meet BPA's contractual obligations	Yes	Yes	Yes	Yes
Demonstrate responsible environmental stewardship	Yes	Yes	Yes	Yes
Demonstrate cost-effectiveness	Estimated cost: \$800,000 \$1.1 million	Estimated cost \$1 million \$1.3 million	Estimated cost \$700,000	No immediate costs would be incurred if the Project is not implemented. However, maintenance costs due to the unstable wood monopole and outdated equipment would likely increase until replacement would once again need to be considered.

Project Purposes	Alternatives			
	2A	3C	4	No Action Alternative
				Given inflation, future costs of replacement would likely be higher.
Use facilities and resources efficiently	Yes	Yes	Yes	No; maintaining old equipment and facilities requires more maintenance and repair

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2.12 Summary of Potential Resource Impacts

Chapter 3 describes potential impacts on human and natural resources from the action alternatives. Potential environmental impacts are summarized by resource in Table 2-6 to enable comparison among alternatives. Some resources (Wetlands and Water Resources, Fish, Transportation, Public Services, and Environmental Justice Populations) are not analyzed in this EA because implementation of any of the action alternatives would have no or minimal impacts compared to the No Action Alternative (see Section 3.1).

In Table 2-6, the level of impact that would be expected to result after implementation of the mitigation measures and BMPs is listed in each resource section. The table lists direct and indirect impacts that may occur from Project activities and the levels of temporary and permanent impacts.

Table 2-6. Comparison of Environmental Impacts by Alternative

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
Land Use and Recreation Section 3.3	<p>At <u>Marys Peak</u>, moderate temporary impacts from access restrictions during construction</p> <p>No permanent impacts from access restrictions</p> <p>At <u>Albany Substation</u>, no temporary or permanent impacts from access restrictions during or after construction</p>	<p>At <u>Marys Peak</u>, same impacts as Alternative 2A, with the additional low beneficial effect from removal of the BPA communications site</p> <p>At <u>Albany Substation</u>, same impacts as Alternative 2A</p>	<p>At <u>West Point Spur</u>, low temporary impacts from access restrictions during construction</p> <p>No permanent impacts from access restrictions</p> <p>At <u>Prospect Hill</u>, no temporary or permanent impacts due to small scope of work and limited recreational opportunities</p> <p>At <u>Marys Peak</u>, moderate temporary impacts from access restrictions</p> <p>No permanent impacts from access restrictions</p> <p>Low beneficial effect from removal of the BPA communications site</p>	<p>At <u>Marys Peak</u>, low impacts from periodic maintenance activities and emergency repairs</p> <p>At <u>Prospect Hill</u>, no impacts from periodic maintenance activities and emergency repairs</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
<p>Geology and Soils Section 3.4</p>	<p>At <u>Marys Peak</u>, low temporary impacts on 0.23 acre of geology and soils from construction and staging</p> <p>Low permanent impacts on 0.03 acre of geology and soils from excavating and covering soils with foundations or rock and access road improvement</p> <p>Low impacts from potential erosion caused by construction</p> <p>Low temporary impacts on 0.53 acre of soils from tree cutting</p> <p>At <u>Albany Substation</u>, no impacts because no ground disturbance</p>	<p>At <u>Marys Peak</u>, low temporary impacts on 0.35 acre of geology and soils from construction and staging</p> <p>Low permanent impacts on 0.05 acre of geology and soils from excavating and covering soils with foundations or rock and access road improvement</p> <p>Low impacts from potential erosion caused by construction, including demolition of BPA communications facility</p> <p>Low temporary impacts on 0.53 acre of soils from tree cutting</p> <p>At <u>Albany Substation</u>, no impacts because no ground disturbance</p>	<p>At <u>West Point Spur</u>, low temporary impacts on 0.15 acre of soils from construction and staging</p> <p>Low permanent impacts on 0.01 acre of soils from excavating and covering soils with foundations or rock</p> <p>Low impacts from potential erosion caused by construction</p> <p>Low temporary impacts on 0.76 acre of soils from tree cutting</p> <p>No impact on underlying geology</p> <p>At <u>Prospect Hill</u>, no impacts on geology or soils due to lack of ground disturbance</p> <p>At <u>Marys Peak</u>, low temporary impacts on 0.14 acre of soils from removal of existing communications site</p> <p>Low impacts from potential erosion caused by demolition</p> <p>No permanent impacts on geology or soils</p>	<p>At <u>Marys Peak</u>, low periodic impacts on soils from maintenance activities and emergency repairs that could disturb soils within the fence; no impact on geology</p> <p>At <u>Prospect Hill</u>, no impacts on geology or soils from maintenance activities and emergency repairs</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
Vegetation Section 3.5	<p>At <u>Marys Peak</u>, moderate impacts from construction:</p> <p>Temporary disturbance of 0.23 acre of moderate-quality grassland (would be revegetated)</p> <p>Permanent removal of 0.03 acre of moderate-quality grassland</p> <p>Moderate impacts from potential erosion outside fence and the introduction of weed species</p> <p>Moderate impacts from cutting 0.53 acre of high-quality forest (about 14 noble fir) that could be habitat to USFS sensitive fungi species</p> <p>At <u>Albany Substation</u>, no impacts (work area is not vegetated)</p>	<p>At <u>Marys Peak</u>, moderate impacts from construction:</p> <p>Temporary disturbance of 0.35 acre of moderate-quality grassland (would be revegetated)</p> <p>Permanent removal of 0.05 acre of moderate-quality grassland</p> <p>Moderate impacts from potential erosion outside fence and the introduction of weed species</p> <p>Moderate impacts from tree cutting (same as Alternative 2A)</p> <p>Low beneficial effect of removal of the BPA Marys Peak communications site and revegetation of the area</p> <p>At <u>Albany Substation</u>, no impacts (work area is not vegetated)</p>	<p>At <u>West Point Spur</u>, moderate impacts from construction:</p> <p>Temporary disturbance of 0.15 acre of moderate-quality grassland (would be revegetated)</p> <p>Permanent removal of 0.01 acre of moderate-quality grassland</p> <p>Moderate impacts from potential erosion outside fence and introduction of weeds</p> <p>Moderate impacts from cutting 0.76 acre of high-quality forest (about 20 conifers)</p> <p>At <u>Prospect Hill</u>, low impacts from the temporary disturbance of low-quality, weedy vegetation within the fence</p> <p>At <u>Marys Peak</u>, temporary low impact on 0.14 acre of primarily non-native vegetation; low beneficial effect of removal of the BPA communications site and revegetation of the area</p>	<p>At <u>Marys Peak</u>, low impacts from maintenance activities and emergency repairs that would disturb vegetation within the fence</p> <p>At <u>Prospect Hill</u>, no impacts from maintenance activities and emergency repairs</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
<p>Wildlife Section 3.6 <i>(continued on next page)</i></p>	<p>At <u>Marys Peak</u>, low impacts from construction: Temporary disturbance of 0.23 acre of low-to-moderate quality grassland (would be revegetated) Permanent removal of 0.03 acre of low- to moderate-quality grassland Moderate potential impacts on wildlife habitat from risk of weed introduction and spread Low impacts from cutting 0.53 acre of high-quality forest habitat No impacts on 2 federally and state-listed species and low impacts on other species from loss of low- to moderate-quality grassland and high quality forested habitat, increased risk of collisions by non-ESA listed birds or bats with new structure, and temporary displacement or habitat degradation Moderate impacts from potential nest abandonment on non-ESA bird species due to noise or human activity</p>	<p>At <u>Marys Peak</u>, same impacts as Alternative 2A, except: Slightly larger area of disturbance of low-to moderate-quality grassland (0.35 acre temporary and 0.05 permanent), still a low impact Moderate impacts from potential nest abandonment on non-ESA bird species due to noise or human activity Low beneficial effect on wildlife habitat from removal of the BPA Marys Peak communications site and revegetation of the area</p>	<p>At <u>West Point Spur</u>, low impacts from construction: Temporary disturbance of 0.15 acre of low-to-moderate quality grassland (would be revegetated) Permanent removal of 0.012 acre of grassland Low impacts from cutting up to 0.76 acre of high-quality forest habitat Moderate potential impacts on wildlife habitat from risk of weed intro and spread Low beneficial effect on wildlife habitat from removal of the BPA Marys Peak communications site and revegetation of the area No impacts on 2 federally and state-listed species and low impacts on other non-ESA listed species from loss of low- to moderate-quality grassland and high-quality forested habitat, increased risk of collisions by birds or bats with new dish on existing structure, and temporary displacement Moderate impacts from potential nest abandonment on non-ESA bird species due to noise or human activity</p>	<p>At <u>Marys Peak</u>, low impacts on a small amount of localized low-to moderate-quality grassland habitat within the fenced communications site or along the access road from temporary and infrequent maintenance activities and emergency repairs No impacts on federal or state-listed species from temporary and infrequent maintenance activities and emergency repairs Low impacts on other special status species from temporary and infrequent maintenance activities and emergency repairs</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
<p>Wildlife Section 3.6 (continued)</p>	<p>At <u>Albany Substation</u>, installation of a new microwave dish on an existing structure and associated noise levels would have:</p> <p>No potential impacts on wildlife habitat;</p> <p>No impacts on federally and state-listed ESA-status species;</p> <p>No impacts on non-ESA listed wildlife species</p> <p>Low potential impacts from increased risk of collisions by non-ESA listed birds or bats with new structure</p> <p>No impacts to non-ESA listed species from displacement or loss of habitat or degraded habitat quality</p>	<p>At <u>Albany Substation</u>, same impacts as Alternative 2A</p>	<p>At <u>Prospect Hill</u>, installation of a new microwave dish on an existing structure would have same impacts as at Albany Substation under Alternative 2A</p> <p>At <u>Marys Peak</u>,</p> <p>Low temporary impacts on 0.14 acre of wildlife habitat within the fence during removal of the BPA communications site;</p> <p>Low beneficial effect on wildlife habitat from removal of the BPA Marys Peak communications site and revegetation of the area</p> <p>No impacts on federally and state-listed status species</p>	<p>At <u>Prospect Hill</u>, low impacts on a small amount of localized low-quality habitat within the fenced communications site from temporary and infrequent maintenance activities and emergency repairs</p> <p>No impacts on federal or state-listed species from temporary and infrequent maintenance activities and emergency repairs</p> <p>Low impacts on other wildlife species including other special-status species from temporary and infrequent maintenance activities and emergency repairs</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
<p>Visual Quality Section 3.7</p>	<p>Within <u>Marys Peak SBSIA</u>, moderate temporary impacts during construction on Marys Peak summit, along access road, and during tree cutting</p> <p>Moderate permanent impacts from new 40-foot steel-lattice structure</p> <p>Low permanent impacts from tree cutting and access road improvements</p> <p>No impacts for viewers <u>in the Willamette Valley or in the Coast Range</u>, due to distance from the communications site</p> <p>At <u>Albany Substation</u>, low temporary impacts for nearby residents or park users during a few days of construction; low to moderate permanent impacts due to new microwave dish</p>	<p>Within <u>Marys Peak SBSIA</u>, moderate temporary impacts during construction on Marys Peak summit, along access road, and during tree cutting</p> <p>Moderate permanent impacts due to new 60-foot steel-lattice structure</p> <p>Low permanent impacts from tree cutting and access road improvements</p> <p>Low beneficial effect from removal of the existing BPA communication site and revegetation</p> <p>No impacts for viewers <u>in the Willamette Valley or in the Coast Range</u></p> <p>At <u>Albany Substation</u>, same impacts as Alternative 2A.</p>	<p>At <u>West Point Spur</u>, no impacts during construction except for low temporary impacts during tree cutting</p> <p>Low permanent impacts from changes at West Point Spur</p> <p>At <u>Prospect Hill</u>, no impacts due to lack of sensitive viewers and because there are already numerous microwave dishes mounted on the BPA communications structure</p> <p>Within <u>Marys Peak SBSIA</u>, low temporary impacts during removal of BPA communications site</p> <p>Moderate beneficial effect from removal of the existing BPA communications site and revegetation</p> <p>No impacts for viewers <u>in the Willamette Valley or in the Coast Range</u></p>	<p>Within <u>Marys Peak SBSIA</u> at <u>Marys Peak</u>, low impacts from temporary and infrequent maintenance activities and emergency repairs</p> <p>At <u>Prospect Hill</u>, no impacts from maintenance activities and emergency repairs</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
<p>Cultural Resources Section 3.8</p>	<p>At <u>Marys Peak</u>, where the BPA communications site is eligible for NRHP listing, replacement of the wood monopole with steel-lattice structure would have a low to moderate impact on an historic property</p> <p>Potential low to moderate impacts on traditional cultural properties with the implementation of applicable mitigation measures</p> <p>No impacts on prehistoric (archaeological) sites</p> <p>At <u>Albany Substation</u>, the addition of equipment would have no impact on historic sites, prehistoric (archaeological) sites, or traditional cultural properties</p>	<p>At <u>Marys Peak</u>, removal of the BPA communications site, which is eligible for NRHP listing, would be a moderate impact on an historic property</p> <p>If the USFS Marys Peak communications site is determined eligible for the NRHP, the addition the building could be a low to moderate impact depending on the effectiveness of the mitigation</p> <p>Same impacts as Alternative 2A on traditional cultural properties and prehistoric (archaeological) sites</p> <p>At <u>Albany Substation</u>, same impact as under Alternative 2A</p>	<p>At <u>West Point Spur</u>, if the CPI communications site is found eligible for NRHP listing, work at the site would be a low to moderate impact on a historic property depending on the effectiveness of mitigation</p> <p>Potential low to moderate impacts on traditional cultural properties</p> <p>No impacts on prehistoric (archaeological) sites</p> <p>At <u>Prospect Hill</u>, the addition of equipment would have no impacts on historic or prehistoric (archaeological) sites or traditional cultural properties</p> <p>At <u>Marys Peak</u>, removal of the BPA communications site, which is eligible for NRHP listing, moderate impact on an historic property</p> <p>Potential low to moderate impacts on traditional cultural properties with the implementation of applicable mitigation measures</p> <p>No impacts on prehistoric (archaeological) sites</p>	<p>At <u>Marys Peak</u>, maintenance activities and emergency repairs have the potential for low to moderate impacts on cultural resources, depending on the type of cultural resource affected, eligibility for the NRHP, and effectiveness of mitigation</p> <p>At <u>Prospect Hill</u>, maintenance activities and emergency repairs have the potential for low to moderate impacts on cultural resources, depending on the type of cultural resource affected, eligibility for the NRHP, and effectiveness of mitigation</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
Socioeconomics Section 3.9	<p>At <u>Marys Peak</u>, low temporary impacts on local population from influx of construction workers, no impacts on housing availability during construction, and no permanent impacts on population or overall demand for housing</p> <p>Temporary low, but beneficial effect on regional economy from workers spending money on goods and services at local businesses</p> <p>Moderate temporary economic impacts could result from temporary impacts on recreation use</p> <p>No impact on property values</p> <p>No permanent socioeconomic impacts</p> <p>At <u>Albany Substation</u>, temporary low impacts on property values of nearby residences during construction; no permanent impacts</p>	<p>At <u>Marys Peak</u>, same impacts as Alternative 2A</p> <p>At <u>Albany Substation</u>, same impacts as Alternative 2A</p>	<p>At <u>West Point Spur</u>, temporary low impacts on local population and housing from influx of construction workers</p> <p>Temporary beneficial effect on local economy from workers spending money on goods and services at local businesses</p> <p>Low temporary economic impact resulting from potential impacts of tree cutting on recreation use</p> <p>No impact on property values</p> <p>No permanent socioeconomic impacts.</p> <p>At <u>Prospect Hill</u>, no socioeconomic impacts due to small amount of work on site</p> <p>At <u>Marys Peak</u>, moderate temporary economic impacts resulting from impacts on recreation use</p>	<p>At <u>Marys Peak</u>, no impacts from temporary and infrequent maintenance activities and emergency repairs</p> <p>At <u>Prospect Hill</u>, no impacts from maintenance activities and emergency repairs</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
<p>Noise Section 3.10</p>	<p>At <u>Marys Peak</u>, moderate temporary noise impacts during construction</p> <p>Moderate permanent noise impacts from HVAC system operations</p> <p>At <u>Albany Substation</u>, low temporary noise impacts for a few days during construction</p> <p>No permanent noise impacts</p>	<p>At <u>Marys Peak</u>, same impacts as Alternative 2A</p> <p>At <u>Albany Substation</u>, same impacts as Alternative 2A</p>	<p>At <u>West Point Spur</u>, low temporary noise impacts during construction</p> <p>Low Permanent noise impacts from HVAC system operations</p> <p>At <u>Prospect Hill</u>, low temporary noise impacts during construction; no permanent noise impacts</p> <p>At <u>Marys Peak</u>, moderate temporary noise impacts during BPA communications site removal</p> <p>Slight reduction in permanent noise impacts due to removal of the engine generator HVAC system currently in BPA building, a low beneficial effect</p>	<p>At <u>Marys Peak</u>, low noise impacts from continuing operations and periodic maintenance activities and emergency repairs</p> <p>At <u>Prospect Hill</u>, no impacts from maintenance activities and emergency repairs</p>
<p>Air Quality and Greenhouse Gas Emissions Section 3.11</p>	<p>At <u>Marys Peak</u>, during construction: Low to moderate temporary, localized impacts on air quality from creation of dust and particulate matter</p> <p>Low temporary impacts to air quality from an increase in criteria pollutants from vehicle and equipment operation</p> <p>No permanent impacts on air quality</p> <p>Low permanent impacts on global concentrations of GHGs from vehicle and equipment operation and tree cutting</p> <p>At <u>Albany Substation</u>, no impacts on air quality and GHG concentrations</p>	<p>At <u>Marys Peak</u>, same impacts as Alternative 2A</p> <p>At <u>Albany Substation</u>, same impacts as Alternative 2A</p>	<p>At <u>West Point Spur</u>, during construction, low-to-moderate temporary, localized impacts on air quality from creation of dust and particulate matter and operation of vehicles and equipment. No permanent impacts</p> <p>At <u>Prospect Hill</u>, no impacts on air quality and GHG concentrations</p> <p>At <u>Marys Peak</u>, during removal of the BPA communications site, low to moderate temporary localized impacts on air quality from creation of dust and particulate matter</p> <p>Low temporary impacts to air quality from an increase in criteria pollutants from vehicle and equipment operation.</p> <p>No permanent impacts on air quality</p> <p>Low permanent impacts on global concentrations of GHGs from vehicle and equipment operation</p>	<p>At <u>Marys Peak</u>, low temporary impacts on air quality and low permanent impacts on GHG emissions from infrequent maintenance and emergency repair activities</p> <p>At <u>Prospect Hill</u>, low temporary impacts on air quality and low permanent impacts on GHG emissions from infrequent maintenance activities and emergency repairs</p>

Resource	Alternative 2A	Alternative 3C	Alternative 4	No Action Alternative
<p>Public Health and Safety Section 3.12</p>	<p>At <u>Marys Peak</u>, low temporary impacts during construction from increased general safety risks</p> <p>Moderate Low impacts from potential risk of theft, sabotage or vandalism</p> <p>Low impacts from slight increase in EMF levels outside fence and VHF emissions from added VHF antenna</p> <p>No impacts from microwave radiation due to restricted access</p> <p>At <u>Albany Substation</u>, low temporary impacts during construction from increased general safety risks</p> <p>Low risk of theft, sabotage or vandalism</p> <p>No impacts from VHF radiation exposure (no VHF antenna) because one is not present</p> <p>No impacts from EMF or microwave radiation due to restricted public access</p>	<p>At <u>Marys Peak</u>, same impacts as under Alternative 2A</p> <p>At <u>Albany Substation</u>, same impacts as Alternative 2A.</p>	<p>At <u>West Point Spur</u>, low temporary impacts during construction from increased general safety risks</p> <p>Low impacts from potential risk of theft, sabotage or vandalism</p> <p>Low impacts from increased VHF emissions from added VHF antenna</p> <p>No impact from EMF exposure or microwave radiation due to restricted public access</p> <p>At <u>Prospect Hill</u>, low impacts on general safety during construction from increased general safety risks</p> <p>Low risk of theft, sabotage or vandalism</p> <p>Low impacts from increased VHF emissions from added VHF antenna</p> <p>No impacts from EMF and microwave radiation due to restricted access</p> <p>At <u>Marys Peak</u>, low temporary impacts during BPA communications site removal from increased general safety risks</p>	<p>At <u>Marys Peak</u>, maintenance activities would continue. The aging wood monopole and outdated equipment could affect BPA communications particularly during storms; this could pose a risk to the safety of workers conducting emergency repairs in the field safety, a low to moderate impact on employee and public safety</p> <p>Existing EMF, microwave radiation, and VHF radiation emissions would continue, with low impacts.</p> <p>Moderate impacts from potential risk of theft, sabotage or vandalism</p> <p>At <u>Prospect Hill</u>, maintenance activities would continue, a low impact on employee safety</p> <p>No impacts to public safety and from exposure to EMF and microwave radiation due to lack of public access.</p> <p>Continued low impacts from existing VHF radiation emissions</p>

Chapter 3 Affected Environment, Environmental Consequences and Mitigation Measures

This chapter provides an analysis of the potential environmental impacts from implementation of Project action alternatives compared to the No Action Alternative. Section 3.1 discusses resources the Project would minimally or not impact.

For resources that could be impacted by the Project, the affected environment for each resource is described along with an analysis of potential impacts compared to the No Action Alternative and identified mitigation measures to avoid or reduce impacts. *Potential impacts are also considered in combination with current climate change projections to analyze how climate change could increase the long-term impacts of the Project on a given resource. See Section 3.11.2 of this EA for a discussion of the recent climate change assessment used for this analysis.*

Each resource section has the following primary subsections:

- Affected Environment
- Environmental Consequences – No Action Alternative
- Environmental Consequences - Action Alternatives
- Mitigation Measures
- Unavoidable Impacts Remaining After Mitigation

The Project area is the area in the immediate vicinity of Project activities. For each resource, a defined area of potential impacts was identified (study area). The study area can be the same or larger than the Project area. The study areas of potentially affected resources are identified by local landmarks, trails and access roads, or relative to the fence around each communications site or substation. For some resources, the study area includes locations where direct physical impacts could occur as a result of project activities and is the same as or very similar to the Project area. Because the Project could result in impacts on resources that are geographically removed from the Project area, the study area for some resources extends well beyond the Project area.

Direct, indirect, and cumulative impacts on resources are considered.² Direct impacts are those that would occur as a direct result of Project construction. Indirect impacts are those that are caused by the proposed project, but would occur later in time and/or farther away in distance. Cumulative impacts are those incremental impacts of the Project that result when considering past, ongoing, or reasonably foreseeable future actions. Cumulative impact analysis is discussed in Section 3.13 of this EA.

Impact levels are characterized as high, moderate, low, or no impact. High impacts are considered to be significant impacts, whereas moderate and low impacts are not. Beneficial effects are discussed where applicable. Table 2-6 2-7 compares and summarizes the environmental impacts, by resource, of each action alternative to the No Action Alternative. This table represents the level of impacts expected to result after implementation of the mitigation measures and BMPs listed in each resource section.

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

3.1 Resources on which the Project has No or Minimal Impacts

This section briefly discusses resources that are not analyzed in detail for this EA because implementation of any of the action alternatives would have no or minimal impacts on them compared to the No Action Alternative. *Because the Project would have no impacts or minimal impacts on these resources, climate change would not have the potential to further increase the Project's impacts on these resources. Therefore, the impacts of climate change on the following resources are not analyzed in detail in this EA.*

Resources that would be affected by implementation of any of the action alternatives are discussed in more detail in Sections 3.3 through 3.12.

3.1.1 Wetlands and Water Resources

All Project components are located in uplands with no waterways or wetlands within 200 feet of work areas. The communications sites at Marys Peak, West Point Spur, and Prospect Hill are located on hills or mountain tops. There would be no direct or indirect impacts to water features or water quality from erosion and sedimentation because water features are not located near work areas. The Albany Substation is located near the Calapooia River, but all Project work would occur within the substation fence and there is no potential for erosion or sedimentation because there would be no ground disturbance.

3.1.2 Fish

There would be no direct or indirect impacts to waterways, riparian areas, and water quality; therefore, fish and fish habitat would not be affected by Project activities.

3.1.3 Transportation

A project's effects on transportation are determined by the potential impacts on residents and the public using roadways in the project area. Implementation of any one of the action alternatives would only involve work at two sites. At one component, work would occur over a few days; at the other, over a period of up to six months. Project work would minimally impact traffic operation in the Project area because, although ingress and egress of a small number of construction vehicles from public roads would occur briefly, traffic operations on study area roads is generally good due to low traffic volumes. The minimal amount of materials and equipment that would be brought to the site is not expected to result in any damage to public roads. Alternative 4 could result in temporary traffic delays along Marys Peak Road from tree cutting near the road, but there would be minimal impact on traffic operations. Therefore, the impacts on traffic operation and inconvenience to residents or the public from construction would be minimal due to the short duration of any traffic delays and the low volume of construction traffic.

3.1.4 Public Services

The Project would have minimal impacts on transportation and, therefore, would have no effect on public services such as police services, fire suppression services, and school transportation. A minimal amount of water could be used for dust suppression, if needed, but this would not affect water supplies. The normal operations of the BPA and USFS Marys Peak communications site would continue during construction and the transition to new equipment would not affect power supplies or emergency services.

3.1.5 Environmental Justice Populations

Environmental justice refers to the fair treatment of people of all races and incomes with respect to actions affecting the environment; fair treatment implies that there is equity of the distribution of benefits and risks associated with a proposed project and that one group does not suffer disproportionate adverse effects. All projects involving a federal action must comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of **minority** and **low-income populations** to the greatest extent practicable and permitted by law. Because no minority or low-income populations are identified near Project components, they would not be affected by this Project, resulting in no impacts to environmental justice populations.

3.2 Construction Disturbance Areas

The total area that could be temporarily or permanently disturbed under each alternative was calculated based on the estimated disturbance areas for the various activities described in Chapter 2 of this EA. When several activities would occur in the same area, such as staging in an area and later construction work in the same area, it was only included once in the calculation. Construction disturbance is not included for Albany Substation (Alternative 2A and Alternative 3C) or Prospect Hill (Alternative 4) because all impacts occur within the existing graveled yard.

Table 3-1. Construction Disturbance Areas by Action Alternative

Action Alternative and Source of Impact	Temporary Impacts	Permanent Impacts
ALTERNATIVE 2A (Marys Peak only)		
Staging, site prep, work areas	6,100 square feet	none
Communications structure	none	529 square feet
Access road improvement: 8 water bars (5-USFS; 3-BLM)	4,000 square feet	800 square feet
Total Construction Impacts	10,100 square feet = 0.23 acre (0.2 acre USFS; 0.03 acre BLM)	1,329 square feet = 0.03 acre (0.02 acre USFS; 0.01 acre BLM)
Tree Cutting (BLM)	none	0.53 acre
ALTERNATIVE 3C (Marys Peak only)		
Staging, Site Prep, Work Areas	11,325 square feet	none
Communications structure	none	625 square feet
Retaining wall	none	262 square feet
Building Addition	none	378 square feet
Access road improvement: 8 water bars (5-USFS; 3-BLM)	4,000 square feet	800 square feet
Total Construction Impacts	15,325 square feet = 0.35 acre (0.32 acre USFS; 0.03 acre BLM)	2,065 square feet = 0.05 acre (0.04 acre USFS; 0.01 acre BLM)
Tree Cutting (BLM)	none	0.53 acre
ALTERNATIVE 4 (West Point Spur only)		
Staging, site prep, work areas	3,920 square feet	none
Access road improvement: 5 water bars (3-USFS; 2-City of Corvallis)	2,500 square feet	500 square feet
Total Construction Impacts	6,420 square feet = 0.15 acre (0.03 acre USFS; 0.1 acre City of Corvallis)	500 square feet = 0.012 acre (0.01 acre USFS; 0.01 acre City of Corvallis)
Tree Cutting (City of Corvallis)	none	0.76 acre

3.3 Land Use and Recreation

3.3.1 Study Area

The land use and recreation study area includes areas where public and private property use, recreational use, and other land uses could be impacted by construction and operation of the communications sites. The study area for land use and recreation includes the Marys Peak communications site, the West Point Spur CPI communications site, and the BPA Albany Substation and all areas within 1,000 feet of the fences around each site. (There would be no impacts at Prospect Hill; see Alternative 4 discussion under Section 3.3.4.) The study area at Marys Peak and West Point Spur also includes areas within 1,000 feet of all work areas, including staging areas that would be outside the communications site fences, areas where trees would be cut to create an unobstructed beam path, and unpaved access roads that would be improved. The Marys Peak Campground is located over 2,000 feet from the nearest construction areas and would be minimally affected by Project activities. *Information on the analysis and potential impacts to the viewer experience can be found in the Visual Quality section of this EA (Section 3.7).*

3.3.2 Affected Environment

Additional information on applicable plans and policies affecting land use at the Project locations can be found in Section 4.3, *Federal Land Managing Agency Requirements and Policy Consistency*, and Section 4.6, *State, Area-wide, and Local Plan and Program Consistency*, of this EA.

Marys Peak

The Marys Peak study area includes undeveloped forest and open meadow land, recreational facilities, and communications sites. Most of the study area is on USFS lands and the remaining portion is on BLM lands. USFS lands in the study area are designated as a Scenic Botanical Special Interest Area (SBSIA) “in recognition of the unique scenic, botanical and recreational values of Marys Peak” (USFS 1989). USFS manages the SBSIA with the goal of protecting the unusual and outstanding characteristics of the area while fostering public use, understanding, and enjoyment of these characteristics (USFS 1989). A Memorandum of Understanding between USFS and BLM ensures cooperation in managing BLM lands in a manner compatible with the SBSIA Management Plan (USFS 1989). (See Section 3.6, *Cultural Resources*, for information on historical development of the Marys Peak site.)

The Marys Peak study area includes paved and unpaved roads that provide vehicle and pedestrian access for recreation and other activities, as well as for routine and emergency maintenance of the existing communications facilities at the summit. Marys Peak Road is a paved road from Highway 34 to the public parking lot below the summit of Marys Peak. In April 2018, Highway 34 from Tangent to Waldport, as well as Marys Peak Road, were designated as a state *scenic byway* and named the Marys Peak to Pacific Scenic Byway. Marys Peak Road ends at the Marys Peak Day Use Area, which includes a paved parking lot, restroom facilities, picnic tables, and scenic viewing platforms. In the Day Use Area and along the Meadowedge Trail, interpretive signage is provided.

Marys Peak is a popular destination for recreation, research and education, and personal renewal. The network of trails provides opportunities for non-motorized recreation, including hiking, mountain biking, cross country skiing, and snowshoeing, as well as opportunities to view forests and native plant communities, wildlife, and scenery. The trails on Marys Peak, which range from “moderate easy” to “moderate difficult,” have a broad appeal among both easy walkers and rigorous hikers.

There are approximately 12 miles of non-motorized trails within or just outside of the Marys Peak SBSIA that are open to hiking year-round. Trail options include the East Ridge Trail, North Ridge Trail, Tie Trail, Meadowedge Trail, and Summit Loop Trail. Visitors can reach the Marys Peak summit via the Summit

Loop Trail, but access to the communications site is restricted by a chain-link fence. Mountain biking is permitted on the East Ridge, North Ridge, and Tie Trails exclusively from May 15 through October 15. The Meadowedge and Summit Loop Trails are closed to bikes year-round.

In addition to trail users, the summit is visited by a variety of other recreational users, including picnickers, photographers, stargazers, birders, botanists, and paragliding and hang-gliding enthusiasts. Special use permits are issued for additional activities, including research projects, noble fir cone collection, and recreation events. Three such recreation events occur annually on weekend days in June: the Marys Peak Trail Run hosted by Oregon Trail Runs and two bike races. In addition, the Marys Peak Alliance hosts two annual school field trips that take place over three weekdays in May, and Muddy Creek Charter School has a similar event on a weekday in September. Hiking groups or other organizations that do not charge a participation fee are not required to obtain a special use permit. For example, the Marys Peak Group from the Oregon Chapter of the Sierra Club hosts periodic group hikes. Similarly, the Alliance for Recreation and Natural Areas organizes annual weed pulls to remove conifer saplings and non-native species from the summit prairie and surrounding meadows. The SNF also occasionally receives requests to hold one-time events, such as weddings, in the SBSIA.

The Marys Peak SBSIA is one of the few areas within the SNF where dispersed camping and recreational firearm use are expressly prohibited. Under a Special Forest Order, camping outside of the designated Marys Peak Campground and sport shooting are both prohibited. Although regulations and infrastructure have been put in place to protect sensitive scenic and botanical values and to minimize impacts on the fragile plant communities in the meadow area, activities on the summit such as hiking off designated trails, incidental unauthorized off road vehicles, and vandalism constitute major disturbances to the area.

West Point Spur

The West Point Spur study area includes undeveloped forest and open meadow land. Most of the study area is on City of Corvallis lands with some USFS lands. USFS lands in the study are within the Marys Peak SBSIA (USFS 1989). As stated in the SBSIA Management Plan, a Memorandum of Agreement between the City of Corvallis and USFS outlines procedures for managing City lands in a manner compatible with SBSIA guidelines (USFS 1989).

In addition to the CPI communications site, the West Point Spur study area includes three other communications sites that the City of Corvallis leases to other entities. Marys Peak Road and an unpaved National Forest road (NF-112) provide vehicle access for routine and emergency maintenance of the West Point Spur communications facilities.

Public recreational opportunities are limited in the West Point Spur study area. There are no formally established hiking trails or other recreational amenities or infrastructure that would encourage public use of the study area, and the access road is gated to restrict vehicle access. Public use of the area is not explicitly forbidden, except within the fenced communications sites. However, visitors must walk in past a locked gate, which likely limits the number of people who access West Point Spur. Portions of West Point Spur offer scenic vistas and other recreational opportunities, and bird watchers are known to visit the site during bird migration periods. In addition, Marys Peak Road, which is part of the larger Marys Peak to Pacific Scenic Byway, could be used by pedestrians and cyclists on their way to Marys Peak.

BPA Albany Substation

The BPA Albany Substation study area includes urban residential, commercial, and light industrial (BPA and Pacific Power substations) properties, a tree-covered neighborhood park, and a forested riparian area associated with a stretch of the Calapooia River. A well-developed and heavily-trafficked network of paved roads traverses the study area. The majority of the study area consists of privately-owned single- and multi-family residential properties and commercial properties, which can be found in the

residential areas of the Chase Orchards subdivision and along SW Queen Avenue, SW 17th Avenue, SW 16th Avenue, and SW Summerfield Court. About 18 acres of the study area is owned by BPA, including an electrical substation surrounded by low-growing shrubs and herbaceous vegetation. Pacific Power owns a smaller substation in the study area. The City of Albany owns and maintains Hazelwood Park, an approximately 3-acre neighborhood park. As noted, a stretch of the Calapooia River (about 1,200 linear feet) flows through the study area.

Public recreational opportunities in the BPA study area include the Calapooia River and Hazelwood Park. Anglers, kayakers, and swimmers could use the stretch of the Calapooia River in the study area. Hazelwood Park is characterized by a stand of mature trees with a walking path that meanders through it, a regularly-mowed grassy area, picnic tables, a short gravel access road, and small parking area. Although the park is only 3 acres and has minimal facilities, it is frequented by dog owners and others who appreciate the habitat provided by the grove of trees.

3.3.3 Environmental Consequences –No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications site would not be rebuilt and impacts related to Project construction would not occur. Operations and maintenance activities would continue at the BPA Marys Peak and the BPA Prospect Hill communications sites and would be similar to existing practices. Maintenance activities at the BPA Marys Peak communications site would result in **low** land use and recreation impacts because they occur infrequently. If it were necessary to perform emergency repairs, it would likely not be possible to plan or time these activities to minimize land use and recreation impacts. *Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect that maintenance activities and emergency repairs could be required more frequently in the future.*

Because potential impacts resulting from emergency repairs would be localized and likely to occur during winter months, land use and recreation impacts at Marys Peak would be **low**. At the BPA Prospect Hill communications site, there would be **no** impacts on land use and recreation from continuing maintenance activities and emergency repairs.

3.3.4 Environmental Consequences – Action Alternatives

This section describes impacts that may occur if one of the action alternatives is selected.

Impacts Common to All Action Alternatives

Temporary impacts to land use and recreation would be caused by construction activities. Access restrictions in construction areas would prevent users from experiencing some portions of the study area during some time periods. Under each of the action alternatives, access restrictions would be temporary, but the duration and total area of restrictions would vary depending on the proposed construction activities. There would be no new permanent access restrictions under any of the action alternatives beyond the areas that are currently restricted by chain-link fences around each communications site.

BPA would need to acquire beam path easements either from Marys Peak to the BPA Albany Substation (Alternative 2A and Alternative 3C) or from West Point Spur to Prospect Hill (Alternative 4). This agreement would affect land use in that it would require cutting some trees and, in the future, could require cutting more trees if they grew into the beam path and obstructed a clear line of sight. The impact on land use by tree cutting is discussed under each alternative below.

Construction of any action alternative would create temporary noise during construction and permanent noise due to communications site operations, resulting in potential impacts on land use and recreation. Noise impacts are discussed in Section 3.10 of this EA. *Climate change would not further increase the Project's impact on land use and recreation in the future because action alternatives would not have permanent impacts on land use and recreation.*

Impacts Specific to Action Alternatives

Alternative 2A

Under Alternative 2A, construction activities within fenced communications sites, cutting trees, improvements to the access road, and staging materials and equipment would result in temporary and permanent impacts to land use and recreation.

Marys Peak

During construction, access to certain areas of Marys Peak would be temporarily restricted, as needed, to ensure public safety, prevent vandalism of materials and equipment, and allow revegetation of sensitive restored areas following construction. Although most construction activities would occur within the fenced communications site, some Project work would be conducted outside of the fenced area where the public would otherwise have access. Temporary access restrictions would occur from staging and during access road improvements, cutting trees, and construction of the steel-lattice communication structure.

Equipment, materials, and vehicles would be staged within the paved parking lot of the Marys Peak Day Use Area. Up to 1,800 square feet (0.04 acre) of the 36,380 square feet (0.84 acre) parking lot would be temporarily blocked for up to six months and not available for public parking. This could reduce the paved parking lot to 84 percent of its current capacity for standard-sized vehicles.

Installation of water bars, improvements to the road surface (grading and adding crushed rock), and tree cutting would temporarily block use of 3,450 feet (0.65 mile) of the access road from the Marys Peak Day Use Area to the summit. The trees that would be cut are grouped near the access road. Therefore, to protect public safety, the access road would be temporarily blocked while the trees are cut. Water bar installation, road improvements, and tree cutting would block the access road for up to one month.

There would be intermittent access restrictions at the summit during construction. Access would also be temporarily restricted for up to several hours when transporting materials and equipment from the staging area in the Day Use Area parking lot to the communications site. During construction of the steel-lattice structure, public use of the summit could be restricted. At other times, the public should be able to recreate at the summit while construction occurs. Although these access restrictions would be temporary, they would prevent users from experiencing popular areas of the SBSIA and could also temporarily prevent USFS and other entities from accessing their communications facilities for routine or emergency maintenance.

Other than the access road to the summit, no other trails or roads, including Marys Peak Road, would likely be blocked as a result of project-related activities. Alternative routes to hike to the summit (e.g., the Meadowedge Trail) would likely remain open during construction, except on occasions when access is restricted at the summit during construction of the steel-lattice structure, as described above. Cutting trees would not change land use at Marys Peak in that recreational activities would continue following completion of the project. The temporary impact of access restrictions on land use and recreation would be **moderate**, but there would be **no** permanent impacts from access restrictions to any portion of the study area.

BPA Albany Substation

Project activities would not be expected to temporarily block access to any portions of the BPA Albany Substation study area outside of the currently restricted substation yard, and there would be no permanent change in the area of the substation. Therefore, Project activities at the BPA Albany Substation would result in **no** temporary or permanent impacts on land use and recreation.

Alternative 3C

Marys Peak

Under Alternative 3C, impacts on land use and recreation at Marys Peak would be similar to impacts under Alternative 2A. Project activities would temporarily block access to the same areas of Marys Peak under Alternative 3C as under Alternative 2A. Therefore, under Alternative 3C, the temporary impact of access restrictions on land use and recreation at the Marys Peak communications site would be **moderate**, and there would be **no** permanent impacts during operations.

Under Alternative 3C, ~~USFS would remove~~ approximately 229 feet of fencing from around the BPA communications site **would be removed** after the site is removed and the vegetation is restored. **The USFS would need to approve the removal of the 229 linear feet of chain link fence segments prior to BPA funding the fence removal.** A new ~~101~~**100**-foot length of fence would be installed approximately 60 feet closer to the USFS communications site than the current fence's location, **prior to construction site revegetation and removal of the 229 feet of existing fence.** Therefore, the total area of the Marys Peak summit that would **no longer be a designated communications site** ~~be accessible to visitors~~ would increase **by about 7,700 square feet**, resulting in a **low** beneficial effect on land use and recreation. ~~due to the removal of the BPA Marys Peak communications site.~~

BPA Albany Substation

At the BPA Albany Substation, land use and recreation impacts would be the same under Alternative 3C as they would be under Alternative 2A because the same work would be done. The result would be **no** temporary or permanent impacts on land use and recreation.

Alternative 4

West Point Spur

Under Alternative 4, Project activities within the fenced CPI communications site at West Point Spur, cutting trees, improvements to the access road, and staging materials and equipment immediately outside the fence would result in temporary and permanent impacts to land use and recreation.

During construction, vehicle traffic along a portion of Marys Peak Road could be intermittently restricted for up to three days as crews use chainsaws and other equipment to cut up to 20 mixed conifers. Also, installation of water bars along the access road (NF-112) to the West Point Spur communications site would block up to 1,990 feet (0.37 mile) of the road for up to two weeks. NF-112 would also be intermittently blocked to transport materials and equipment to the site during construction.

Although public vehicle access to West Point Spur is restricted by a gate across the access road near Marys Peak Road, these activities would prevent CPI and other entities located at West Point Spur from accessing their communications facilities for routine or emergency maintenance. However, access restrictions would be temporary and there would be few recreational or other users within the study area. There would be no permanent change in the area of the communications site. Therefore, access restrictions from road improvements and tree cutting at West Point Spur would result in **low** temporary and **no** permanent impacts on land use and recreation.

Prospect Hill

The BPA Prospect Hill communications site restricts vehicle access with a locked gate, and there are no publicly-accessible recreational opportunities located within 1,000 feet of the site. Although there is potential for recreation on adjacent privately-owned forested land, construction activities would not

restrict individuals from accessing these lands. The footprint of the existing communications site would not change, resulting in **no** permanent impact on land use and recreation under Alternative 4.

The potential impacts of temporary construction noise and permanent operational noise on land use and recreation at West Point Spur, Marys Peak and Prospect Hill under Alternative 4 are discussed in Section 3.10 of this EA.

Marys Peak

The unpaved access road to Marys Peak summit would be used to transport materials and equipment during construction and this could result in temporary access restrictions. The same reduction in the total area of the fenced communications site at the summit would occur under Alternative 4 as under Alternative 3C, resulting in a **low** beneficial effect on land use and recreation. Therefore, temporary impacts on land use and recreation due to access restrictions would be **moderate**, with **no** permanent impacts.

3.3.5 Mitigation Measures – Action Alternatives

If one of the action alternatives is implemented, BPA would implement construction BMPs and mitigation measures to avoid or minimize noise and access restrictions impacts from the Project. Other mitigation measures relevant to land use and recreation are in Section 3.10, Noise.

- Install the HVAC unit on the south-facing wall of the Marys Peak communications building addition (Alternative 3C) to minimize noise and visual impacts to visitors near the picnic table area located north of the communications site.
- Conduct a preconstruction public meeting and invite landowners, land managers, Benton County law enforcement, and communications site users to meet with construction contractors and BPA staff responsible for Project implementation to receive information and discuss concerns and receive contact information for construction contractor liaisons and BPA staff.
- Explain land use and recreation-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Coordinate with the USFS Public Affairs Officer to develop a communications plan to notify recreational and other user groups about construction activities, including potential closures of roads, trails, and other areas via the USFS website, onsite signage, and other methods of public outreach.
- Provide information to visitors at Marys Peak on how to avoid construction activities as much as possible, including posting Project information and updates on the SNF website and posting and maintaining signs at trailheads and other obvious locations, such as existing signboards at the public parking lot and the campground, so that visitors can have a pleasant visit and experience good views.
- Coordinate the scheduling of construction traffic and access restrictions with CPI, USFS, and other communications site operators so that they can safely conduct routine and emergency maintenance.
- Require the construction contractor to employ a lands liaison, who would be available to provide information, answer questions, and address concerns during Project construction.
- Encourage use of carpooling and shuttle vans among construction workers to minimize construction-related traffic and associated emissions.
- Schedule all construction work during daylight hours (7 a.m. to 7 p.m.) ~~and limit work to weekdays, if possible.~~

- Avoid **all work between the parking lot and the Marys Peak summit and at the Marys Peak summit communications site** conducting access road improvements **during federal holidays and** on weekends or holidays to minimize impacts to visitors, if possible.
- Coordinate with USFS to accommodate special-use permit activities by rescheduling construction activities that would interfere with the permitted activities, if possible.
- Keep construction equipment clear of recreational resources, including parking and trails, to the greatest extent possible.
- Close the access road to hiking during access road improvements and tree cutting activities, and install signage at the gate, the summit, and other trailheads, providing directions and maps for alternative hiking routes.
- Instruct construction contractors to promptly close all gates after entry and to post and maintain signs around construction areas warning of construction activity, where needed.
- Employ traffic control flaggers and post and maintain signs along roads warning of construction activity along Marys Peak Road during tree cutting at West Point Spur, where needed.
- Limit vehicle speeds on unpaved roads and surfaces to 10 miles per hour or less to reduce dust and for public safety.
- Control dust during construction with water or other appropriate control methods, without the use of chemical additives, as needed.
- Remove the Marys Peak BPA communications site (Alternative 3C and Alternative 4) as late as possible in the fall of the year to minimize disturbance to visitors.
- Avoid removing the Marys Peak BPA communications site (Alternative 3C and Alternative 4) during **federal holidays and** weekends and holidays to minimize disturbance during periods of high visitation.

3.3.6 Unavoidable Impacts Remaining After Mitigation

Mitigation measures and construction BMPs would only minimize impacts to land use and recreation to the extent that they provide visitors the opportunity to avoid them. As a result, impacts to land use and recreation would still occur during construction under each of the Project alternatives, as described above in Section 3.3.4.

3.4 Geology and Soils

3.4.1 Study Area

The geology and soils study area includes areas where geology and soils could be directly impacted by Project activities and indirectly impacted by resulting erosion and sedimentation. Study areas for geology and soils were defined at the Marys Peak communications site, the West Point Spur CPI communications site and the BPA Prospect Hill communications site. Direct impacts would occur in construction work areas from activities that disturb, compact, or remove geology and soils, including areas where trees would be cut to create an unobstructed microwave beam path. Indirect impacts would occur in areas adjacent to construction areas.

The Marys Peak communications site geology and soils study area is about 7.7 acres and includes the following areas:

- Fenced summit communications site and a 50-foot area outside the fence
- Unpaved access road that leads from the paved parking lot to the summit communications site (50-foot wide area centered on the road)
- An area where a stand of noble fir trees on BLM lands would be cut

The West Point Spur CPI communications site geology and soils study area is about 4.2 acres in size and includes the following areas:

- CPI fenced communications site and a 50-foot area outside the fence
- NF-112, leading from Marys Peak Road to the CPI site (50-foot wide area centered on the road)
- An area of mixed forest located northeast of the CPI communications sites where some trees would be cut
- Two material/equipment staging and vehicle driving/parking areas

The BPA Prospect Hill communications site geology and soils study area is about 0.2 acre in size. Because no access road improvements are proposed and work would only occur within the fence, it only includes the area within the fenced communications site and a 20-foot area outside the fence.

There was no study area at the BPA Albany Substation because the substation is located on fill material; native geology and soils at the site would not be impacted by this Project.

3.4.2 Affected Environment³

Geology

Geology includes surface and subsurface rock features or bedrock. Marys Peak and West Point Spur are situated on the eastern flank of the Coast Range, a sub-province extending along Oregon's coast from the Columbia River in the north to the Middle Fork Coquille River in the south, within the broader Pacific Border physiographic province (Baldwin 1981). The Marys Peak and West Point Spur components are located within the Early Western Cascade Volcanics **terrane**, an area with distinct rock formations and geologic history. In some areas of Marys Peak and West Point Spur, erosional forces have removed a large portion of the overlying **silty, sandy gravel** sediment resulting in **exposed basalt** rock outcrops and coarse gravel in the open meadows. **The exposed rock outcrops consist of hard, coarse-grained, and**

³ Unless otherwise noted, the information presented in this section is based on the Natural Resources Conservation Service *Web Soil Survey* (<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>) and a series of interactive maps produced by the Oregon Department of Geology and Mineral Industries (<https://www.oregongeology.org/gis/>).

erosion-resistant pegmatite granite gabbro intruded into weaker, fine-grained, and fractured volcanic breccia dikes. The intrusive gabbro degraded into a granophyric diorite. This granophyric diorite is the coarse parent material that makes up the soils of the meadow and rock garden (Lawrence et al. 1980).

Marys Peak reaches the highest elevation of any mountain in the Oregon Coast Range, at approximately 4,100 feet. The ground is relatively flat on the north side, with gentle to moderate slopes on the east, south, and west sides. West Point Spur is an east-west trending ridge with an approximate elevation of 3,600 feet. The ridge is relatively flat, with gentle-to-moderate slopes along the east-west axis and steeper inclines to the north and south.

Prospect Hill Radio Station is located in the Willamette Valley, on the top of a large rounded hill. Prospect Hill is located within the Columbia River Basalt Group terrane, which is primarily composed of basalt rock formed during a period of extensive lava flows from fissures near the Oregon-Idaho-Washington border about 17 to 12 million years ago. Prospect Hill has a relatively flat summit at an elevation of approximately 1,120 feet. The landscape has moderate to steep slopes to the west and north of the site, with more gentle slopes to the south and east.

The geology in the study area has been disturbed in the past by the construction of existing communications sites, historic and current land uses, and ongoing erosional processes. Similarly, access road development on Marys Peak and West Point Spur involved cutting into slopes. These historical cutting and grading activities have exposed basalt intrusions to weathering and fracturing.

The Oregon Department of Geology and Mineral Industries indicate that the study areas around Marys Peak, West Point Spur, and Prospect Hill have the potential for landslides and earthquakes. Because the type of activities proposed by this Project would not affect the potential for a landslide or earthquake, the risk is not discussed further in this section.

Soils

Soils are composed of unconsolidated material at the earth's surface that may be dug or plowed and in which plants grow. The three primary soil types in the Marys Peak and West Point Spur study areas are the Mulkey Series, the Valsetz-Yellowstone Complex, and the Sevenscedars-Newanna-Woodspoint Complex. Meadows located on the summits and slopes of Marys Peak and West Point Spur are primarily underlain by the Mulkey Series. The Mulkey Series is characterized by ~~shallow to~~ moderately deep *(depth to bedrock ranges from 20 to 40 inches)* and well-drained soils that formed under grasslands in *loamy residuum* and *colluvium* (rocks disintegrating in place or sliding downslope) derived from basalt and other coarse-grained intrusive igneous and volcanic rock types. As a result, the soils are relatively rich in organic matter (up to 25 percent) but also contain gravels, cobbles, and *boulders stones* (up to 35 percent) and 10 to 20 percent clay. *This very friable peaty, organic silt and rocky topsoil is underlain by moderately fractured pegmatite granite gabbro and highly fractured and weathered volcanic breccia dikes. The soils are highly erodible, leading to areas of very thin, rocky soil and exposed diabase/gabbro outcrops (e.g. the rock garden).*

The Valsetz-Yellowstone Complex and the Sevenscedars-Newanna-Woodspoint Complex are primarily found under forested slopes surrounding the meadows. ~~Both of these soil types~~ *These complexes* formed in wooded areas in loamy residuum and colluvium weathered from basalt and other coarse-grained intrusive igneous and volcanic rock types. Undisturbed areas typically have decomposing twigs, bark, leaves, and needles on the surface of the soils. *Depending on slope and exposure,* these well-drained to somewhat excessively drained soils range in depth from shallow to very deep *(depth to bedrock ranges from 10 to over 60 inches)*. Gravelly loam and ~~stony~~ *cobbly* loam are the most abundant soil types and are characterized by 10 to 30 percent clay and 35 to 80 percent rock fragments. Silt loam, the least abundant soil type, is 10 to 25 percent clay and less than 35 percent rock fragments.

Prospect Hill is underlain by *the* Nekia *series stony silty clay loam*, which is moderately deep (*depth to bedrock ranges from 20 to 40 inches*), well-drained soil that formed in residuum and colluvium weathered from basalt. Nekia soil is found on well-rounded foothills with slopes of 2 to 12 percent. The texture is silty clay loam or silt loam with ~~15 to 40~~ *40 to 50* percent clay, ~~0 to 15~~ percent stones, ~~0 to 3~~ percent cobbles, and 0 to ~~10~~ *35* percent gravel *rock fragments*.

Many of the soils in the study area have already been disturbed by prior construction of existing communications sites, access road improvements, other historic and current land uses, and ongoing natural erosional processes. Soils within existing communications sites and access roadbeds have been graded, compacted, and overlain with gravel and fill material, making them less productive and vulnerable to erosion. *BPA geotechnical surveys conducted in 2016 indicate that the north, south, and east portions of the BPA Marys Peak communications site are covered in aggregate fill material that is a mix of weathered rock and surface soils between 4 and 7 feet deep. This fill material can generally be classified as silty, sandy gravel and cobbles, with some boulders, and it seems to be a mixture of native soils and excavated material borrowed from nearby road cuts during early site development.* In tree-cutting areas at Marys Peak and West Point Spur, the soils are relatively undisturbed.

3.4.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications facility would not be rebuilt and impacts related to Project construction would not occur. Operations and maintenance activities would continue at the BPA Marys Peak and the BPA Prospect Hill communications sites and would be similar to existing practices. Maintenance activities at the BPA Marys Peak communications site would result in **no** impacts on geology and **low** impacts on soils from compaction or disturbance. If it were necessary to perform emergency repairs, it would likely not be possible to plan or time these activities to minimize impacts on soils. *Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect an increase in maintenance activities and emergency repairs, which could result in more erosion of soils in the future.*

Emergency repairs at Marys Peak would result in **no** impacts on geology, but potential **low** impacts on soils. At the BPA Prospect Hill communications site, there would be **no** impacts on geology and soils from maintenance activities and emergency repairs.

3.4.4 Environmental Consequences – Action Alternatives

Impacts Common to All Action Alternatives

Construction of any of the action alternatives would cause direct and indirect impacts on geology and soils, which could be temporary or permanent. Direct impacts are those that damage, compact, or remove geology and soils. These activities include improving existing access roads, staging, use of heavy equipment and vehicles, site preparation, steel-lattice structure construction, building construction, and any other digging or trenching. Direct impacts on geology and soils would be localized to construction work areas.

Indirect impacts on geology and soils would occur where Project activities, such as the removal of vegetative cover, result in increased erosion over time. Indirect impacts could extend outside of construction work areas.

Impacts on geology and soils would be temporary or permanent. Temporary impacts would result from staging, use of heavy equipment and vehicles, removing or renovating existing structures, and cutting trees and other vegetation. Permanent impacts on geology and loss of soil productivity would occur

where the ground surface would be covered with impervious surfacing or permanently compacted, such as under a new steel-lattice structure or new building footprint.

Following construction, it could take several years for soils to fully stabilize. Erosion potential for disturbed soils would be greatest during and immediately after ground disturbance; soils would stabilize as they settle and as vegetation becomes reestablished.

Although geology and soils within existing roadbeds were previously, permanently impacted during the construction and maintenance of access roads, additional temporary and permanent impacts would result from the installation of water bars in the access roads. Installation of the drainage “apron” at the edge of the water bar would require the clearing of existing vegetation, grading and compacting soils, and installing a 10-foot-by-10-foot permanent and more sparsely vegetated rock-lined drainage apron on the downhill slope. The apron would be constructed with enough rock to slow runoff from the road, but would leave enough space to allow vegetation to grow through the apron itself, eventually obscuring the rock. Each water bar installation would permanently disturb about 100 square feet (rocked area that would be revegetated) and temporarily disturb up to 500 square feet at the sides of the rock apron. Clearing and grading in some areas would strip or crush vegetation and damage, remove, or bury the upper, most biologically active portion of the topsoil. Loss of vegetative cover would disrupt biological functions, including nutrient retention and recycling, and thus reduce soil productivity.

Excavation could remove basalt intrusions and expose the bedrock to weathering and fracturing, resulting in alteration of the underlying geology. Removing soils, adding crushed rock surfacing, or altering the underlying geology would change the substrate. Exposing underlying geology to weathering and fracturing and importing rock surfacing would in turn alter the vegetative communities that can survive in these areas, as discussed in Section 3.5, Vegetation.

The use of heavy equipment and trucks would degrade soil structure through soil compaction. Pore spaces within soils absorb and retain stormwater and contribute to gas exchange, which is important for respiration and other metabolic functions of soil organisms. The weight of heavy machinery alters soil structure by compacting and reducing open pore spaces within soils. Compacted soils have a reduced capacity to absorb and store water and to support soil organismal and vegetative communities, resulting in increased stormwater runoff and areas with patchy or no vegetation.

Indirect impacts on soils could occur as a result of vegetation removal, which could lead to increased erosion over time. Cutting trees for the microwave beam path could result in indirect impacts on soils if these activities lead to soil erosion. Indirect impacts from Project construction could include minor **sheet erosion** and the creation of some small channels. If soils were left bare or were slow to revegetate, minor gullying and other erosion could occur. The risk of erosion would be highest on steep slopes and during heavy rainfall.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events (Dalton and Fleishman 2021), which would lead to increased stormwater runoff and erosion of exposed or unstable soils. Erosion potential for disturbed soils would be greatest during and immediately after construction ground disturbance. The areas that would be temporarily impacted by Project construction would be revegetated and would gradually improve in soil structure over time. BPA would implement a Project Revegetation Plan to ensure native plant communities become established in areas disturbed by Project construction, with post-construction weed-monitoring and treatment. Although it could take up to five years for soils to fully stabilize as they settle and as vegetation becomes reestablished, climate change would not substantially alter the soils and vegetation within that timeframe.

Areas where geology and soils would be permanently impacted, such as where soils would be covered with impervious surfacing, would not be exposed or vulnerable to increased stormwater runoff and

erosion. Access road work, especially the installation of water bars, would help direct stormwater runoff and would reduce erosion and sedimentation from road beds, which would increase resiliency to increased precipitation due to climate change. Therefore, climate change would not have the potential to further increase the Project's impact on geology and soils in the future.

Because the scope of proposed construction work varies for each action alternative, each alternative would have a different impact on geology and soils. Discussion of the potential impacts specific to each alternative are presented below. Estimates of disturbance areas for each action alternative are summarized in Table 3.1 earlier in this chapter.

Impacts Specific to Action Alternatives

Alternative 2A

Marys Peak

Improvements to BPA facilities within the fence at Marys Peak under Alternative 2A would result in direct impacts on geology and soils. Staging materials and equipment within the fence, construction of a new steel-lattice structure, trenching, directional boring, and use of heavy vehicles and equipment would all directly damage, compact, or remove geology and soils.

The construction of a new 40-foot tall steel-lattice structure within the fenced area would result in temporary and permanent impacts on geology and soils due to excavation for the structure's footings. After excavating soils and bedrock to the required depth and embedding the foundation in the underlying bedrock, the hole would be backfilled with suitable material that was excavated in creating the hole or with imported fill material or rock from Oregon Department of Agriculture (ODA) certified weed-free quarries. Because the steel-lattice structure would be rebuilt in approximately the same location where geology and soils have already been disturbed, temporary and permanent impacts from structure construction would be **low**.

Upgrading the underground power line would also result in temporary impacts on soils. A 40-foot trench measuring 2.5 feet wide by 4 feet deep would be dug between the communications building and an electrical meter within the fence. Soils would be temporarily removed to install the line but would be placed back in the trench. Because the soils within the fence were previously disturbed, the resulting impacts on soils would be **low**.

The existing 3,440-foot access road would be graded and resurfaced with crushed rock and up to eight water bars would be installed. Road improvement activities would have direct temporary and permanent impacts as discussed above. Because installation of water bars would ultimately help manage and reduce erosion and sedimentation from road beds, geology and soils impacts would be **low**.

Indirect impacts on soils outside the communications site fence could occur. Any erosion that was not controlled could result in sheet erosion outside the fence. If hikers create new trails because of access limitations during construction, this would also result in the compaction of soils. BMPs to control erosion would be implemented to prevent or minimize erosion and disturbed areas would be revegetated, resulting in **low** impacts on soils.

Up to 14 noble firs located on about 0.53 acre of BLM land would need to be cut. Trees would be cut with chainsaws; no heavy equipment would be used. The tree tops and woody debris would be scattered in the immediate vicinity on the BLM's forest floor, protecting the soil from erosion, or if required, they would be chipped and hauled offsite. This would result in minimal soil disturbance and no soil compaction; impacts on soils from tree cutting would be **low**.

Overall, work within the communications site fence and the installation of water bars in the access road would result in temporary impacts on 0.23 acre and permanent impacts on 0.03 acre of geology and soils. The use of BMPs during construction activities would limit soil disturbance, exposure and

potential erosion impacts, as well as the potential for stormwater runoff. Because the areas that would be temporarily impacted would be revegetated and would gradually improve in soil structure, overall permanent impacts on geology and soils from Alternative 2A would be **low**.

BPA Albany Substation

Because all work at the BPA Albany Substation would occur within the graveled yard, which consists of fill material, there would be **no** impacts on native geology or soils under Alternative 2A.

Alternative 3C

Marys Peak

Under Alternative 3C, activities within the fenced area at the Marys Peak communications site would result in direct impacts on geology and soils. Staging materials and equipment inside the fence, construction of an addition to the USFS building, removal of the existing BPA communications facility, construction of a new steel-lattice structure and a retaining wall, installation of a propane tank on a concrete pad, trenching, directional boring, and use of heavy vehicles and equipment would all damage, compact, or remove geology and soils.

The types and levels of impacts on geology and soils would be similar to those described under Alternative 2A, but the impacts would cover a larger area. Excavated soils would be stored on-site and then used for backfilling the holes when new concrete foundations are put in place. Most structures would be rebuilt in approximately the same location where geology and soils have already been disturbed, so temporary and permanent impacts from structure construction would be **low**.

Indirect impacts on soils outside the communications site fence could occur. Any erosion caused by construction activities, including demolition of the BPA communications facility, that was not controlled could result in sheet erosion outside the fence. If hikers create new trails because of access limitations during construction, this would also result in the compaction of soils. Temporary indirect impacts on soils would be **low** because the site would be revegetated and BMPs implemented to minimize erosion.

The same access road improvements would be done under Alternative 3C as under Alternative 2A, described above, resulting in **low** impacts on geology and soils. The same stand of noble fir would also be cut under Alternative 3C as under Alternative 2A, described above, resulting in **low** impacts on soils.

Overall, work within the communications site fence and the installation of water bars in the access road would result in temporary impacts on 0.35 acre and permanent impacts on 0.05 acre of geology and soils. The use of BMPs during construction activities would limit soils disturbance, exposure and potential erosion impacts, as well as the potential for stormwater runoff.

Because the areas that would be temporarily impacted would be revegetated and gradually improve in soil structure, overall permanent impacts on geology and soils from Alternative 3C would be **low**.

BPA Albany Substation

Under Alternative 3C, the same work would occur at the BPA Albany Substation as under Alternative 2A, having **no** impacts on native geology or soils.

Alternative 4

West Point Spur

At West Point Spur, the use of a staging area outside the fence of the CPI site and improvements to the CPI facilities inside the fence under Alternative 4 would result in direct impacts on soils. Soils would be disturbed, removed, or compacted by staging materials and equipment, installation of a propane tank on a concrete pad, relocation or replacement of fencing, and use of heavy vehicles and equipment. Because construction activities would occur in areas where geology and soils have already been disturbed, temporary and permanent impacts from improvements to the CPI facilities would be **low**.

Portions of the existing access road to the CPI site would be improved, including the installation of up to five water bars in the road. Road improvement activities would have temporary and permanent impacts on geology and soils as discussed above. Because installation of water bars would ultimately help manage and reduce erosion and sedimentation, temporary permanent impacts on soils would be **low**.

Alternative 4 could also result in indirect impacts on soils at West Point Spur if erosion occurs as a result of the removal of vegetation and soil disturbance. Because BMPs would be implemented to prevent or minimize erosion and disturbed areas would be revegetated, any indirect impacts that could result from erosion would be **low**.

A stand of mixed conifers would be cut on about 0.76 acre of City of Corvallis land. The trees would be cut with chainsaws, without the need for heavy equipment. This would result in minimal soil disturbance and no soil compaction. Overall, cutting this 0.76 acre high-quality tree stand would result in **low** impacts on soils because the understory plants would not be removed and shrubs and forbs are expected to thrive in areas where trees were removed.

Ground disturbance within the fence and staging areas at West Point Spur would not reach depths that would disturb underlying geology; there would be **no** impact on geology at West Point Spur.

Overall, work inside and outside the CPI communications site fence and the installation of water bars in the access road would result in temporary impacts on 0.15 acre and permanent impacts on 0.01 acre of soils. The use of BMPs during construction activities would limit soil disturbance, exposure and potential erosion impacts, as well as the potential for stormwater runoff. Because the areas that would be temporarily impacted would be revegetated and would gradually improve in soil structure, overall permanent impacts on geology and soils from Alternative 4 would be **low**.

Prospect Hill

At the BPA Prospect Hill communications site, there would be no ground excavation or soil removal and the facility is constructed on previously compacted fill material, so there would be **no** direct impact on geology and soils. Although the communications site is located on the top of a large rounded hill with moderate to steep slopes to the west and north of the site and more gentle slopes to the south and east, **no** indirect impacts from erosion are expected due to the lack of ground disturbance.

Marys Peak

Alternative 4 would require removal of the existing BPA communications facility at Marys Peak. Removal of the facility would result in direct impacts on about 0.14 acre of underlying soils and nearby vegetation. Because the site would be revegetated and BMPs implemented to minimize erosion, demolition would result in a **low** temporary impact on soils.

Indirect impacts on soils outside the communications site fence could occur. Any erosion that was not controlled could result in sheet erosion outside the fence. If hikers create new trails because of access limitations during demolition, this would also result in the compaction of soils. BMPs to control erosion would be implemented to prevent or minimize erosion and disturbed areas would be revegetated, resulting in **low** impacts on soils

Because most areas that would be temporarily impacted would be revegetated and gradually improve in soil structure, there would be **no** permanent impacts on geology and soils from Alternative 4.

3.4.5 Mitigation Measures

If one of the action alternatives is implemented, BPA would implement construction BMPs and mitigation measures to avoid or minimize impacts from the Project on geology and soils. BPA is coordinating with public land managers to ensure that geology and soils-related BMPs and mitigation measures are consistent with their policies. The following measures would be implemented:

- Design and improve access roads to manage drainage from the road surface, and size and space water bars properly to accommodate flows and direct sediment-laden waters into vegetated areas.
- Develop and implement a **Project** Revegetation Plan to revegetate areas disturbed by construction, including soil preparation as necessary; for Alternative 2A or Alternative 3C, use site-specific methods developed for use within the Marys Peak SBSIA and approved by USFS and BLM staff, and if Alternative 4 is selected, using site-specific methods approved by City of Corvallis staff.
- Use plant materials sourced only from Marys Peak and West Point Spur for revegetation.
- **Use certified weed-free rice wattles or erosion control blankets impregnated with native seed obtained from Marys Peak for erosion control.**
- Prepare an Erosion and Sediment Control Plan (ESCP), **Stormwater Pollution Prevention Plan (SWPPP)**, site-specific safety plan, and fire prevention and suppression plan in compliance with federal, state and county requirements before starting construction; plans shall specify how to manage and respond to emergency situations involving hazardous materials to include oils and fuels, and any abandoned toxic materials found in work sites; all plans shall be kept on-site and maintained and updated as needed during construction.
- Explain geology and soils-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- **Avoid locating equipment and vehicle staging areas within the Marys Peak SBSIA, except within the chain link fence at the communications site and in the paved public parking lot.**
- Locate staging areas in previously disturbed or graveled areas to minimize disturbance to soil and vegetation, where possible.
- Employ an on-site **environmental** monitor (**hired directly by BPA and not the construction contractor**), during **all outdoor** construction **activities** at Marys Peak to ensure all mitigation measures and BMPs are correctly implemented during construction and to ensure that construction equipment and personnel remain within designated construction areas, **and public restricted access areas are in place for human health and safety purposes.**
- Limit vehicle speeds on unpaved roads and surfaces to 10 miles per hour or less to reduce dust.
- Obtain rock and gravel used for road surfacing, fill material, and other uses from **a quarry that is approved by the SNF botanist prior to installation on Marys Peak, and ideally is local and ODA-certified weed-free sources.**
- **Lay down tarp(s) before depositing temporary gravel piles (on the tarps) to ensure that the gravel can be lifted relatively easily after use, and not become embedded in vegetated areas.**
- **Limit the quantity of gravel brought to the Marys Peak summit for construction purposes, to the extent possible.**
- Leave vegetative strips adjacent to any open trench areas to avoid or minimize erosion and sedimentation.
- Control dust during construction with water or other appropriate control methods, without the use of chemical additives, as needed.
- Manage erosion and sediment as specified in the ESCP, including implementation of approved BMPs to minimize or eliminate sediment discharge into waterways and wetlands, minimize the size of construction disturbance areas, and minimize removal of vegetation, to the greatest extent possible.
- Inspect erosion and sediment controls periodically during construction, maintain them as needed to ensure their continued effectiveness, and where appropriate, remove them from the site when vegetation is reestablished and the site has been stabilized.

- Avoid spreading any excavated soils outside the communications site fence, and ~~inside~~ inside the fence, utilize uncontaminated native soil as backfill; excess soil beyond the needs of backfill or restoration must be removed and disposed *of* in a USFS-approved area, or off-site, outside the Marys Peak SBSIA at an appropriate location following all applicable county, state, and federal laws and regulations.
- Maintain soil profiles by storing excavated soils on-site and backfilling holes with subsoils first followed by top soils.
- Prohibit the use of heavy equipment in tree cutting areas and cut trees with machinery located on roads or by using chainsaws and other hand equipment.
- Inspect and repair access roads and other facilities after construction to ensure proper function and nominal erosion levels.
- Monitor growth of any planted materials until site stabilization is achieved (defined by an appropriate level of cover by native species) and revegetation performance criteria are met; if vegetative cover is inadequate, implement adaptive management and reseed/replant to ensure adequate revegetation.

3.4.6 Unavoidable Impacts Remaining After Mitigation

Although mitigation measures and construction BMPs would minimize impacts on geology and soils, construction-related activities would disturb, remove, and compact geology and soils under each of the Project alternatives. Each alternative could also result in indirect impacts, including erosion and sedimentation. The erosion potential for disturbed soils would be greatest during and immediately after construction activities. Afterwards, soils would stabilize as they settle and as vegetation becomes reestablished. Long-term impacts remaining after construction would be limited to localized soil compaction, minor erosion from road surfaces and formerly vegetated ground, and permanent loss or removal of geology and soils in areas covered by foundations or rock.

At the BPA Marys Peak site, implementation of Alternative 2A would directly impact and permanently remove about 0.03 acre and temporarily impact about 0.23 acre of geology and soils. Permanent impacts would occur in areas where geology and soils are buried or covered with foundations, pads, or crushed rock surfacing. Most impacts are anticipated to be temporary as revegetation would stabilize exposed soils and improve soil structure. The impacts on geology and soils from Alternative 2A would be **low** with the implementation of BMPs and mitigation.

At the BPA Marys Peak site, implementation of Alternative 3C would directly impact and permanently remove about 0.05 acre and temporarily impact about 0.35 acre of geology and soils. Permanent impacts would occur in areas where geology and soils are buried or covered with foundations, pads, or crushed rock surfacing. Most impacts are anticipated to be temporary as revegetation would stabilize exposed soils and improve soil structure. Removal of the existing BPA communications building at Marys Peak would initially disturb soils but the area would be revegetated. The impacts on geology and soils from Alternative 3C would be **low** with the implementation of BMPs and mitigation.

At West Point Spur, implementation of Alternative 4 would directly impact and permanently remove about 0.01 acre and temporarily impact about 0.15 acre of geology and soils. Permanent impacts would occur in areas where geology and soils are buried or covered with a concrete pad or crushed rock surfacing. Most impacts would be temporary as revegetation would stabilize exposed soils and improve soil structure. At the BPA Marys Peak site, removal of the existing BPA communications building would initially disturb soils but the area would be revegetated. Overall, there would be **no to low** impacts on geology and soils from Alternative 4 with the implementation of BMPs and mitigation. At the BPA Prospect Hill site, there would be **no** impacts on geology and soils.

3.5 Vegetation

3.5.1 Study Area

The study area for vegetation includes areas at the Marys Peak communications site, the West Point Spur CPI communications site, and the BPA Prospect Hill communications site. It includes areas where vegetation could be directly affected by Project construction and staging. Direct impacts would occur in construction work areas from activities such as removal, crushing, and cutting of vegetation, and soil removal. The vegetation study area includes areas where trees would be cut to create an unobstructed microwave beam path. It also includes areas adjacent to construction areas that could be indirectly affected by Project activities from erosion and sedimentation and from the introduction of weed species.

The Marys Peak communications site portion of the vegetation study area is about 7.7 acres and includes the following areas:

- Fenced summit communications site and a 50-foot **buffer** around the fence
- Unpaved access road that leads from the paved parking lot to the summit communications site (50-foot wide area centered on the road)
- An area where a stand of noble fir trees on BLM lands would be cut

The West Point Spur portion of the vegetation study area is about 4.2 acres and includes the following areas:

- CPI fenced communications site and a 50-foot buffer around the fence
- NF-112, leading from Marys Peak Road to the CPI site (50-foot wide area centered on the road)
- An area of mixed forest located northeast of the CPI communications sites where some trees would be cut
- Two material/equipment staging and vehicle driving/parking areas

The BPA Prospect Hill communications site portion of the vegetation study area is about 0.2 acre. Because work would only occur within the fence, the study area only includes the area within the fenced communications site and a 20-foot buffer around the perimeter of the fence.

There is no vegetation study area for the BPA Albany Substation because the portion of the substation where work would take place is a graveled pad of fill that has no vegetation.

3.5.2 Affected Environment

Vegetation Overview

This section covers both **vascular** and **non-vascular** plant species. Vascular plant species include trees, shrubs, and most herbaceous species, including flowering plants and ferns. Non-vascular species lack a developed system for transport of water and so are small, thin plants, including mosses, liverworts, and lichens. This section also covers fungi, although fungi are not plants.

Marys Peak is the highest point of the Coast Ranges Province, which extends from the middle fork of the Coquille River in southern Oregon into the Willapa Hills of southwest Washington (Franklin and Dyrness 1973). Marys Peak vegetation is affected by climate, soils and other factors. Elevation affects the climate of Marys Peak (elevation 4,097 feet) and West Point Spur (elevation 3,600), as does their proximity to the Pacific Ocean. The majority of the annual precipitation at the communications site occurs in the winter months and sharply declines during the summer months.

Due to the elevation, isolation, and other factors, a unique and diverse plant community is present on Marys Peak. The flowers that bloom in profusion attract many visitors and professional botanists, who conduct studies and field visits. Some plants that occur there are only found in drier areas east of the Cascade Mountains (Frenkel et al. 2012; Snow, 1984). In recognition of the special flora and beautiful vistas at Marys Peak, USFS designated the area a Scenic Botanical Special Interest Area (SBSIA) in 1989. The 924-acre Marys Peak SBSIA is on the higher elevations, including the Marys Peak communications site. The CPI communications site at West Point Spur is not within the SBSIA.

Marys Peak features forest, grassland (meadow), rock garden, and riparian vegetation types. West Point Spur features similar habitats, but lacks rock garden features. The forests on Marys Peak are dominated by noble fir (*Abies procera*) at higher elevations, and by Douglas-fir (*Pseudotsuga menziesii*) and western hemlock (*Tsuga heterophylla*) at lower elevations. An almost pure stand of noble fir occurs near the summit, representing the most extensive noble fir stand in the Coast Range. The forests at West Point Spur consist of a mixture of coniferous species, with no noble fir.

The meadow at the summit of Marys Peak is a 130-acre grassy bald. Some of the species found in the Marys Peak meadow are present in the smaller meadows of West Point Spur. Meadows are vegetated with dense grasses, ferns, and a diverse assemblage of **forbs**, including lilies, yarrow, violets, and other species, many of them perennials.

The vegetation at Marys Peak has been affected by historical livestock grazing, logging, fire suppression, construction and maintenance of structures including the communications sites, and recreation. Road building, trenching, and construction can create barriers between plant communities, remove/compact topsoil, increase erosion, and aid in the establishment of non-native species and **noxious weeds** (Frenkel et al. 2012). Soil removal and erosion can also deplete the native seed bank, hindering the ability of native species to reestablish themselves in disturbed areas.

The vegetation at West Point Spur has been affected by the construction of the two existing communications sites and a historic communications site that was removed. Recreational activities are not common in the West Point Spur vegetation survey area because it has restricted access and no nearby trails.

The vegetation at the Prospect Hill communications site consists of a mowed area of grassland around the perimeter of the fence and a graveled area inside the fence with weedy vegetation. Vegetation consists of non-native grasses and forbs, with some invasive shrub species, both native and non-native.

Vegetation Surveys

The U.S. Forest Service Region 6 Restoration Services Team (RST) conducted vegetation surveys for vascular species and USFS botanists conducted surveys for non-vascular species and fungi at Marys Peak (USFS, 2018a) and West Point Spur (USFS, 2018b). The RST described vegetation types and their plant communities, surveyed for plants considered noxious weeds by the Oregon Department of Agriculture (ODA), surveyed for special-status (rare) plant species, and created a list of plant species observed using regional floras. Various resources were used by Siuslaw National Forest (SNF) botanists to identify non-vascular species and fungi.

Vegetation surveys took place at Marys Peak on June 26-29, 2017, and at West Point Spur on June 19-22, 2018. SNF botanists conducted the non-vascular and fungi surveys on October 29, 2017, at Marys Peak, and October 31, 2018, at West Point Spur.

Prospect Hill vegetation was surveyed by BPA staff on September 18, 2018. The communications site is a mowed area that is dominated by non-native species, mainly grasses. It was not considered necessary to survey during June when most special-status species are in bloom and easily identified.

The list of all vascular and non-vascular plants observed during the Marys Peak and West Point Spur vegetation surveys is provided in Appendix B. Because of the lack of plant species diversity at Prospect Hill, species observed at that site are listed in the plant community description that follows.

Plant Communities

The ecological condition of each plant community in the study area was characterized as low-, moderate-, or high-quality using the following criteria:

- **High** – late *seral* plant composition and structure, minimal disturbance, and less than 5 percent cover by non-native species; late seral communities occur late in the succession process.
- **Moderate** – incomplete or skewed plant community structure and composition, most likely due to disturbance factors; non-native species with up to 25 percent cover
- **Low** – substantially altered plant composition and structure; with more than 25 percent cover by non-native species, sometimes early seral communities have relatively sparse vegetation, a high amount of cover by bare ground, and evidence of past disturbance

Marys Peak

At Marys Peak, the three vegetation types in the vegetation survey area are grassland (meadow), rock garden, and the noble fir stand, described below.

Grassland occurs within and outside the fence around the summit communications site and on the edges of the access road (Photographs 3-1 and 3-2). Grassland consists mainly of forbs and grasses, with scattered shrubs.



Photograph 3-1. Grassland within and near the fence around the Marys Peak communications site (June 20, 2017).



Photograph 3-2. Grassland along the access road to the summit, with a nearby pedestrian trail (June 21, 2017).

Hikers have developed trails by walking off the road. These trails have compacted soils, resulting in some bare spots in the vegetation. Grassland in the vegetation study area is considered moderate-quality due to disturbance and greater than 5 percent cover by non-native species. Non-native oxeye daisy (*Leucanthemum vulgare*) and sour dock (*Rumex acetosella*) are common and persistent in the fenced area and in the grassland along the road from the parking lot to the summit. Hairy cat's-ear (*Hypochaeris radicata*) also may occur in the project area. Two noxious weed species, common St. Johnswort (*Hypericum perforatum*) and tansy ragwort (*Senecio jacobaea*), occur in some areas, as described in the weed section, below. Native plants, including flowering species other than grasses, are more prevalent in less disturbed areas (Photograph 3-3).



Photograph 3-3. Grassland at the summit around the Marys Peak communications site (June 20, 2017).

The rock garden plant community is on the south and west facing rocky outcrop along the access road near the summit (Photograph 3-4 and 3-5). This rock garden is considered high-quality due to the predominance and variety of native species, few non-native species, and not much evidence of disturbance. This unique microhabitat consists of herbaceous flowering plant species.



Photograph 3-4 (above). Rock garden habitat near the Marys Peak summit (June 20, 2017). **Photograph 3-5** (right). Rock garden vegetation near the summit, adjacent to the access road (June 20, 2017).

The rock garden plant community is a late seral community that consists of large, established, and sustaining patches of vegetation including spreading phlox (*Phlox diffusa*) and Cardwell's penstemon (*Penstemon cardwellii*). This plant community evidences some signs of trampling, thinning, and erosion, but cover by non-native species is low, and noxious weeds were not observed in this community.

The noble fir *stand* that would be topped or cut at the base on BLM lands shows some evidence of tree thinning (removal) near the edges of the stand, and there is an established trail near the northern edge. (Photograph 3-6.) Other than the trail, recreational disturbance is very low. The understory consists of natural noble fir debris, several flowering forbs, and scattered grasses. Sour dock is the only non-native species that was observed in the noble fir stand. This tree stand is considered high-quality because it exhibits late seral characteristics, little disturbance, and has few non-native species in the understory.

West Point Spur

In the West Point Spur vegetation study area, the two predominant vegetation types are meadow and forest. The forest is considered high-quality because it exhibits late seral plant composition, there were no weeds observed, and disturbance is low. The dominant tree species are Douglas-fir, grand fir, and western hemlock. The age structure is well dispersed between large older trees, medium growth trees, and young and new growth trees. Forest also occurs along the access road in patches.

In the forest understory, dominant forbs include starry false lily of the valley (*Mianthemum stellatum*) and threeleaf woodsorrel (*Oxalis trillifolia*); dominant shrubs include oceanspray (*Holodiscus discolor*) and red elderberry (*Sambucus racemosa*). The two species of non-native forbs observed in the forest include one occurrence of garden vetch (*Vicia sativa*) and a few occurrences of purple foxglove (*Digitalis purpurea*).



Photograph 3-6. Trail within the noble fir stand, located on BLM land at Marys Peak (June 21, 2017).



Photograph 3-7. Meadow habitat south of the CPI communications site (June 27, 2018).

The main disturbance in the forest is naturally occurring woody debris, including downed logs and snags with broken tops. Very few cut trees are present. This forest structure promotes higher forb diversity in microclimates and small openings in the canopy.

The meadow at West Point Spur is considered moderate-quality because it exhibits mid- to late seral plant composition, but noxious weeds are present, and the disturbance level is relatively high. (Photograph 3-7.) Dominant forbs in the meadow include native riverbank lupine (*Lupinus rivularis*) and Virginia strawberry (*Fragaria virginiana*), associated with California sedge (*Carex californica*), Idaho fescue (*Festuca idahoensis*), western brackenfern (*Pteridium aquilinum*), and Pacific blackberry (*Rubus ursinus*). Non-native

species include common sheep sorrel (*Rumex acetosella*), oxeye daisy, hairy cat’s-ear, and purple foxglove. Tansy ragwort and common St. Johnswort, both noxious weed species, occur in grassland, as described in the weed section below.

Prospect Hill

The BPA Prospect Hill communications site is a grass-dominated upland on a very dry south-facing hill (Photograph 3-8). A large agricultural field is immediately downslope; once a Christmas tree farm, this slope is now a recently planted hazelnut orchard. In the mowed grassy area outside the fence, non-native forbs include oxeye daisy, Queen Anne's lace, English plantain (*Plantago lanceolata*), nipplewort (*Lapsana communis*), tansy ragwort, bull thistle (*Cirsium vulgare*), and Canada thistle (*Cirsium arvense*). Shrub species attempting to invade the mowed site include native snowberry (*Symphoricarpos albus*) and Pacific blackberry, and non-native Scotch broom (*Cytisus scoparius*) and Himalayan blackberry (*Rubus armeniacus*). Some of these species are considered noxious weeds, including the thistles, tansy ragwort, Scotch broom, and Himalayan blackberry, as discussed in the weed section below. This grassland is a low-quality plant community, with more than 25 percent cover by non-native species and evidence of past disturbance.



Photograph 3-8. Vegetation at the BPA Prospect Hill site – mowed area outside the fence and weedy area inside the fence (Sept. 18, 2019).

Sparse, weedy vegetation grows within the fence. Non-native herbaceous species including grasses, Queen Anne's lace, and common St. Johnswort are invading the graveled site along with non-native shrubs, including Himalayan blackberry and Scotch broom. The vegetation within the fence is periodically controlled, evidenced by the lack of dense shrub cover.

Noxious Weeds

Noxious weeds are non-native plants that have been designated as undesirable plants by federal and state laws. Weeds displace native species, decrease plant species diversity, degrade habitat for rare species and wildlife, increase the potential for wildfire, decrease productivity of farms, rangelands, and forests, create unattractive areas dominated by single species, and impair full use of the landscape by wildlife and humans. As weed infestations spread, private landowners and public land managers spend increasing amounts of money, time, and resources attempting to eliminate weed species.

ODA maintains Oregon's official state list of noxious weeds that landowners may be required to control (ODA 2019). The noxious weeds on the state list are separated into the following three lists (A, B, and T-designated) based on their distribution and on their control requirements under state law:

- **A listed weeds** either occur in the state in small enough infestations to make eradication or containment possible or are not known to occur, but their future occurrence in Oregon is imminent; infestations are subject to eradication or intensive control when and where found.
- **B listed weeds** are regionally abundant, but they may have limited distribution in some counties; control is limited to intensive control at the state, county or regional level as determined on a site-specific, case-by-case basis.
- **T-designated weeds** are species selected from either the A or B list that are priority targets for control, as directed by the Oregon State Weed Board.

Nearly all of the species on the Benton County noxious weeds list, except aquatic species, have the potential to occur at, or near, the Marys Peak and West Point Spur sites, including in the vicinity of the access roads. Nearly all of the species on the Marion County noxious weeds list, except aquatic species, have the potential to occur at, or near, the Prospect Hill site. Because Albany Substation is devoid of vegetation, weed occurrence was not considered.

Marys Peak

Two species of state-listed noxious weeds were observed within grassland in the Marys Peak vegetation study area, common St. Johnswort (*Hypericum perforatum*) and tansy ragwort (*Senecio jacobaea*).

Common St. Johnswort is a B listed weed, which is designated for management by Benton County in priority areas and targeted for management by USFS. A total of four populations of common St. Johnswort were observed. Three populations occur within and outside the fence around the communications site and a population occurs near the parking lot trailhead. Common St. Johnswort is a perennial with branching stems, opposite leaves, green to rust color vegetation with translucent glandular dots, with yellow flowers. It has rhizomes, a plant stem that grows horizontally under or along the ground and often sends out roots and shoots as a way of spreading, in addition to reproducing from the abundant seed it produces.

Tansy ragwort is an ODA B listed weed which is designated for management in priority areas in Benton County. This species is targeted for biocontrol in Oregon and is of management concern to USFS. One population of tansy ragwort occurs near the parking lot trailhead. Tansy ragwort is a biennial or short-lived perennial, with distinctive dark green and deeply lobed, ruffled leaves, and purplish-red stems. The branching flower stalks bear numerous bright yellow flowers that usually have 13 petals.

In addition to the two state-listed noxious weeds discussed above, the USFS is concerned about two other non-native species that although not state-listed weeds, are very invasive. Oxeye daisy and hairy cat's-ear both invade areas and spread quickly, out-competing native vegetation. Because the both produce prolific amounts of seed, they tend to flower and produce large numbers of seedlings in subsequent years, displacing native vegetation.

West Point Spur

The same two B listed weeds that are found at Marys Peak are present in the West Point Spur vegetation study area. Tansy ragwort occurs only by the access road in very small numbers and common St. Johnswort is more common at about 8 percent cover. The highest occurrences of common St. Johnswort are found on or near the road and communications site where the soil is compacted or vegetation is cleared. Non-native oxeye daisy and hairy cat's-ear are also present.

Prospect Hill

Five species of B listed weeds occur in scattered patches at the BPA Prospect Hill communications site: tansy ragwort, common St. Johnswort, bull thistle, Canada thistle, Scotch broom, and Himalayan blackberry. Most noxious weed occurrences are within the fenced area, but thistle species are more common outside the fence, in the grassy area surrounding the communications site.

Special-Status Plant Species

Special-status plant species have been identified for protection and/or management under federal and state laws, programs, and policies. For this Project, a list of special-status plant species was compiled using the following sources:

- Plant species identified for protection under the federal **Endangered Species Act** (16 U.S.C. 1531 *et seq.*), including listed endangered, listed threatened, species proposed for federal listing, and federal species of concern with the potential to occur near Project components (USFWS, 2015, 2016, 2017, 2019)

- Plant species listed by the state (ODA) as endangered, threatened, and sensitive
- SNF and BLM Northwest Oregon District Sensitive plant species
- USFS Central Coast Ranger District Survey and Manage species
- Rare plant species tracked by the Oregon Biodiversity Information Center (ORBIC 2017, 2018)
- Regional herbaria and other resources on occurrence, distribution, and habitat needs

A list of special-status plant and fungi species was compiled for the Project vegetation survey based on information from the above sources, with input from SNF and BLM botanists (see Appendix A). The list includes vascular plant species, non-vascular plant species (including mosses, liverworts, lichens), and fungi. Each species on the list was evaluated for its potential to occur in the study area based on known habitats, including any known occurrences of special-status species within 1 mile of Project areas.

Special-status species were not observed during Project vegetation surveys. Suitable habitat is present for eight Sensitive fungi species that are on both the USFS and BLM special-status species lists. Because conditions for fungal fruiting were poor at the time of the survey, it is assumed that these 8 Sensitive fungi occur within the BLM noble fir stand that would be removed at Marys Peak (Table 3-2).

Table 3-2. USFS and BLM Sensitive Fungi Species Assumed Present in BLM Noble Fir Stand

Fungi Species	Status	Suitable Habitat
<i>Chamonixia caespitosa</i>	G5, S1 ORBIC List 2	Mycorrhizal with conifers; known occurrences at Cape Perpetua and Cascade Head Experimental Forest
<i>Cortinarius barlowensis</i>	G3,S2 ORBIC List 2	Terrestrial in coastal to montane conifer forested wetlands; one known occurrence on the SNF
<i>Russula idahoense</i>	G2G3, S1 ORBIC List 1	Mycorrhizal with true fir above 3,600 feet; known occurrence on Marys Peak
<i>Lactarius silviae</i>	G2, S2 ORBIC List 1	Mycorrhizal with Douglas-fir and western hemlock; known occurrence at Cummins Creek Area
<i>Phaeocollybia gregaria</i>	G1G2, S1S2 ORBIC List 1	Mycorrhizal with Douglas-fir and Sitka spruce; known occurrence in Cascade Head Experimental Forest
<i>Phaeocollybia oregonensis</i>	G2, S2 ORBIC List 1	Terrestrial in conifer forest; endemic to the Oregon Cascades and Coast Range
<i>Pseudorhizina californica</i>	ODA: SE G4, S2 ORBIC List 2	Well-rotted stumps or logs of coniferous trees and litter or soil rich in brown rotted wood; one known occurrence on the SNF
<i>Rhizopogon exiguus</i>	ODA: SE G2G3, S1S2	Mycorrhizal with Douglas-fir and western hemlock; known occurrence in the vicinity of Marys Peak

- Oregon Department of Agriculture (ODA) state designation: SE = state endangered
- Global (G) rank and State (S) rank: 1 = Critically imperiled; 2 = Imperiled; 3 = Rare and uncommon, vulnerable; 4 = Not rare and apparently secure; 5 = Demonstrably widespread, abundant and secure
- ORBIC List 1 = Threatened or endangered throughout range
- ORBIC List 2 = Threatened or endangered in Oregon but secure elsewhere
- ORBIC List 3 = Species for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range

Federally-listed and State-listed Plant Species

The federally-listed plant species identified by the U.S. Fish and Wildlife Service (USFWS) with the potential to occur at the Project components are federally-endangered Bradshaw’s desert-parsley (*Lomatium bradshawii*) and Willamette daisy (*Erigeron decumbens*), and federally-threatened golden paintbrush (*Castilleja levisecta*), Kincaid’s lupine (*Lupinus sulphureus* spp. *kincaidii*), Nelson’s checker-mallow (*Sidalcea nelsoniana*), water howellia (*Howellia aquatilis*), and Willamette daisy (*Erigeron decumbens*) (USFS, 2015, 2016, 2017, 2019). ESA designated **critical habitat** for these plant species does not occur within 1 mile of Project work areas. There are no plant species proposed for federal ESA

listing or candidate species identified as having the potential to occur at Project sites. There are no known occurrences of federally listed plant species within 1 mile of all Project sites (ORBIC 2018).

The federally-listed species identified by the USFWS are also state-listed species tracked by ODA. They occur mainly in wet or dry prairies, with the exception of water howellia, which occurs in slow-moving water that remains into the growing season. Both Bradshaw's lomatium and Nelson's checkermallow tend to occur in wetter sites. Because there are no wetlands or water features that would be affected by the Project, these species would not be affected.

The species that inhabit dryer sites, including Kincaid's lupine, golden paintbrush, and Willamette daisy, may not be able to occur at the higher elevations of Marys Peak and West Point Spur. Kincaid's lupine is known from some hilly sites but not at mountain top elevations. Because of the high level of botanical exploration at Marys Peak, it is highly unlikely that these showy species would have been overlooked all these years. West Point Spur has probably not been visited by botanists as extensively as Marys Peak.

The habitat at Prospect Hill is very low-quality and does not retain any of the characteristics of native prairie. The vegetation at the Prospect Hill communications site no longer hosts any of the native plant species known to be commonly associated with rare native prairie species.

During the vegetation field surveys conducted in 2017 and 2018, federal and state special-status plant species were not observed in the vegetation survey area at Project components.

3.5.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications facility would not be rebuilt and impacts related to Project construction would not occur. Operations and maintenance activities would continue at the BPA Marys Peak and the BPA Prospect Hill communications sites and would be similar to existing practices. Maintenance activities at the BPA Marys Peak communications site would result in **low** impacts on vegetation resources. If it were necessary to perform emergency repairs at Marys Peak, it would likely not be possible to plan or time these activities to minimize impacts on vegetation. Because potential impacts resulting from emergency repairs would be localized and affect a small amount of moderate-quality grassland within the fenced communications site or along the access road, impacts would be **low**. At the BPA Prospect Hill communications site, there would be **no** impacts on vegetation from continuing maintenance activities and emergency repairs. *Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future.*

3.5.4 Environmental Consequences –Action Alternatives

This section describes the potential impacts of implementing any of the action alternatives on vegetation, including plant communities, noxious weeds, special-status plant species, and designated critical habitat under the federal ESA. Impacts on plant species and plant communities would be direct or indirect, and temporary or permanent.

Impacts Common to All Action Alternatives

Construction of any of the action alternatives would cause direct and indirect impacts on vegetation communities, which could be temporary or permanent. Direct impacts are those that remove or harm vegetation such as grading or driving over vegetation. Indirect impacts would occur where Project construction activities result in the degradation of nearby vegetation or in construction areas after the initial disturbance.

Temporary impacts could be long-term or short-term, depending on the severity of the impact. Temporary impacts would disturb vegetation but would not prevent the reestablishment of vegetation communities similar to the preconstruction vegetation community. Although temporary impacts could be partially mitigated by replanting disturbed areas after construction, successful revegetation can be slow or difficult to achieve. Permanent impacts would result in the modification of a vegetation community to the extent that it would not return to preconstruction conditions during the life of the Project.

The following impacts on vegetation could occur from construction activities:

- Clearing and grading in some areas would remove vegetation and the upper, most biologically active portion of the soil
- The use of heavy equipment would crush vegetation and compact soils, potentially damaging plant roots
- General trampling by workers and vehicles would damage plants and result in soil compaction or topsoil removal, which could affect long term viability of vegetation
- Any areas with a permanent footprint (new steel-lattice structures, building addition, or installation of water bar aprons) would result in the permanent removal of vegetated areas
- Erosion and sedimentation in and beyond construction works areas would deplete soil nutrients, inhibiting plant reestablishment
- The movement of equipment and workers, the introduction of fill materials, and soil disturbance could result in the introduction or spread of non-native and noxious weeds into areas disturbed by construction
- Tree cutting, including the disturbance of downed wood, snags, and stumps, could reduce some non-vascular plant species and fungi habitat and destroy habitat for understory plant species that need shade.

The loss of plant cover and disturbance of soil would disrupt biological functions, including nutrient retention and recycling, and thus degrade plant habitat, at least temporarily. The loss of plant cover could also result in minor sheet erosion and the formation of some small channels, which could degrade downslope vegetation communities. The risk of erosion would be highest on steep slopes and during heavy rainfall.

The introduction and spread of noxious weed species and other invasive non-native plant species into areas disturbed by construction equipment and beyond, vehicles, workers (boots and clothing), and materials contaminated with seeds, roots, and other weed parts would be an indirect impact. Bare, disturbed, and compacted soils are vulnerable to weed invasion through natural dispersal, such as wind-blown seeds. Weeds would displace native plants and degrade vegetation communities. Weeds can alter the natural fire regime by increasing the frequency of wildfires. Many non-native species, such as oxeye daisy and hairy cat's-ear, become a long-term or permanent problem because once an invasive plant population becomes established, it can spread and become resistant to weed control efforts.

Because noxious weeds and other invasive non-native plant species occur at all Project components, including at the communications sites and along access roads, ground-disturbing activities associated with construction could open up new areas for potential weed spread or introduction. Prior to construction, BPA would conduct pretreatment of some weeds, including noxious weeds, oxeye daisy, and hairy cat's-ear in all construction work areas. This would include the pretreatment of weeds at communications sites and along existing access roads. Weed treatment methods could include mechanical treatment, such as lopping or hand-pulling, chemical (spot treatment by herbicides), or biological controls, such as release of the cinnabar moth for tansy. Where noxious weeds are present in Project work areas after construction, as determined by a post-construction weed survey, post-

construction treatment of noxious weeds would be conducted. Weed treatment on federal lands would follow each agencies' weed treatment protocol and requirements.

The rock garden located near and downslope from the Marys Peak communications site is an especially sensitive plant community because the soils tend to be thin, and the area is highly erodible. The rock garden habitat could become degraded if significant erosion occurs, drainage patterns are altered, off-trail pedestrian foot traffic increases during construction, or if weeds are introduced.

Climate change will likely necessitate that plants survive under new climatic conditions (USFS n.d.). Plant community structure and composition will likely shift over the next century in response to increasing temperatures and atmospheric CO², changing precipitation and disturbance regimes. Rising temperatures and increased summer drought would be expected to stress plants and potentially increase the incidence of fire. Both non-native and native plants could respond to climate change by shifting their distribution to different elevations. Climate change could enable the expansion of invasive species in ecosystems through the creation of more disturbed landscapes and by giving non-natives an advantage over stressed native species.

Areas where there would be ground disturbance due to Project construction would be revegetated following construction. Although it could take about five years for vegetation to become reestablished, climate change would not substantially alter the vegetation within that timeframe. BPA would implement a Project Revegetation Plan to ensure native plant communities become established in areas disturbed by Project construction, with post-construction weed-monitoring and treatment.

Some areas where the Project would permanently impact vegetation could be further affected by climate change. Previously vegetated areas where the ground surface would be covered with impervious surfaces would not be exposed or vulnerable to further impacts due to climate change. Vegetation permanently impacted in other areas, such as in rock aprons adjacent to water bars and areas where trees would be removed for the beam path, would remain vulnerable to the effects of climate change and impacts could be intensified if the vegetation does not become established enough to resist invasion by non-native plants.

Maintenance and operation of the communications site would require ongoing tree-topping or removal to maintain the beam path. Assuming non-native and native plants shift their distributions in response to climate change, disturbance from future beam path maintenance could enable greater expansion of invasive species that are more tolerant to changed conditions than stressed native species. Therefore, climate change would have the potential to further increase the Project's impact on vegetation in small areas along the access road and in beam paths, totaling less than 1 acre regardless of chosen action alternative.

Because the scope of construction work varies for each action alternative, each alternative would have a different impact on vegetation. Discussion of the potential impacts specific to each alternative are presented below. The size of the area that could be temporarily or permanently disturbed by construction under each action alternative was used to estimate impacts on vegetation (Table 3-1).

Impacts Specific to Action Alternatives

Alternative 2A

Marys Peak

Improvements to BPA facilities within the fence at Marys Peak under Alternative 2A would result in direct impacts on vegetation. Vegetation would be crushed or removed by staging materials and equipment within the fence, work on the building's exterior, propane tank maintenance, construction of a new steel-lattice structure, trenching, directional boring, and vehicle and foot traffic.

Construction could result in the introduction or spread of non-native species, including noxious weeds that are already present within the fenced area. This would be a high impact if allowed to occur given the special botanical designation of this area. To prevent or minimize the likelihood of noxious weed introduction and spread, best management practices (BMPs) will be implemented to help prevent the introduction of new weed species and the spread of existing weed species, resulting in **moderate** impacts on vegetation from construction.

Vegetation along the sides of the access roads would be both temporarily and permanently impacted from the installation of water bars in the access road. Installation of the rocky drainage “apron” at the edge of the water bar would require clearing of existing vegetation, grading and compacting soils, and adding new fill material. The construction of water bars would permanently replace eight vegetated areas with more sparsely vegetated rock-lined drainage features. The apron would be constructed with enough rock to slow the water, but would leave enough space to allow vegetation to grow through the apron itself, eventually obscuring the rock. Installation of water bars in the access road would result in the temporary disturbance and permanent removal of some moderate-quality grassland. However, because most areas along existing roads consist of moderate-quality vegetation and the rock apron and the edges of the rock apron would be revegetated with native species, impacts from water bar construction would be **moderate**.

In total, work within the communications site fence and the installation of water bars in the access road would result in the temporary disturbance of 0.23 acre of moderate-quality grassland and permanent removal of 0.03 acre of moderate-quality grassland. Because the areas that are temporarily impacted would be revegetated with native species, overall impacts on vegetation would be **moderate**.

Indirect impacts on vegetation outside the communications site fence could occur. Any erosion that was not controlled could result in sheet erosion and degradation of plant communities outside the fence. If hikers create new trails because of access limitations during construction, this would also result in the degradation of plant communities. BMPs to control erosion would be implemented to prevent or minimize erosion. However, any non-native plants introduced within the fence could spread outside the fence, resulting in **moderate** impacts on vegetation.

Up to 14 noble firs located on BLM land would be cut to create an unobstructed microwave beam path. This 0.53 acre stand of trees is considered high-quality forest that is assumed to include special-status fungi species. To minimize disturbance to vegetation and soil, trees would be cut without bringing in heavy equipment. If the trees are cut at the base, habitat for some non-vascular plant species and special-status fungi would be removed, as would understory plant species that need shade. If the trees are topped and the tops left on the forest floor and snags retained, this would minimize disturbance to plants and fungi and retain some shade. Overall, cutting of this 0.53-acre high-quality stand of noble fir would be a **moderate** impact because, although some habitat for understory plants and Sensitive fungi could be disturbed or removed, more meadow habitat would eventually be created in its place.

BPA Albany Substation

Because all work at the BPA Albany Substation would occur within the graveled yard, there would be **no** impacts on vegetation under Alternative 2A.

Alternative 3C

Marys Peak

Under Alternative 3C, activities within the fenced area at the Marys Peak communications site would result in direct impacts on vegetation. Vegetation would be crushed or removed by staging within the fence, by the construction of an addition to the USFS building, propane tank maintenance, construction of a new steel-lattice structure, construction of a retaining wall, trenching, directional boring, and vehicle and foot traffic. Alternative 3C would require removal of the existing BPA communications

facility at the summit; the BPA building and associated equipment would be dismantled and removed from the site.

The level and types of impacts on vegetation would be similar to those described under Alternative 2A, but the impacts would cover a larger area. Work within the communications site fence and the installation of water bars in the access road would result in the temporary disturbance of 0.35 acre of moderate-quality grassland and permanent removal of 0.05 acre of moderate-quality grassland. Because the areas that are temporarily impacted would be revegetated with native species, including the current BPA communications site, impacts would be **moderate**.

Indirect impacts on vegetation outside the fenced area due to potential erosion or inadvertent spread of non-native plants would be **moderate**. The same 0.53 acre of noble fir would be cut under Alternative 3C as under Alternative 2A, resulting in **moderate** impacts because, although some plant and sensitive fungi habitat could be disturbed or removed, more meadow habitat would eventually be created in its place.

Alternative 3C would require removal of the existing BPA communications facility at Marys Peak. Removal of the facility and grading the site would result in direct impacts on vegetation. Demolition would initially disturb about 0.14 acre (within the overall 0.35 acre temporary disturbance area), a temporary **low** impact on vegetation because the vegetation within the fence is predominantly non-native. Following demolition, the disturbed area within the fence would be revegetated with native species, a **low** beneficial effect.

BPA Albany Substation

Because all work at the BPA Albany Substation would occur within the graveled yard, there would be **no** impacts on vegetation under Alternative 3C.

Alternative 4

West Point Spur

Improvements to the CPI facilities within the fence at West Point Spur and staging immediately outside the fence would result in direct impacts on vegetation and soils. Vegetation would be crushed or removed by staging materials and equipment, work on the building's exterior, propane tank installation (if needed), and vehicle and foot traffic.

Construction could result in the introduction or spread of non-native species, including noxious weeds that are already present near the fenced area. To prevent or minimize the likelihood of noxious weed introduction and spread, BMPs will be implemented to help prevent the arrival of new weed species and to prevent the spread of existing weed species, resulting in **moderate** impacts on vegetation from construction.

Vegetation along the sides of the access roads would be temporarily and permanently impacted by the installation of water bars in the access road. Installation of the rocky drainage "apron" at the edge of the water bar would require clearing of existing vegetation, grading, and compacting soils; and new fill material. The construction of water bars would permanently replace five vegetated areas with more sparsely vegetated rock-lined drainage features. The apron would be constructed with enough rock to slow the water, but would leave enough space to allow vegetation to grow through the apron itself, eventually obscuring the rock. Installation of water bars in the access road would result in the temporary disturbance and permanent removal of some moderate quality grassland. Because most areas along existing roads consist of moderate-quality vegetation and the rock apron and the edges of the rock apron would be revegetated with native species, impacts from water bar construction would be **moderate**.

In total, work within and outside the communications site fence and the installation of water bars in the access road would result in the temporarily disturbance of 0.15 acre of moderate-quality grassland and

permanent removal of 0.01 acre of moderate-quality grassland. Because the areas that are temporarily impacted would be revegetated with native species, overall impacts on vegetation would be **moderate**.

Indirect effects to vegetation outside the communications site fence are unlikely due to the small amount of ground disturbance. Any erosion that was not controlled could degrade plant communities outside the fence. BMPs to control erosion would be implemented to prevent or minimize erosion, resulting in **low** impacts on vegetation.

Up to 20 conifers on 0.76 acre of City of Corvallis land would be cut. The stand of trees is considered high-quality forest. To minimize vegetation and soil disturbance, trees would be cut without bringing in heavy equipment. If the trees are cut at the base, habitat for some non-vascular plant species and special-status fungi would be removed, as would understory plant species that need shade. If the trees are topped and the tops left on the forest floor and snags retained, this would minimize disturbance to plants and fungi and retain some shade. Overall, cutting this 0.76 acre high-quality tree stand would be a **moderate** impact because, although the habitat for some understory plants and sensitive fungi could be disturbed or removed, more meadow habitat would eventually be created in its place.

Prospect Hill

At the Prospect Hill BPA communications site, vegetation would be crushed or removed by staging materials and equipment and by vehicle and foot traffic. Vegetation would not be degraded since it is already very low-quality due to the lack of native species cover. Because all work areas at Prospect Hill would be within the fence in a graveled, weedy area, impacts on vegetation would be **low**.

Marys Peak

Alternative 4 would require removal of the existing BPA communications facility at Marys Peak. Removal of the building and grading the site would result in direct impacts on vegetation. Demolition would initially disturb about 0.14 acre, a temporary **low** impact on vegetation because the vegetation within the fence is predominantly non-native. Following demolition, the disturbed area within the fence would be revegetated with native species, a **low** beneficial effect.

Potential Impacts on Vegetation on Public Lands

BPA is coordinating with USFS, BLM, and the City of Corvallis on potential impacts on vegetation from this Project because vegetation on their lands could be affected. This section summarizes the impacts on vegetation from communications site work, access road improvements, and tree cutting under each alternative, by affected public land owner. No privately-owned lands would be affected by this Project.

BLM lands would only be impacted under Alternative 2A and Alternative 3C. Under both alternatives, three of the eight water bars would be installed on BLM land in the short stretch of access road leading to the summit. This would result in temporary impacts on 0.03 acre and permanent impacts on 0.01 acre of moderate-quality grassland. About 0.53 acre of noble fir high-quality forest would be cut on BLM land that is assumed to be habitat for eight sensitive fungi species.

USFS lands that would be directly impacted under all alternatives include moderate-quality grassland. Most of the lands impacted under both Marys Peak alternatives would be USFS lands. Impacts on vegetation would be similar under Alternative 2A (0.2 acre temporary impacts and 0.02 acre permanent impacts) and Alternative 3C (0.32 acre temporary impacts and 0.04 acre permanent impacts). Under Alternative 4, the only USFS lands impacted would be a portion of the access road where three water bars would be installed, resulting in 0.3 acre temporary impacts and 0.1 acre permanent impacts on vegetation. Under all action alternatives, no trees would be cut on SNF lands.

The only BPA land where vegetation would be impacted is the BPA Prospect Hill communications site. Low-quality grassland could be impacted within the graveled area within the communications site fence. There is no vegetation at the BPA Albany Substation where Project work would take place.

City of Corvallis lands would be impacted only under Alternative 4. Most of the lands impacted under Alternative 4 would be City of Corvallis lands except for a portion of the access road leading to the site. Construction, including the installation of water bars in the access road, would result in temporary impacts on 0.1 acre and permanent impacts on 0.01 acre of moderate-quality grassland. About 0.76 acre of high-quality forest would be cut on City of Corvallis land.

Potential Impacts on Special-Status Plant Species

Federally-listed and State-listed Plant Species

There are no known occurrences of federally-listed plant species within 1 miles of all Project sites. During the vegetation field surveys conducted in 2017 and 2018, plants listed under the federal ESA were not observed in the vegetation survey area at Project components. Also, no federal ESA-designated critical habitat for USFWS-listed plant species occurs within 1 mile of Project work areas. There would be **no** impacts on federal special-status plants or designated critical habitat by any action alternative because they do not occur within the vegetation study area for all Project components.

There are no known occurrences of state-listed plant species within 1 mile of all Project sites. During the vegetation field surveys conducted in 2017 and 2018, plants listed under the state ESA were not observed in the vegetation survey area at Project components. There would be **no** impacts on state-listed species by any action alternative because they do not occur within the vegetation study area for all Project components.

Sensitive Species

The SNF conducted a Biological Evaluation (BE) to assess potential impacts on plant species currently listed on the Regional Forester's Sensitive Species List for the Siuslaw National Forest (FSM 2672.4). A five-step process was used to summarize assessment procedures for non-vascular species; vascular species were not included in the BE because they do not occur in the Project survey areas. Potential impacts on non-vascular species include host tree removal, woody debris removal, and disturbing soil and duff layers. Many of the non-vascular species require a host tree to persist, and cutting host trees would negatively impact those species. Soil disturbance could occur from vehicle or foot traffic, access road improvements, and the use of staging areas. Physical disturbance or the removal of vegetation or soil would impact non-vascular species by removing habitat and substrate. Indirect impacts that have the potential to alter habitat composition and moisture availability include erosion and non-native species introduction.

For the eight USFS and BLM Sensitive fungi species that were not observed, but assumed to be present in the tree cutting area on BLM lands at Marys Peak based on the habitat, **USFS made the determination that the Project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species** (USFS 2018a, USFS 2019b). As part of the BE process, a biological investigation and analysis of effects were not required because the cumulative effect of these activities would likely have **no** impact on sensitive fungi species. The BLM concurred with this determination made by the USFS (pers. comm. with Heidi Christensen, Botanist, BLM, July 2, 2020). For fungi species that could have habitat removed by tree-cutting under Alternative 2A and Alternative 3C, impacts would be **moderate** given the small area affected. The BLM botanist also concurred with this USFS determination (pers. comm. with Heidi Christensen, Botanist, BLM, July 2, 2020).

3.5.5 Mitigation Measures – Action Alternatives

If one of the action alternatives is implemented, BPA would implement construction BMPs and mitigation measures to avoid or minimize impacts from the Project on vegetation resources. BPA is

coordinating with public land managers to ensure that vegetation-related BMPs and mitigation measures are consistent with their policies. The following measures would be implemented:

- Develop and implement a **Project** Revegetation Plan to revegetate areas disturbed by construction, including soil preparation as necessary; for Alternative 2A or Alternative 3C, use site-specific methods developed for use within the Marys Peak SBSIA and approved by USFS and BLM staff, and if Alternative 4 is selected, using site-specific methods approved by City of Corvallis staff.
- Use plant materials sourced only from Marys Peak and West Point Spur for revegetation.
- **Use certified weed-free rice wattles or erosion control blankets impregnated with native seed obtained from Marys Peak for erosion control.**
- Designate the Marys Peak summit rock garden and meadow areas as “No Work” areas on all design and construction documents and maps.
- Prepare an ESCP, **SWPPP**, site-specific safety plan, and fire prevention and suppression plan in compliance with federal, state and county requirements before starting construction; plans shall specify how to manage and respond to emergency situations involving hazardous materials to include oils and fuels, and any abandoned toxic materials found in work sites; all plans shall be kept on-site and maintained and updated as needed during construction.
- Explain vegetation-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Provide training to all Project personnel, prior to the start of construction, on the importance of the botanical resources at Marys Peak and on the ecological and economic importance of controlling invasive species and how they can be spread during construction.
- Locate staging areas in previously disturbed or graveled areas to minimize disturbance to soil and vegetation, where possible.
- Avoid locating **equipment and vehicle** staging areas within the Marys Peak SBSIA, except in areas within the **chain link** fence at the communications site and in the paved **public** parking lot.
- Control noxious weeds and certain invasive non-native plant species, including oxeye daisy and hairy cat’s-ear, in construction work areas before construction to reduce the potential for widespread establishment and the need for long-term management.
- **Install temporary exclusion rope fencing and signage, prior to construction, along the access road to the Marys Peak summit in areas with rare native plant species and high-quality plant communities, including the rock garden near the summit.** ~~Install protective fencing to prevent equipment and personnel from trampling rock garden areas during construction.~~
- **Prevent entry into areas outside of the unpaved access road or the fenced communications site by all contractor personnel, vehicles, equipment, and materials.**
- **Mark water bar and rock apron locations in the field with flags prior to conducting access road work, and coordinate with a USFS botanist to inspect the area to determine if there are native plants to salvage, if so, then salvage and replant in the fall.**
- Employ an on-site **environmental** monitor (**hired directly by BPA and not the construction contractor**), during **all outdoor** construction **activities** at Marys Peak to ensure all mitigation measures and BMPs are correctly implemented during construction and to ensure that construction equipment and personnel remain within designated construction areas, **and public restricted access areas are in place for human health and safety purposes.**
- **Employ a professional botanist to monitor access road work at Marys Peak to ensure vegetation-related mitigation occurs.**
- Limit vehicle speeds on unpaved roads and surfaces to 10 miles per hour or less to reduce dust.

- Equip all vehicles used during construction with basic fire-fighting equipment, including extinguishers and shovels to prevent fires.
- Obtain rock and gravel used for road surfacing, fill material, and other uses from **a quarry that is approved by the SNF botanist prior to installation on Marys Peak, and ideally is local and ODA-certified weed-free sources.**
- **Lay down tarp(s) before depositing temporary gravel piles (on the tarps) to ensure that the gravel can be lifted relatively easily after use, and not become embedded in vegetated areas.**
- **Limit the quantity of gravel brought to the Marys Peak summit for construction purposes, to the extent possible.**
- Ensure that any plant materials used for erosion and sediment control meet or exceed North American Weed Management Association Weed-Free certification standards.
- Leave vegetative strips adjacent to any open trench areas to avoid or minimize erosion and sedimentation.
- Control dust during construction with water or other appropriate control methods, without the use of chemical additives, as needed.
- Clean equipment and vehicles at air or water-wash stations at a location approved by USFS and BLM, including vacuuming vehicle interiors and floorboards, prior to entering Marys Peak Road and as soon as possible after leaving the work area, to minimize the introduction and spread of weeds during construction.
- Arrange for inspection of cleaned equipment by USFS staff prior to entering Marys Peak Road. **The USFS would inspect all equipment prior to entry to verify they have been cleaned and are weed propagule-free. The USFS would deny entry to any equipment that is not deemed clean. This would apply to both the prime contractor and subcontractors.**
- Install boot scrapers at the gate near the bathrooms/paved parking area on Marys Peak, or at the gate on NF-112 at West Point Spur if Alternative 4 is selected, and ensure all construction workers clean boots on the scrapers before entering/leaving work areas to avoid introducing or spreading noxious weeds.
- Restrict construction activities (including trenching work) to the minimum work area needed to work safely and effectively, to limit disturbance of vegetation communities.
- **Begin access road work (including grading and water bar installation) at the top of Marys Peak (near the summit), with work progressing downhill towards the paved parking lot, when feasible.**
- Cut or crush vegetation in areas that would remain vegetated, rather than blading or clearing.
- **During road grading, do not side cast any graded materials; side cast materials must be either compacted on the road surface or removed from the site and disposed of at a USFS-approved upland location.**
- **Remove access road rock that inadvertently lands in areas with native vegetation during the placement of rock and relocate it to the road's surface; the removal of rock would be done with care to avoid further damage to vegetation.**
- Avoid spreading any excavated soils outside the communications site fence. ~~and~~ Inside the fence, utilize uncontaminated native soil as backfill; excess soil beyond the needs of backfill or restoration must be removed and disposed of in a USFS-approved area, or off-site, outside the Marys Peak SBSIA at an appropriate location following all applicable County, State and Federal laws and regulations.
- Stockpile topsoil and subsoil separately in small, low piles for a short period of time, so that it remains biological~~ly~~ active, and avoid mixing subsoil and top soil as much as possible.

- Prohibit the use of heavy equipment in tree cutting areas and cut trees with machinery located on roads or by using chainsaws and other hand equipment.
- Cut trees within microwave beam paths as snags, if possible, and leave woody debris on the forest floor to create diverse habitat.
- Monitor growth of any planted materials until site stabilization is achieved (defined by an appropriate level of cover by native species) and revegetation performance criteria are met; if vegetative cover is inadequate, implement adaptive management and reseed/replant to ensure adequate revegetation.
- Conduct a post-construction noxious weed survey each year for ~~two~~ **five** years after construction, of all areas disturbed by and adjacent to construction activities, to determine if there are new or expanded noxious weed or invasive non-native plant infestations; implement appropriate control measures of noxious weed infestations.

3.5.6 Unavoidable Impacts Remaining after Mitigation

At the BPA Marys Peak site, implementation of Alternative 2A would have temporary impacts on about 0.23 acre and permanently remove about 0.03 acre of moderate-quality grassland that is predominantly composed of native plant species. Because revegetation would occur in these areas, most impacts are anticipated to be temporary, with unavoidable impacts occurring during the lag-time between the on-site losses and achievement of successful restoration of areas disturbed by construction. Indirect impacts could occur, including the degradation of plant communities from erosion and the introduction and spread of weed species. The cutting of about 0.53 acre of high-quality forest that could be habitat to eight species of sensitive fungi species would result in the permanent conversion of forest to grassland. Any impacts on vegetation remaining from construction of Alternative 2A would be **moderate** following the implementation of BMPs and mitigation.

At the BPA Marys Peak site, implementation of Alternative 3C would have temporary impacts on about 0.35 acre and permanently remove about 0.05 acre of moderate-quality grassland that is predominantly composed of native plant species. Because revegetation would occur in these areas, most impacts are anticipated to be temporary, with unavoidable impacts occurring during the lag-time between the on-site losses and achievement of successful restoration of areas disturbed by construction. Indirect impacts could occur, including the degradation of plant communities from erosion and the introduction and spread of weed species. The cutting of about 0.53 acre of high-quality forest that could be habitat to eight sensitive fungi species would result in the permanent conversion of forest to grassland. Removal of the existing BPA communications facility at Marys Peak would initially disturb the predominantly non-native vegetation within the fence, but the area would be revegetated with native vegetation. Any impacts on vegetation remaining from construction of Alternative 3C would be **moderate** following the implementation of BMPs and mitigation.

At West Point Spur, implementation of Alternative 4 would have temporary impacts on about 0.15 acre and permanently remove about 0.01 acre of moderate-quality grassland that is predominantly composed of native plant species. Because revegetation would occur in these areas, most impacts are anticipated to be temporary, with unavoidable adverse impacts occurring during the lag-time between the on-site losses and achievement of successful restoration of areas disturbed by construction. Indirect impacts could occur, including the degradation of plant communities from erosion and the introduction and spread of weed species. Cutting about 0.76 acre of high-quality forest would result in the permanent conversion of mature forest to an early successional stage of forest development.

At the BPA Prospect Hill communications site, temporary impacts on a small amount of low-quality vegetation within the communications site fence would be a **low** impact. Removal of the existing BPA communications building at Marys Peak would initially disturb the predominantly non-native vegetation

within the fence, but the area would be revegetated with native vegetation. Any impacts on vegetation remaining from construction of Alternative 4 would be **moderate** following the implementation of BMPs and mitigation.

Under all alternatives, construction-related ground disturbance could result in noxious weeds colonizing disturbed areas. Due to the difficulty of controlling weeds in disturbed areas, the Project could result in some increases in noxious weeds or non-native plant species within areas disturbed by Project construction.

3.6 Wildlife

3.6.1 Study Area

The wildlife study area includes areas at the Marys Peak communications site, the West Point Spur CPI communications site, the BPA Albany Substation, and the BPA Prospect Hill communications site. The wildlife study area includes areas where wildlife and wildlife habitat could be directly or indirectly impacted by construction activities. The wildlife study area includes the following areas:

- Marys Peak and West Point Spur: 1 mile from communications sites, access roads, staging areas, and tree-cutting areas
- BPA Albany Substation: area within 0.25 mile of the substation's chain link fence
- Prospect Hill Communications Site: area within 0.25 mile of the site's chain link fence

3.6.2 Affected Environment

The Marys Peak study area includes native meadow habitat surrounded by noble fir forest. Snow depth and duration vary annually, but the snow pack generally accumulates in the late fall and does not recede until late spring. The topography and exposure to the elements at Marys Peak stunts the development of deep soils, creating rocky areas with shallow soils on the exposed summits, also known as rock gardens. Talus slopes occur in both forested and open areas with steep terrain. The forest and meadow habitats have steep drainages with swaths of riparian habitat radiating away from the peak. Wildlife that thrive in open, high-elevation meadow habitats and forests with long durations of snowpack use this unique high elevation habitat. Other wildlife species ascend in elevation in the spring, and return to lower elevations in the fall.

The West Point Spur study area is centered on a prominent volcanic ridgeline about 1 mile west of the Marys Peak summit. It is about 500 feet lower in elevation than the Marys Peak summit. The south-facing side of the West Point Spur ridge includes native meadow habitat surrounded by *shrublands* and young, mid-seral, and old-growth forests that provide habitat for a variety of species that prefer meadow, edge, shrub, and canopy habitat. The high elevation of West Point Spur and persistent westerly winds influence the site's precipitation. Similar to Marys Peak, the snow pack typically accumulates in late fall and remains until early spring. Fog layers tend to linger in the mornings, allowing growth of plants on upper canopy branches and providing nesting materials for birds. Steep talus slopes occur in both the forested and open areas. Steep drainages occur with some wetlands associated with ephemeral and perennial creeks.

The BPA Albany Substation study area is an industrial setting containing buildings and transmission equipment within the substation's chain link fence. Inside the fence, the ground's surface is graveled and unvegetated. Due to the lack of foraging areas, nesting trees, and water source within the fence, available wildlife habitat is extremely limited. Mowed non-native grassland surrounds the perimeter of the substation on three sides. To the northeast of the substation, Hazelwood Park includes a stand of Oregon white oak and a maintained lawn. To the southwest of the substation, the Calapooia River flows through a riparian corridor lined with black cottonwoods, big-leaf maple, red alder, and Oregon ash. The riparian area provides wildlife habitat for Willamette Valley species.

The BPA Prospect Hill communications site study area is a rural area with multiple communications sites on a hilltop location rising above the Willamette Valley. Weedy vegetation is scattered within the graveled and compacted area inside the site's chain link fence. Due to the lack of areas for wildlife to forage, the low-quality vegetation, lack of nesting trees, and lack of nearby water sources, available wildlife habitat inside the fenced area is extremely limited. Mowed areas of non-native grasses and shrubs surround the fence. A young orchard and several other communications sites are adjacent to the

BPA communications site. A mixed coniferous forest with vegetation at various heights is located to the north of the BPA communications site, providing some wildlife habitat for Willamette Valley species.

Wildlife Habitat

BPA contracted with Turnstone Environmental to assess wildlife habitat and conduct wildlife species surveys in the wildlife study area. Wildlife habitat types were categorized and ranked by habitat quality. Wildlife habitat quality was classified as:

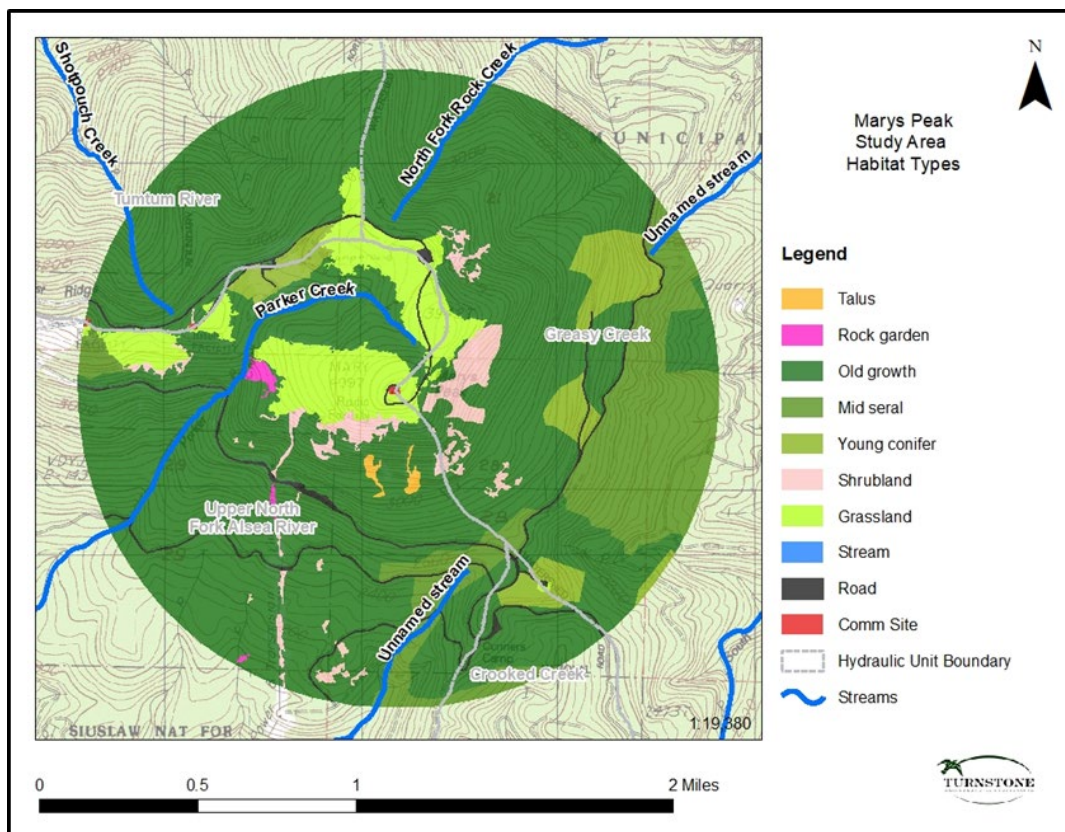
- **High quality** – rare or limited on the landscape, or vegetated predominantly with native species, little or no disturbance, and few or no non-native, invasive plant species
- **Moderate quality** – dominated by non-native plant species but with some native plant species
- **Low quality** – areas with substantial disturbance and dominated by non-native, invasive plant species with few to no native plant species

Field surveys were conducted for special-status (rare) animal species. The list of species surveyed is in Appendix C; a list of species observed during 2018 and 2019 field surveys is in Appendix D.

Wildlife habitat at the BPA Albany Substation and the Prospect Hill communications site are described above. Because of the minimal nature of the proposed work which would only occur inside the fences at these facilities, they are not described in further detail in this section.

Marys Peak

Marys Peak study area habitat assessments were conducted on May 28, June 8, and Aug. 9, 10, 13, and 15 in 2018. Various types of wildlife habitat occur in the Marys Peak study area, as shown in Map 3-1.



Map 3-1. Marys Peak habitat types. (The previous Map 3-1 [from the draft EA] was replaced with this updated Map 3-1 in response to Comment 20-31)

Talus slopes are areas of unconsolidated rock material on steep slopes, usually with sparse vegetative cover (Photograph 3-9). Talus slopes under a forest canopy offer a rich habitat of rock, gravel, and downed woody debris that moderate temperature and moisture in the forest floor, providing choice habitat for amphibians. Talus slopes are high-quality habitats with low levels of disturbance, high native plant species coverage (when coverage is present on rock substrate), low non-native plant species coverage, and are rare on the landscape. Talus slopes are important habitats for salamanders and pika, a small member of the rabbit family (Beever *et al.* 2017). Talus slopes occur on both USFS and BLM land within the Marys Peak study area.

A rock garden is composed of surface rocks or stones, along with plants and extensive moss and lichens covering most of the rock. Rock gardens occur on the southwest slope of the Marys Peak study area (Photograph 3-10). They are exposed to direct hot sunlight and steady westerly breezes in summer, resulting in arid conditions. Winter storms blow away most of the snow, leaving scant snowpack to moisten the ground in spring. Rock gardens are high-quality habitat with high native species coverage, very low non-native coverage, and uniqueness and rarity on the landscape within the Coast Range ecoregion. These sites are important reservoirs of **biodiversity** and provide habitat for a wide variety of plants, fungi, and animals, many of which are not found in forested areas. Rock gardens occur on both USFS and BLM land within the Marys Peak study area.



Photograph 3-9. Talus slope in the Marys Peak study area (May 3, 2018).

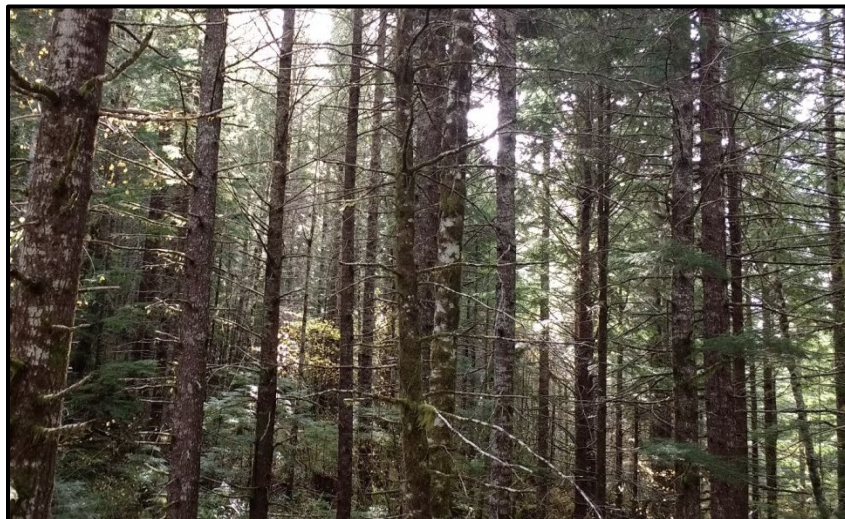


Photograph 3-10. Rock garden in the meadows on Marys Peak (August 13, 2018).

Stands of old-growth coniferous forest (conifers greater than 120 years old) are common throughout the Marys Peak study area (Photograph 3-11). This habitat type is characterized by a canopy of old-growth Douglas-fir, noble fir, and western hemlock trees, typically with a shrubby, open understory. The canopy complexity tends to be high, with many mature trees featuring broken tops and wind shear related deformities, with an accompanying accumulation of large downed wood. At high elevations, unique, pure stands of noble fir occur that have low understory coverage.

Old-growth coniferous forests in the study area are high-quality with high native species diversity, very low cover by non-native vegetation, and an abundance of decadent features (down wood debris, standing snags, cavities, and broken tops). Coniferous forests are commonly inhabited by sooty grouse (*Dendragapus fuliginosus*), barred owl, pileated woodpecker, chestnut-backed chickadee (*Poecile rufescens*), varied thrush (*Ixoreus naevius*), red crossbill (*Loxia curvirostra*), Townsend's chipmunk (*Tamias townsendii*), and Douglas' squirrel (*Tamiasciurus douglasii*). Moist microclimates, such as ephemeral stream watercourses within coniferous forests and decaying trees, offer habitat to amphibians, including northwestern salamander (*Ambystoma gracile*), ensatina (*Ensatina eschscholtzii*),

and western red-backed salamander (*Plethodon vehiculum*) (Corkran and Thoms 1996). Old-growth coniferous forest habitat occurs on USFS, BLM, City of Corvallis, and private lands within the Marys Peak study area.



Photograph 3-11 (left). Old-growth coniferous forest in the Marys Peak Study Area (Aug. 9, 2018).

Photograph 3-12 (right). Mid-seral coniferous forest in the Marys Peak Study Area (Nov. 11, 2018).

The Marys Peak study area includes mid-seral (or second growth) coniferous forest (60- to 120-years old) of Douglas-fir, noble fir, and western hemlock trees (Photograph 3-12), which typically has an open understory with moderate cover of wild huckleberry and sword fern. This habitat type is moderate quality with a fair amount of diversity in native plant species, low abundance of decadent features, low level of disturbance, and low understory coverage. Mid-seral coniferous forests provide feeding, breeding, and shelter areas for many wildlife species, including northern flicker, Steller’s jay (*Cyanocitta stelleri*), gray jay, Roosevelt elk, and black bear (*Ursus americanus*) (Maser *et al.* 1981). Mid-seral coniferous stands occur on USFS, BLM, and City of Corvallis land within the Marys Peak study area.

A few areas in the margins of the Marys Peak study area include young coniferous forest (less than 60 years old) with Douglas-fir, noble fir, and western hemlock trees (Photograph 3-13). The open understory includes wild huckleberry and sword fern. Young coniferous forests are moderate-quality, due to the low diversity in tree species and diameter, lack of decadent features, but high native plant species coverage and low level of disturbance since trees were last harvested. Habitat alterations caused by past timber harvest benefit some species, such as the mountain beaver (*Aplodontia rufa*) that feed on ferns and other plants that rapidly colonize recently-logged stands (Maser *et al.* 1981). Animals that forage on the new growth of regenerating shrubs, such as Roosevelt elk, also benefit from habitat alternation. Young coniferous forests occur on USFS land within the Marys Peak study area.



Photograph 3-13. Young coniferous forest in the Marys Peak Study Area (November 11, 2017).

Shrublands include areas with 25 percent or greater cover of shrubs and no or very low tree cover. They occur as transition areas between forests and open habitats. Tree invasion into shrublands, most

notably by noble fir, is common. A variety of native shrub species occur and cover by herbaceous species is high. Shrublands in the study area are high-quality habitat with a low level of disturbance, high native species coverage and diversity, and very low non-native coverage. Species that could use shrubland habitat in the Marys Peak study area include deer and small mammals, amphibians, and



Photograph 3-14. Grasslands in the Marys Peak study area (Aug 9, 2018).

habitat decreases to low- or moderate-quality along access roads, inside the communications site's fence, and near parking lots and road-side pull-offs, where the soil is compacted and disturbed, with more coverage by non-native plant species.

Grassland habitats are important for pollinators, such as native bumble bees (*Bombus* spp.) and sweat bees (*Agapostemon* spp.). They also provide habitat for small rodent species, such as the brush rabbit (*Sylvilagus bachmani*) and Townsend's vole (*Microtus townsendii*), important prey species for raptors, such as the northern harrier (*Circus hudsonius*), which was observed hunting in the grasslands in the Marys Peak study area (Hafner *et al.* 1998). Snow buntings (*Plectrophenax nivalis*) have also been observed in the open grassland habitat near the Marys Peak summit in the fall according to some bird watchers encountered at the site. Grasslands occur on USFS, BLM, and City of Corvallis lands within the Marys Peak study area.

Parker Creek originates as a spring in the noble fir stand just north of Marys Peak and flows west then southwest to Parker Falls and ultimately to the Upper North Fork Alsea River. The vegetation community of Parker Creek includes Mexican hedgenettle (*Stachys mexicana*), star-shaped miterwort (*Mitella caulenscens*), and small false Solomon's seal (*Maianthemum stellatum*).

Invertebrate species, such as the Haddock's rhyacophilan caddisfly (*Rhyacophila haddocki*) and the black petaltail dragonfly (*Tanypteryx hageni*), populate the aquatic habitat in the subalpine reaches above the falls of Parker Creek. Haddock's caddisfly is regionally endemic to the Coast Range and occurs in the riparian vegetation along Parker Creek during flight season from May through August.

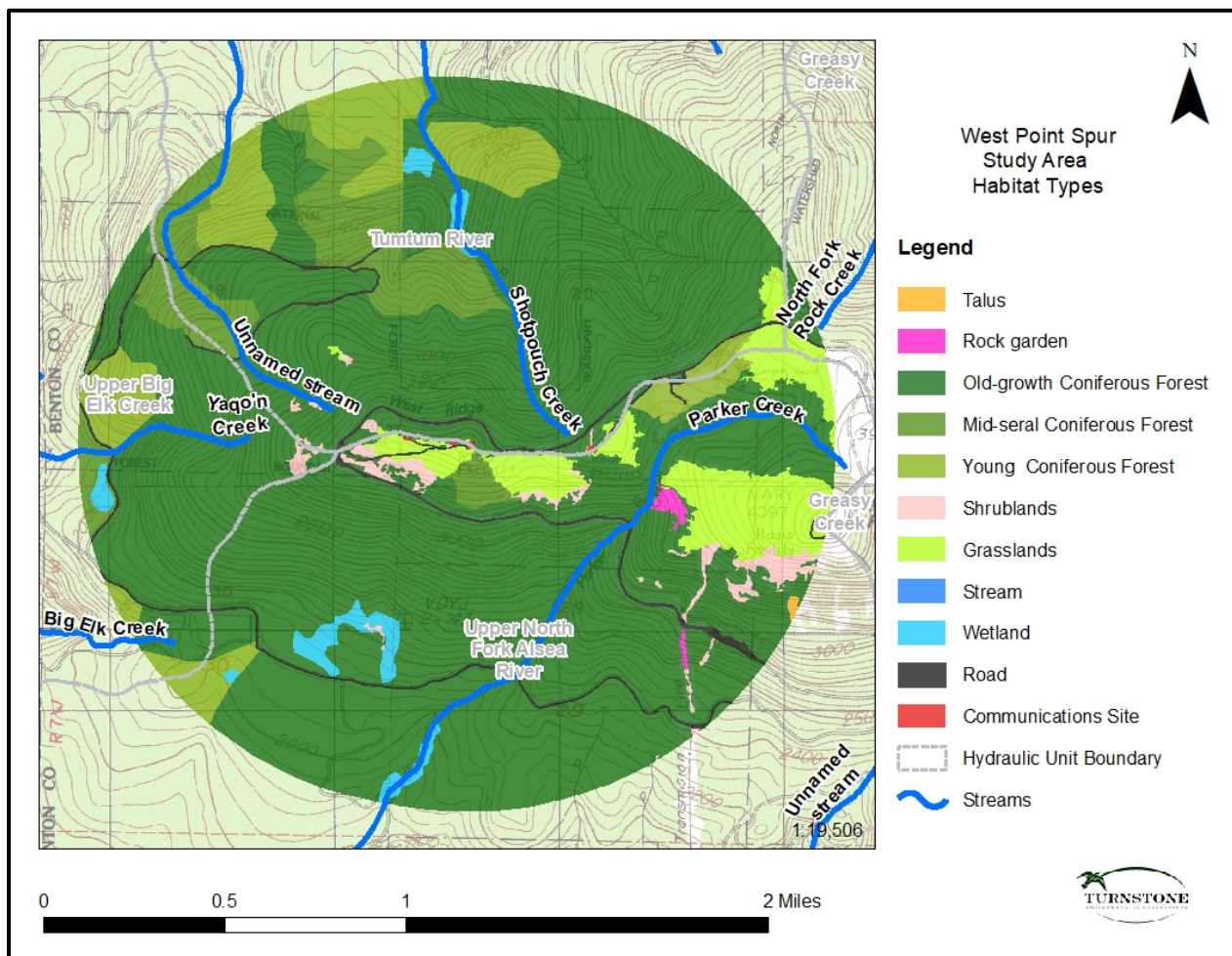
North Fork Rock Creek flows northeast from the steep north-facing slope of Marys Peak in the Greasy Creek basin, which drains to the Middle Marys River in Philomath. Other small streams and unnamed creeks occur in the wildlife study area, as shown in Map 3-1.

Disturbed habitats are present within the Marys Peak study area, particularly in and along roads where there is little to no cover by vegetation to provide habitat for wildlife species. The industrial communications sites in the Marys Peak study area are highly disturbed; the vegetation is regularly

maintained and the fenced area prevents access by some wildlife species. Vegetation primarily consists of non-native species, providing low-quality habitat.

West Point Spur

West Point Spur habitat assessments were conducted on May 3, 4, and 28, June 8, and Aug. 10 and 15 of 2018. Habitat types include coniferous forests of various ages, grasslands, and special habitats, including wetlands, talus slopes, and seeps and springs (Map 3-2). Many of the West Point Spur habitat types are the same as those that occur on Marys Peak, described above.



Map 3-2. West Point Spur habitat types. (The previous Map 3-2 [from the draft EA] was replaced with this updated Map 3-2 in response to Comment 20-31)

Forested talus slopes within the West Point Spur study area consist of accumulations of loose, coarse, angular rock debris. Talus slopes are high-quality habitats with low levels of disturbance and high native plant species coverage. Talus slopes occur on both USFS and BLM land.

Some of the rock gardens in the West Point Spur study area are the same rock gardens as described in the Marys Peak study area.

Old growth coniferous forest is common throughout the West Point Spur study area, consisting of Douglas-fir, western hemlock, and noble fir, with a shrubby, open understory of native shrubs and sword fern. The forest includes patches of standing snags and accumulations of large-diameter down wood. Old growth coniferous forests are high-quality habitats with herbaceous, shrub, tree and canopy layers, high diversity of native species, low coverage of non-native vegetation, very low levels of disturbance,

and high abundance of decadent features, such as large down wood, standing snags, tree cavities, and broken tops (USFS 1993). Old growth coniferous forests occur on USFS, BLM, City of Corvallis, and private lands.

The West Point Spur study area includes mid-seral (or second-growth) coniferous forest that are young-to-mature (60- to 120-years old), dominated by Douglas-fir with noble fir, and western hemlock. These forests are generally closed-canopy forests, with an open understory of native shrubs and sword fern (Turnstone 2019). They are moderate-quality habitat with modest diversity in native plant species, low non-native species coverage, low abundance of decadent features, low level of disturbance, and low understory coverage. This habitat type occurs on USFS, BLM, City of Corvallis, and private lands.

The West Point Spur study area also includes stands of young coniferous forest, or smaller conifers in a young, regenerating forest. Young coniferous forest is moderate-quality habitat, due to the low diversity in tree species and relatively small size diameter at breast height (DBH), lack of decadent features, ubiquitous distribution, but high native plant species coverage and low level of disturbance since trees were last harvested. Young forests occur on USFS and BLM lands.

Within the West Point Spur study area, shrublands occur along the meadow and forest edges and in small gaps in the forest. They are high-quality habitat with a low level of disturbance, high native species coverage and diversity, and very low non-native coverage. Shrublands occur on USFS, BLM, and City of Corvallis lands.

Grasslands, large meadows dominated by native plants, occur in the West Point Spur study area. Meadows are interspersed between stands of old-growth forest and other habitat types. Grasslands are key habitat features for native pollinators, and large ungulate species, such as black-tailed deer (*Odocoileus hemionus*) and Roosevelt elk, and small rodent species, such as brush rabbit. Grasslands are high-quality habitat with low disturbance and non-native vegetation coverage. However, the quality of the habitat decreases to low- or moderate quality closer to the access roads and communications sites, where there is compacted soil and moderate human activity, which increases cover by non-native plant species. Grasslands occur on USFS and City of Corvallis lands.

The headwaters of Yaqo'n Creek are in the steep, forested, western slopes of the West Point Spur study area in the Upper Big Elk Creek drainage basin. Yaqo'n Creek flows for 8,095 feet to the mainstem of Upper Big Elk Creek, a tributary to the Yaquina River. Shotpouch Creek flows north from the West Point Spur in the Tumtum River drainage basin. Other small streams and unnamed creeks occur in the wildlife study area, as shown in Map 3-2.

Several **wetlands** occur on USFS and BLM lands within the West Point Spur study area. Field visits were not conducted to assess wetland habitat because they would not be affected by the Project, but it is likely this wetland habitat is high quality based on the unaltered wetland boundaries and large extent of each wetland. Large, unaltered wetlands provide important habitat to wildlife, including birds, amphibians, and invertebrates.



Photograph 3-15. *Small spring in the West Point Spur study area (May 3, 2018).*

One small spring was observed in the West Point Spur study area, covering less than 0.1 acre (Photograph 3-15). This spring is high-quality habitat with a low level of disturbance, high native plant species coverage, low non-native plant species coverage, and it is unique within the study area. Springs and seeps provide important sources of moisture and wetland plants for certain wildlife, such as amphibians.

Disturbed habitats that occur within and along the roads and parking areas on USFS, BLM, and City of Corvallis land within the West Point Spur study area provide low-quality habitat. Wildlife is sparse in these areas. The communications sites within the West Point Spur study area are low-quality habitat with moderate invasive, non-native plant coverage, and high disturbance levels, all located on City of Corvallis land.

Special-status Animal Species

The list of special-status animal species considered for this Project (see Appendix C) was compiled using the following sources:

- Animal species identified for protection under the federal Endangered Species Act (16 U.S.C. 1531 et seq.), including listed endangered, listed threatened, species proposed for listing, and **candidate species** (USFWS 2015, 2016, 2017, 2019, 2020)
- Federal Species of Concern and Birds of Conservation Concern (USFWS 2015, 2016, 2017, 2019, 2020)
- Animal species identified for protection under the Oregon Endangered Species Act as endangered, threatened, and sensitive (ORS 496.012)
- SNF and BLM Northwest Oregon District Sensitive animal species
- SNF Management Indicator species
- Forest Plan Survey and Manage species
- Rare animal species tracked by the Oregon Biodiversity Information Center (ORBIC 2018)
- USFWS, SNF, and BLM wildlife biologists

Information on each wildlife species was obtained from reputable biological resources, primarily NatureServe (NatureServe 2017-2019). The potential for each species to occur in the wildlife study area was based on their known habitats and known occurrences within 5 miles of Project components. Biologists conducted surveys for special-status species at Marys Peak and West Point Spur. For special-status birds and mammals, biologists looked within 0.25 mile of proposed construction and tree-cutting areas. For invertebrates, biologists looked within 100 feet of proposed construction and tree-cutting areas due to the limited mobility of most invertebrates.

Federal and State Endangered Species Act

Of the species on the federal and state ESA lists for Benton, Marion and Linn counties (USFWS 2015, 2016, 2017, 2019, 2020), only two federally threatened and state-threatened bird species have the potential to occur in the Marys Peak and West Point Spur portions of the study area: the marbled

murrelet (*Brachyramphus marmoratus*) and the northern spotted owl (*Strix occidentalis caurina*). As of the fall of 2019, the red tree vole (*Arborimus longicaudus*) was an ESA candidate species with the potential to occur in the study area, but was not state listed. As of July 2020, the North Oregon Coast Population of the red tree vole species was lowered from a Candidate species to a federal Species of Concern; however, it is still not state listed.

The following federally-listed threatened or endangered species for Benton, Marion and/or Linn counties (USFWS 2015, 2016, 2017, 2019, 2020) do not have the potential to occur in the study area: The streaked horned lark (*Eremophila alpestris strigata*), the yellow-billed cuckoo (*Coccyzus americanus*), and the Fender's blue butterfly (*Icaricia icarioides fenderi*).

Marbled Murrelet – There are no known occurrences of the federally threatened and state-threatened marbled murrelet within 1 mile of the Marys Peak or West Point Spur portions of the study area (ORBIC 2018). To determine if marbled murrelet occur in the study area, field surveys were conducted using a USFWS-accepted survey protocol in potentially suitable habitat within 0.25 mile of construction activities (disturbance area) at both Marys Peak and West Point Spur. Five visits to each of nine survey block sites were made at dawn to watch for the marbled murrelet, in both 2018 and 2019, but marbled murrelets were not observed (Turnstone 2019).

Marbled murrelet designated critical habitat (DCH) under the federal ESA occurs in the Marys Peak and the West Point Spur study areas. Marbled murrelet DCH occurs on all the USFS land in the study area. Marbled murrelet DCH does not occur on lands managed by the BLM or the City of Corvallis within the study area, including tree-cutting areas. Project work areas within marbled murrelet DCH include:

- Marys Peak: Marys Peak communications site, staging areas, and the USFS portion of the unpaved access road
- West Point Spur: The USFS portion of the unpaved access road

The DCH for the marbled murrelet uses the term Primary Constituent Element. The new critical habitat regulations (USFWS and NOAA 2016: 81 FR 7214) replace this term with Physical or Biological Features (PBFs). This shift in terminology does not change the approach used in conducting the analysis on DCH, whether the original designation identified Primary Constituent Elements, Physical or Biological Features, or essential features.

There are two PBFs that apply to marbled murrelet DCH. The first PBF is defined as forested stands with trees, generally greater than 32 inches in diameter, that have potential nesting platforms at least 33 feet above the forest floor. The second PBF is defined as the surrounding forest, within 0.5 mile of the above-mentioned stand, which must have a canopy height of at least one-half the site-potential tree height. Project work areas within marbled murrelet DCH at Marys Peak and West Point Spur do not include forested areas and therefore do not meet the description of the two PBFs. All proposed tree-cutting areas are not within marbled murrelet DCH (Turnstone 2019).

Northern Spotted Owl – There are three known occurrences of the federally threatened and state-threatened northern spotted owl within the Marys Peak and West Point Spur study areas (ORBIC 2018). Two are about 1.5 miles and 0.6 mile from the Marys Peak communications site, while the third is about 1.1 miles from the West Point Spur CPI communications site.

The USFWS defines the northern spotted owl disruption distance as the area within 65 yards of a noise source that could cause birds to be distracted to such an extent as to disrupt normal behavior and create the likelihood of harm or loss of reproduction (USFWS 2016). The known northern spotted owl sites in the study area are located well beyond the 65-yard disruption distance from construction work areas and noise sources (Turnstone 2019).

USFWS determined that field surveys to detect the northern spotted owl in the Marys Peak study area were not necessary because any northern spotted owls present would only be temporarily dispersing through the area or temporarily foraging in the habitat and would not be resident nesting birds.

At West Point Spur, the USFWS determined that field surveys were needed for the northern spotted owl because there is a possibility of suitable nesting habitat near construction areas. Northern spotted owl surveys were conducted within 0.25-mile of construction areas due to possible disturbance and disruption of nesting birds. In 2018 and 2019, northern spotted owl surveys consisted of six visits made to each survey site. Surveyors followed a USFWS-accepted survey protocol which requires them to play broadcasts of the calls made by the northern spotted owls, who then respond if present. Northern spotted owls were not observed during these surveys (Turnstone 2019). Northern spotted owl spot-check surveys were also conducted in 2020 *and 2021* following the methods outlined in the same USFWS-accepted survey protocol. No northern spotted owls were observed in 2020 *or 2021* (Turnstone 2020; *Turnstone unpublished data*). Follow up surveys are planned for each year until construction activities begin.

Northern spotted owl DCH occurs in the Marys Peak and the West Point Spur portion of the study area, including some USFS lands and all BLM lands. It does not occur on the USFS portion of the access road leading from Marys Peak Road to the CPI communications site, or lands managed by the City of Corvallis in the study area, including the tree-cutting area at West Point Spur. The only Project work area within northern spotted owl DCH is the BLM tree-cutting area at Marys Peak.

The PBFs of northern spotted owl DCH are the specific characteristics that make forested habitat areas suitable for nesting, roosting, foraging and dispersal (USFWS 2012, pp 71,906-71,908). The PBFs include: 1) forest types in early-, mid-, or late-seral stages that support 2) nesting and roosting, 3) foraging, and/or 4) transience and colonization phases of dispersal (73 Fed. Reg. 47326).

Red Tree Vole – The red tree vole (*Arborimus longicaudus*) is currently a federal Species of Concern and a former ESA Candidate species. The north Oregon coast Distinct Population Segment of the red tree vole was not warranted for threatened or endangered listing [84 FR 69707]). The red tree vole is also an Oregon Conservation Strategy species. Red tree voles are restricted to conifer forests due to its exclusive diet of conifer needles. Red tree voles show a strong selection for and tend to be more abundant in older forest, principally inhabiting Douglas-fir trees. Nests are most often found in larger-diameter trees and home ranges are less than 0.9 acre in size (USFS/BLM 2000). The BLM tree-cutting area in the Marys Peak study area is not suitable red tree vole habitat because it only consists of noble fir.

At West Point Spur, the tree cutting area was considered to have the potential to support red tree vole because of the presence of Douglas-fir trees. In 2019, surveys were performed to look for potential red tree vole nests at West Point Spur, but none were observed. Based on the lack of nests, it is assumed that the red tree vole is not present.

USFS and BLM Special-status Species

USFS SNF and BLM Northwest Oregon District Sensitive Species

There are 21 species that are listed as Sensitive for the USFS SNF, and 44 BLM Northwest Oregon District species that could occur in the study area, including the western bumblebee (*Bombus occidentalis occidentalis*). Only two are likely to occur in the study area that occur on both the SNF's and BLM's lists (Appendix C). They are the purple martin (*Progne subis*) and the red tree vole. There are also two invertebrate species; however, they are only found on the BLM's State Director's Sensitive species list and not on the USFS Regional Forester's list. None of the four sensitive species were observed at Marys Peak or West Point Spur (Turnstone 2019).

The purple martin is a USFS SNF and BLM Sensitive bird species (Appendix C) that could occur in the study area. It nests in tree cavities, nesting boxes, or crevices in manmade structures; it is uncommon in Oregon, but was reported in 1977 by USFS as being a rare summer resident of Marys Peak (ORBIC 2018). This species forages over open water, fields, or forest canopy habitats, often near water; winters in South America (Turnstone 2019).

The red tree vole is the one mammal species that is listed as USFS SNF and BLM Sensitive that could occur in the study area, but was not detected during 2019 surveys and is assumed not present (Appendix C). See the *Federal and State Endangered Species Act* section above for additional details about the red tree vole and its suitable habitat.

The two invertebrate species that are listed as BLM Sensitive species that could occur in the study area, although a low likelihood, are the Suckley cuckoo bumble bee (*Bombus suckleyi*) and the Siskiyou short-horned grasshopper (*Chloeaaltis aspasma*). One species flies while the other flies for short distances or hops. As such, the area inhabited by the grasshopper invertebrate species could be relatively small, while for bumble bees, it could be relatively large since they could travel throughout the study area and beyond.

Forest Plan Survey and Manage Species

Three species of Northwest Forest Plan (USFS and BLM) Survey and Manage species were considered likely to occur within the Marys Peak and West Point Spur study areas (Appendix C). The great gray owl (*Strix nebulosa*) and the red tree vole are Category A species, and the keeled jumping-slug is a Category D species. A great gray owl was detected in the West Point Spur study area on City of Corvallis land. The great gray owl forages in meadows and other openings, primarily preying on rodent species, such as voles and pocket gophers. It nests in old-growth conifer forests or in younger forests with older remnant trees or snags that are located near (within 0.25 mile of) foraging habitat. This species does not regularly occur in Benton County or the Coast Range and is not known to be nesting in the study area (ORBIC 2018). Due to the high mobility of this species, it is expected that the great gray owl would only temporarily use the forested habitat in the study area for dispersal or foraging.

Surveys were conducted for the red tree vole in the West Point Spur tree-cutting area but there was no evidence of red tree voles or their nests. See the *Federal and State Endangered Species Act* section above for additional details about the red tree vole and its suitable habitat.

The keeled jumping-slug (*Hemphillia burringtoni*) is a small forest-dwelling slug that inhabits moist coniferous forests with abundant downed wood, and ground cover of low vegetation, litter, and debris (USFS/BLM 2015). The nearest documented occurrence of what is thought to be a keeled jumping-slug was about 1.4 miles from the Marys Peak communications site (ORBIC 2018). There is some discussion about the differentiation between species that are similar to the keeled jumping-slug. There is unpublished data relating to the current understanding of their distribution, but USFS and BLM biologists state there is only a very small possibility they would occur in the study areas, which are outside of their known range in Washington and at the upper margin of their elevation range. This slug species was not observed at Marys Peak or West Point Spur (Turnstone 2019).

USFS Management Indicator Species

Ten USFS Management Indicator Species (MIS) were considered likely to occur within the Marys Peak and West Point Spur study areas (Appendix C). One of the MIS species is a mammal and nine are birds. Five USFS MIS were observed (or signs of their presence observed) during Project wildlife surveys at either Marys Peak or West Point Spur. The following MIS species were observed at both Marys Peak and West Point Spur: northern flicker, red-breasted nuthatch, and the pileated woodpecker. The hairy woodpecker was only observed in the Marys Peak study area. Additionally, signs of Roosevelt elk presence were observed at both Marys Peak and West Point Spur. The four MIS bird species observed within the study area are cavity-nesting species associated with coniferous and mixed conifer-hardwood

forests that breed between March and July. Suitable habitat for these species occurs in the study area, and it is likely that they occur year-round.

During wildlife surveys, biologists observed Roosevelt elk tree rubs and scat in the forest, shrublands, and grasslands habitat throughout the Marys Peak and West Point Spur study areas. The Roosevelt elk has a high likelihood of occurring year-round in forest and meadow habitat within the Marys Peak and West Point Spur study areas on USFS, BLM and City of Corvallis lands.

Other Special-status Species

Most birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918. The MBTA implements various treaties and conventions between the U.S. and other countries, for the protection of migratory birds (16 USC 703–712, July 3, 1918, as amended in 1936, 1960, 1968, 1969, 1974, 1978, 1986, 1989). Under the act, taking, killing, or possessing migratory birds, or their eggs or nests, is unlawful. The act classifies most species of birds as migratory. More information on the MBTA is in Chapter 4 of this EA.

Birds of Conservation Concern include birds that, while not ***federally listed***, are identified by the USFWS as conservation priority species. Birds of Conservation Concern include some non-MBTA-protected species, such as the Oregon vesper sparrow (*Pooecetes gramineus affinis*). The bald eagle (*Haliaeetus leucocephalus*) is protected under the Bald and Golden Eagle Protection Act. Five Birds of Conservation Concern and the bald eagle were considered as having the potential to occur at the Marys Peak and West Point Spur study areas, but only the olive-sided flycatcher was observed. The olive-sided flycatcher is also a federal Species of Concern.

3.6.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications facility would not be rebuilt and impacts related to Project construction would not occur. Operations and maintenance activities would continue at the BPA Marys Peak and the BPA Prospect Hill communications sites and would be similar to existing practices. Temporary and infrequent maintenance activities at the BPA Marys Peak communications site would result in **no** impacts on federally-listed or state-listed wildlife species and **low** impacts on other wildlife species in the vicinity, including other special-status species. Because potential impacts resulting from emergency repairs at Marys Peak would be localized impacts on a small amount of low- to moderate-quality grassland habitat within the fenced communications site or along the access road, impacts on wildlife habitat would be **low**.

At the BPA Prospect Hill communications site, temporary and infrequent maintenance activities would result in **no** impacts on federally-listed or state-listed wildlife species and **low** impacts on other wildlife species in the vicinity, including other special-status species. Because potential impacts resulting from emergency repairs at the BPA Prospect Hill communications site would be localized impacts on a small amount of low-quality habitat within the fenced communications site, impacts on wildlife habitat would be **low**.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future.

3.6.4 Environmental Consequences – Action Alternatives

This section describes the potential impacts of implementing any of the action alternatives on wildlife habitats, including designated critical habitat, and on wildlife species, including special-status species. Impacts on wildlife and wildlife habitat would be direct or indirect, and temporary or permanent.

Impacts Common to All Action Alternatives

Direct impacts on wildlife and wildlife habitat would be limited to the immediate Project work areas. The crushing or clearing of vegetation and soil disturbance would remove a small amount of wildlife habitat or degrade the existing quality of habitat used for foraging, nesting, roosting, or burrowing by mammals, birds, reptiles or invertebrates. The use of heavy construction equipment would remove and/or compact soils, which could have a long-term effect on the growth of native plant species. Areas where the soil would be disturbed by construction activities and equipment could function as a “seed bed” for invasive plant species, thus reducing the quality of native habitat for wildlife. Weed propagules could blow into the construction site, be transported by wildlife, or be transported to the site on construction vehicles, equipment, clothing, or boots.

Direct impacts on wildlife could include incidental mortality. Mortality could occur from collisions with vehicles or equipment, although this would be unlikely given the mobility of wildlife and the vehicle speed restrictions that would be imposed on unpaved access roads. Birds and bats are generally adept at avoiding stationary structures, and bats would not be present during the day when vehicles and equipment are operating. Incidental mortality could also occur during use of equipment to excavate soil or if wildlife falls into holes excavated during construction. Overall, the threat of incidental mortality to most species would be limited to the duration of construction and within those small areas where ground disturbance would occur or vehicles would travel.

Indirect impacts on wildlife or wildlife habitat could occur beyond the actual work areas or they could arise after construction activities are completed. Indirect impacts include erosion and the introduction of sediments to undisturbed areas near construction work areas and the temporary reduction of local prey species. Another potential indirect impact could be the degradation of habitat quality from the spread of non-native and weedy plant species from areas disturbed by construction into adjacent undisturbed areas. BMPs would be implemented to help prevent erosion and the introduction of new weed species and the spread of existing weed species.

Impacts on wildlife species and habitat could be temporary or permanent. Temporary impacts on wildlife could be short term or long term, depending on the severity of the impact. Temporary impacts that would disturb wildlife habitat but not prevent the reestablishment of habitat similar to the preconstruction conditions would be considered short-term impacts. Long-term, temporary impacts could occur when medium- or high-quality native plant communities or forested areas are disturbed because of the length of time required to successfully restore these habitats.

During access road improvements, temporary construction noise and human activity would result in disturbance of and possibly short-term displacement of wildlife. Available habitat loss would extend beyond the ground disturbance area and at varying distances, depending on the type of activity and the wildlife species that could be affected. The increase in human activity during the breeding season would be expected to have low short-term impacts on wildlife because species would only temporarily avoid the construction work areas. However, moderate short-term impacts on bird and mammal wildlife species could result from increased noise levels and human activity during their breeding season (March through August), if these activities reduce the foraging effectiveness of adults or causes adults to abandon nest sites, thus leading to mortality in their young. Habitat quality could also be temporarily reduced in the short term when wildlife in the construction area experiences nuisance noise, to the point that it causes an increase in stress, but not to a level of fleeing or avoiding the construction area.

Permanent impacts would result in the modification of a wildlife habitat to the extent that it would not return to preconstruction conditions during the life of the Project. Permanent impacts on wildlife habitat would occur in areas where trees are cut or grassland habitat is removed to construct a building addition, steel-lattice structure, or the rock apron at the edge of an access road.

Climate change will likely necessitate that wildlife survive under new climatic conditions (USFS n.d.). In general, climate change will likely contribute to changes in the distribution, abundance, and behavior of wildlife species and habitat over the next century in response to increasing temperatures, changing precipitation and disturbance regimes, and from injuries to wildlife as a result of extreme weather events. Rising temperatures and increased summer drought would be expected to stress animals and potentially increase the incidence of wildfires. Climate change could enable the expansion of invasive plant species, degrading wildlife habitat.

Wildlife habitat that would be temporarily impacted by the Project would be revegetated following construction. The Project is not expected to result in ongoing changes to the abundance of plant and animal prey, the availability of shelter that serves as thermal refugia, availability of habitat, or barriers to movement. Although it could take up to five years for vegetation to become reestablished in areas disturbed by construction, climate change would not substantially alter the vegetation within that timeframe.

Areas where wildlife habitat would be permanently impacted by Project construction could be affected by climate change. Areas where the ground surface would be covered with impervious surfaces would not be exposed or vulnerable to climate change. Wildlife habitat permanently impacted in other areas, such as in rock aprons adjacent to water bars and areas where trees would be removed for the beam path, would remain vulnerable to the effects of climate change and impacts could be intensified if the vegetation does not become established enough to resist invasion by non-native plants.

Maintenance and operation of the communications site would not involve ongoing disturbance to wildlife except for occasional visits for maintenance and some tree topping or removal to maintain the beam path. Therefore, climate change would have the potential to further increase the Project's impact on wildlife in a small areas along the access road and in beam path areas, totaling less than 1 acre regardless of chosen action alternative.

Because the scope of construction work and the types of habitat that could be affected varies for each action alternative, each alternative would have different impacts on wildlife. Discussion of the potential impacts specific to each action alternative are presented below. Construction disturbance area estimates for each action alternative are in Table 3-1 of this EA.

Impacts Specific to Action Alternatives

Alternative 2A

Marys Peak

At Marys Peak, improvements to BPA facilities inside the fence and along the access road would result in direct impacts on a small amount of grassland habitat. Vegetation would be crushed or removed by construction activities inside the fence. Installation of the rocky drainage "apron" at the edge of eight water bars would require clearing of existing vegetation, grading, and compacting soils; and adding new fill material and installing a 10-foot-by-10-foot permanent and more sparsely vegetated rock-lined drainage apron on the downhill slope. The apron would be constructed with enough rock to slow runoff from the road, but would leave enough space to allow vegetation to grow through the apron itself, eventually obscuring the rock and providing some vegetation for wildlife species to utilize. Work inside the fence and the installation of water bars would result in the temporary disturbance of 0.23 acre of

low- to moderate-quality grassland habitat and the permanent removal of 0.03 acre of low- to moderate-quality grassland habitat.

Both the temporary and permanent loss of this small amount of low- to moderate-quality habitat would have **no** impact on federally-listed and state-listed wildlife species because they do not occur in the study area. Temporary and permanent loss of this habitat would not be expected to have a detrimental effect on other special-status wildlife species or general wildlife species. The availability of large tracts of high-quality grassland in the vicinity of the existing communications site and access road make it unlikely that the loss of foraging and nesting habitat would have a detrimental effect on wildlife populations. Because the small areas impacted would be mostly revegetated with native species and permanent removal of habitat would occur in a small area, temporary and permanent impacts on special-status species (that are not federally or state-listed), and general wildlife species from habitat loss would be **low**.

Birds or bats could collide with the new 40-foot tall steel-lattice structure with a 20-foot tall whip antenna and a new 6-foot microwave dish. Eagles, herons, and vultures have been identified as bird types that may have a higher susceptibility for collision with power lines, as they have large wing spans, heavy bodies, and generally poor maneuverability (APLIC 2012). While the steel-lattice structure and microwave dish would be visible to these birds at a great distance during clear weather, the narrow-diameter, white, 20-foot tall vertical whip antenna at the top of the structure may be less visible to birds until at a closer distance, thereby increasing risk for collision. Eagles and herons are not likely to occur near the study area, but other bird species, such as the vulture, could be present. Resident birds are likely acclimated to avoiding the existing communications equipment at the summit, so would likely avoid the new structure and equipment as well. The level of impacts from bird collisions, including special-status bird species that are not federally or state-listed, is unknown but would likely be **low** given the small size of the facility and whip antenna and the high visibility of the new structure with a large microwave dish. **No** impacts would occur on federally or state-listed bird species from collisions with the steel-lattice structure or equipment.

Indirect impacts could occur to wildlife habitat outside the fence. Temporary construction noise and human activity would result in **low** impacts due to displacement of non-federally listed or state-listed special-status and general wildlife species and **moderate** impacts if it resulted in nest abandonment. **No** impacts would occur to federally- or state-listed species. Any erosion that was not controlled could result in sheet erosion, degrading plant communities and habitat outside the fence. If hikers create new trails because of access limitations during construction, this would result in the degradation of wildlife habitat. Exclusion fencing and signage would be installed to help prevent entry into the rock garden area. Overall, there would be **low** impacts on special-status species that are not federally or state-listed and other general wildlife species from temporary displacement or degradation of habitat.

Construction could result in the introduction or spread of non-native species, including noxious weeds that are already present inside the fenced communications sites. To prevent or minimize the likelihood of noxious weed introduction and spread, BMPs would be implemented to help prevent the introduction of new weed species and the spread of existing weed species, resulting in **moderate** impacts on wildlife habitat from potential weed spread.

Up to 14 noble firs in high-quality forest habitat would be cut on BLM land. To protect soils, trees would be cut with chainsaws, without bringing in heavy equipment or log trucks. Tree cutting would result in **no** impacts on federally and state-listed wildlife species. It would not be expected to result in the injury or death of other special-status species that are not federally or state-listed and other general wildlife species because tree cutting would take place outside of the bird nesting season, if possible. Also, wildlife would likely leave the work area when workers arrive to perform the tree cutting. In the future, wildlife species would be expected to use the surrounding non-affected forested areas for foraging and

nesting. Increased noise could cause wildlife to avoid the area during tree cutting, which would only take a couple of days. The permanent cutting of up to 14 noble firs within 0.53 acre of high-quality forest habitat would be a **low** impact given the amount of adjacent high-quality forested habitat.

BPA Albany Substation

At the BPA Albany Substation, a 6-foot diameter microwave dish would be installed on the existing steel-lattice structure. Project activities would have **no** impact on wildlife habitat or on federally and state-listed wildlife species because they do not occur in the study area. Other special-status species of birds and bats, or general bird and bat species could collide with the structure; however, the addition of new communications equipment would make it more visible to wildlife and resident birds that are likely used to avoiding the existing steel-lattice structure. The level of impact due to bird and bat collisions is unknown, but would likely be **low** given the small size of the facility and the visibility of the structure and its equipment.

Construction at the BPA Albany Substation would increase noise levels in an urban setting with different types of noise present during the day. On the east side of the substation, where the existing communications steel-lattice structure is located, a busy street and a residential area contribute to the noise levels. Any resident wildlife species present in the urban setting are habituated to human presence and noises from human activities. The adjacent natural habitats, including the riparian corridor along the Calapooia River and the city park, are far enough away from work areas that construction noise levels would decrease with the distance. Because of the short-term and minor extent of the proposed work and the proximity to existing urban noise levels, there would be **no** impacts on federally listed, state-listed or other special-status species, or on other general wildlife species from displacement or loss of habitat quality at the BPA Albany Substation.

Alternative 3C

Marys Peak

Activities inside the fenced area at the Marys Peak communications site and access road improvements would result in direct impacts on wildlife habitat. The level and types of impacts on wildlife species and wildlife habitat under Alternative 3C would be similar to those described under Alternative 2A, but the impacts would cover a larger area. Work inside the fence (including the removal of the BPA communications site and constructing a new building addition at the USFS facility), and the installation of eight water bars would result in the temporary disturbance of 0.35 acre of low- to moderate-quality grassland habitat and the permanent removal of 0.05 acre of low- to moderate-quality grassland habitat. Because disturbed areas would be revegetated with native species, including the current BPA communications site, temporary and permanent impacts on wildlife due to habitat loss would be **low**.

Birds or bats could collide with the new 60-foot tall steel-lattice structure with a 20-foot tall whip antenna and a 6-foot microwave dish mounted to the structure. However, because of the presence of other existing steel-lattice structures on the summit, wildlife and resident birds are likely used to avoiding the existing steel-lattice structures. The level of impacts from bird collisions is unknown, but would likely be **low** given the small size of the facility and visibility of the replacement structure and its equipment. **No** impacts would occur to federally and state-listed bird species because they do not occur in the study area, but would likely be **low** for other special-status species of birds and bat, or general bird and bat species, for collision risk.

The same indirect impacts on wildlife would occur under Alternative 3C as under Alternative 2A, from displacement of wildlife due to increased noise and human presence during construction, from potential erosion and sedimentation, from habitat degradation, and from potential weed introduction or spread. As described under Alternative 2A, these impacts would be **low** on special-status species (that are not federally or state-listed), and general wildlife species, depending on the efficacy of BMPs and mitigation measures. **No** impacts would occur to federally and state-listed wildlife species.

Construction could result in the introduction or spread of non-native species, including noxious weeds that are already present inside the fenced communications sites. To prevent or minimize the likelihood of noxious weed introduction and spread, BMPs would be implemented to help prevent the introduction of new weed species and the spread of existing weed species, resulting in **moderate** impacts on wildlife habitat from potential weed spread.

The same stand of noble fir trees would be cut under Alternative 3C as under Alternative 2A, resulting in **low** impacts on wildlife habitat given the amount of adjacent high-quality forested habitat.

Alternative 3C would require removal of the existing BPA communications facility at the summit. The BPA building and associated equipment would be removed from the site and it would be restored with native vegetation. Because this area receives many human visitors, this would have a **low** beneficial effect on wildlife.

BPA Albany Substation

At the BPA Albany Substation, there would be **no** impacts to wildlife habitat because it does not occur in the study area, and **low** impacts to non-ESA listed bird and bat species due to potential collisions with the new antenna. **No** impacts to federally or state-listed species due to collision or displacement or habitat loss, and **no** impact on other special-status species, or on other general wildlife species from wildlife displacement or habitat loss, as explained under Alternative 2A.

Alternative 4

West Point Spur

At West Point Spur, work within the CPI communications site fence and the installation of water bars in the access road would result in the temporary disturbance of 0.15 acre of low- to moderate-quality grassland habitat and the permanent removal of 0.012 acre of low- to moderate-quality grassland habitat. The temporary and permanent loss of this small amount of low- to moderate-quality wildlife habitat would not be expected to have a detrimental effect on local wildlife resources. The availability of higher quality grassland in the vicinity of the communications site make it unlikely that the loss of foraging and nesting habitat would have a detrimental effect on wildlife populations. Although wildlife would be displaced, it would not be likely to result in their injury or death. Because the relatively small areas impacted would mostly be revegetated with native species and permanent removal of habitat would be small, both temporary and permanent impacts on non-ESA listed wildlife from habitat loss would be **low**.

A 10-foot diameter microwave dish would be added to the existing steel-lattice structure. Birds or bats could collide with the new equipment, although the number of dishes currently on the structure makes it quite visible and resident birds are likely used to avoiding the steel-lattice structure. The level of impacts from bird collisions is unknown, but it would likely be **low** given the small size of the facility and visibility of the structure and its equipment. **No** impacts would occur to federally and state-listed bird species because they do not occur in the study area, but would likely be **low** for other special-status species of birds and bat, or general bird and bat species, due to collision risk.

Indirect impacts on wildlife and wildlife habitat outside the CPI communications site fence could occur. Temporary construction noise and human activity would result in **low** impacts due to displacement of special-status and general wildlife species and **moderate** impacts if it resulted in nest abandonment. Because there would only be a small amount of ground disturbance and BMPs would be used to control erosion, there would be **low** impacts on special-status and general wildlife species and habitat from erosion and habitat degradation.

Construction could result in the introduction or spread of non-native species, including noxious weeds that are already present. To prevent or minimize the likelihood of noxious weed introduction and

spread, BMPs would be implemented to help prevent the introduction of new weed species and the spread of existing weed species, resulting in **moderate** impacts on wildlife habitat from weed spread.

Up to 20 conifers in high-quality old-growth forest habitat would be cut. To protect soils, trees would be cut by workers walking into the forest and using a chain saw, without using heavy logging equipment. Tree cutting would result in **no** impacts on federally and state-listed wildlife species, and would not be expected to endanger wildlife or result in injury or death of other special-status species and general wildlife species because tree cutting would take place outside of the bird nesting season, if possible. Also, wildlife would likely leave the work area when workers arrive to perform the tree cutting. In the future, wildlife species would be expected to use surrounding non-affected forested areas for foraging and nesting. Permanent cutting of up to 20 conifers within 0.76 acre of high-quality old-growth forest would be a **low** impact on special-status species that are not federally or state-listed, general wildlife species and wildlife habitat given the amount of adjacent high-quality forested habitat.

Prospect Hill

At the Prospect Hill communications site, equipment would be added to an existing steel-lattice structure. The area inside the fence functions only minimally as wildlife habitat. Because all work at Prospect Hill would be inside the fence in a graveled, weedy area, there would be **no** impacts on wildlife habitat. Birds or bats could collide with the new 10-foot diameter microwave dish, although the number of dishes currently on the structure already make it quite visible and resident birds are likely used to avoiding the existing communications equipment. The level of impacts from bird and bat collisions is unknown, but would likely be **low** given the small size of the facility and visibility of the structure and its equipment. **No** impacts would occur to federally and state-listed bird species because they do not occur in the study area. The level of impacts would likely be **low** on other special-status species of birds and bats, and general bird and bat species, for collision risk.

Construction at the Prospect Hill communications site would increase noise levels for a few days. Wildlife in the adjacent forested habitat could be temporarily displaced by construction noise levels, which would decrease with distance. The availability of open and forested habitat adjacent to the communications site makes it unlikely that the temporary loss of foraging habitat and ground-nesting habitat for birds, mammals, and reptiles near the fence would have a detrimental effect on wildlife populations. Although wildlife could be temporarily displaced, it would not likely result in their injury or death. **No** impacts would occur on federally and state-listed species because they do not occur in the study area. There would be **no** impacts on non-ESA listed species from displacement or loss of habitat or degraded habitat quality because of the temporary and minor extent of work, and lack of general wildlife species potentially displaced resulting from noise and human activity or loss of habitat.

Marys Peak

Removal of the BPA communications site on Marys Peak would result in direct and potentially indirect impacts on wildlife habitat from erosion. Demolition work inside the fence would initially disturb about 0.14 acre around the BPA building, a temporary **low** impact on habitat. Grading of the site could further disturb vegetation. However, most of the site would be revegetated, converting a site with predominantly non-native vegetation to a site with native vegetation, which would have a **low** beneficial effect on wildlife habitat. **No** impacts would occur on federally and state-listed wildlife species because they do not occur in the study area.

Potential Impacts on Wildlife on Public Lands

BPA is coordinating with USFS, BLM, and the City of Corvallis on potential Project impacts on wildlife and wildlife habitat on their lands. This section summarizes the potential impacts on wildlife and wildlife habitat under each alternative, by affected public landowner. There would be no privately-owned lands affected by this Project other than some parcels at a distance from work areas that could be subject to some low levels of noise from Project activities.

BLM

Wildlife habitat on BLM lands would be impacted under Alternative 2A and Alternative 3C. The improvement of three water bars would result in permanent impacts on less than 0.01 acre and temporary impacts on 0.03 acre of low- to moderate-quality grassland habitat. The cutting of up to 14 noble firs within 0.53-acre of high-quality forest would result in temporary habitat impacts. Overall, impacts on wildlife habitat on BLM land under either Alternative 2A or Alternative 3C would be **low** due to the conversion to different habitat types and the small number of trees that would be cut within the larger stand.

USFS

Under all alternatives, low- and moderate-quality grassland habitat on USFS lands would be directly impacted. Impacts on wildlife habitat from water bar installations and communications site improvements would be similar under both Alternative 2A (0.2 acre temporary impacts and 0.02 acre permanent impacts) and Alternative 3C (0.32 acre temporary impacts and 0.04 acre permanent impacts).

The availability of higher quality meadow habitat adjacent to work areas makes it unlikely that the loss of a small amount of foraging habitat and ground-nesting habitat for birds, mammals, and reptiles would have a detrimental effect on wildlife populations. Although wildlife could be temporarily displaced, it would not likely result in their injury or death. Because of the temporary nature of the work and the small area affected, impacts on wildlife on USFS land under either Alternative 2A or Alternative 3C would likely be **low** from displacement or loss of habitat quality resulting from noise and human activity.

Under Alternative 4, removal of the existing BPA Marys Peak communications building would temporarily impact wildlife due to noise and human activity. Three water bars would be installed in the USFS portion of the access road, resulting in 0.03 acre temporary impacts and 0.01 acre permanent impacts on wildlife habitat. Because much of the site would be revegetated with native species, the overall impact on USFS land would be **low**.

BPA

Under Alternative 2A and 3C, the only BPA land where wildlife habitat could be impacted is the BPA Albany Substation. Because there is very low-quality habitat inside the fence, any wildlife disturbance would largely come from construction noise and human activity, resulting in **no to low** impacts.

Under Alternative 4, the only BPA land where wildlife habitat could be impacted is the BPA Prospect Hill communications site. Because there is very low-quality habitat inside the fence, any wildlife disturbance would largely come from construction noise and human activity, resulting in **no to low** impacts.

City of Corvallis

Wildlife and wildlife habitat on City of Corvallis lands would be impacted under Alternative 4. Construction, including the installation of two new water bars in the access road, would result in temporary impacts on 0.1 acre and permanent impacts on 0.01 acre of moderate-quality grassland habitat. Because the relatively small areas impacted would be revegetated with native species and permanent removal of habitat would be small, both temporary and permanent impacts on wildlife habitat from habitat loss would be **low**. Permanent cutting of up to 20 conifers within 0.76 acre of high-quality old-growth forest would be a **low** impact on habitat because adjacent similar habitat would remain in the area.

Potential Impacts on Special-Status Wildlife Species

Federally-listed and State-listed Wildlife Species

Because no observations of marbled murrelet were detected during the two years of field surveys in 2018 and 2019, it is assumed that they are currently not nesting in the study area, more specifically in the Marys Peak and West Point Spur portions of the study area. Project work areas within marbled murrelet critical habitat (DCH) include the Marys Peak communications site, related staging areas, the USFS portion of the unpaved access road at Marys Peak, and the USFS portion of the unpaved access road at West Point Spur. Because trees within marbled murrelet DCH would not be affected by Project activities in any portion of study area (Marys Peak or West Point Spur), and none of the species was detected, there would be **no** impacts on marbled murrelet or their DCH from Project activities at Marys Peak and West Point Spur. At the BPA Albany Substation and Prospect Hill, no suitable marbled murrelet habitat occurs; therefore there would be **no** impacts on the marbled murrelet from Project activities at these two sites.

Because no observations of northern spotted owl were detected during the three years of field surveys between 2018 and 2020, it is assumed that they are currently not nesting, roosting or foraging in the study area, more specifically in the Marys Peak and West Point Spur portions of the study area. Project work areas within northern spotted owl DCH include the tree-cutting area on BLM lands at Marys Peak. The BLM noble fir forested habitat in the Marys Peak portion of the study area where tree cutting would occur is considered dispersal habitat, and does not meet the criteria for nesting, roosting or foraging habitat PBFs. There is no DCH for northern spotted owl at West Point Spur, BPA Albany Substation or Prospect Hill. Therefore, there would be **no** impacts on the northern spotted owl as a result of any action alternative.

One federal Species of Concern (formerly a Candidate species), the red tree vole, was surveyed for but not detected within 200 feet of the tree-cutting area at West Point Spur. Because of the current lack of red tree vole detections at West Point Spur, including no nests observed, lack of suitable habitat within 200 feet of the tree-cutting area on BLM land in the Marys Peak portion of the study area, and no suitable habitat in the BPA Albany Substation and Prospect Hill portions of the study area, there would be **no** impacts on red tree voles from any action alternative.

USFS and BLM Special-Status Species

Of the species that are listed as either Sensitive for the USFS SNF or BLM Northwest Oregon District, four species have the potential to be impacted by project activities (Appendix C). They include one bird species, one mammal species and two invertebrate species; potential impacts are discussed below by wildlife group.

Birds

Project activities under all action alternatives would have similar impacts on the Sensitive purple martin bird species, if present in the study area. This bird species is highly mobile and, if present in the construction area, it could temporarily leave the work area or nearby areas where construction noise may disturb them. The proposed tree-cutting activities for all alternatives would not be performed during the nesting season, so nest abandonment would not occur, should a nest be in the trees. If the purple martin has a nest in a tree that is proposed to be cut, there is similar forested habitat nearby where the bird could establish a new nest.

Foraging opportunities for this bird species would only be temporarily impacted by construction activities associated with all alternatives because prey species (e.g., invertebrates) would likely return to the work area upon project completion.

Noises from construction equipment usage under all alternatives, and building or steel-lattice structure construction or building demolition, may also temporarily flush the Sensitive purple martin species from the study area, but they would likely return upon completion of Project activities.

Impacts on this bird species is expected to be **low**, because only a small number of trees (associated with any action alternative) would be cut outside the nesting season, and there is nesting and foraging habitat nearby.

Mammals

The red tree vole, was surveyed for but not detected within 200 feet of the tree-cutting area at West Point Spur. Red tree vole habitat does not occur in the Marys Peak study area. Because red tree vole are not present in construction work areas, there would be **no** impacts on this species from Project activities associated with Alternative 2A and 3C.

Invertebrates

Impacts on the two invertebrates likely to occur in the study area would be similar under all action alternatives. Direct mortality could result from Project activities that disturb soil and vegetation or from collisions with construction equipment and vehicles. Because vehicle speeds on access roads would be limited to less than 10 miles per hour, winged insects should be able to move out of the way of vehicles.

Impacts on the two BLM Sensitive invertebrate species are expected to be **low** under all action alternatives because these species will likely be able to avoid construction equipment and any incidental mortality would likely be low.

Forest Plan Survey and Manage Species

As noted above in the Affected Environment (Section 3.6.2) for USFS and BLM Survey and Manage Species, the great gray owl was detected during wildlife surveys at West Point Spur on City of Corvallis lands. Potential Project impacts on the great gray owl are unknown, but they would likely be **low** because although trees that the species could use would be cut (under all action alternatives), the habitat would be converted to different available habitat types that could still be used by the species for foraging.

The red tree vole is a Survey and Manage species. There would be **no** impacts on the red tree vole as a result of Project activities associated with Alternative 4, as discussed above in the *USFS and BLM Special-Status Species* section.

Per USFS and BLM biologists, there is only a very small possibility that the keeled jumping-slug would occur in the study area, which is outside of their known range. It is expected that there would be **no to low** impacts on the keeled jumping-slug as a result of project activities associated with all alternatives.

SNF Management Indicator Species (MIS)

The four MIS bird species observed within the study area (Appendix D) are cavity-nesting species associated with coniferous and mixed conifer-hardwood forests. Trees would not be cut on SNF lands under any of the action alternatives and tree cutting on nearby BLM or City of Corvallis lands would not occur during breeding season; resulting in **no** direct impacts on these species under any action alternative.

If present near construction work areas, these MIS bird species could be displaced due to the increase in noise and human presence. However, they would likely return to USFS forested habitat after construction. Foraging opportunities could be temporarily reduced due to the noise disturbance, but this is not likely to raise levels of stress or reduce reproduction success. Impacts on these species would likely be **low** under any action alternative, because the displacement would be temporary.

Project activities associated with any of the action alternatives would have similar impacts on elk. The increase in human presence and general construction noise could temporarily deter elk from using the study area. However, elk are highly mobile and migratory, and the frequent human presence at the Marys Peak site due to high visitation means it is likely that the elk herd already avoids much of the Marys Peak and West Point Spur portions of the study area. Risk of elk mortality or severe stress due to Project activities is virtually none. Impacts on elk from Project activities would be **low**, because any displacement under any action alternative in the study area would be temporary and foraging opportunities would not be reduced.

Other Special-status Species

Many bird species protected under the MBTA are present within the study area, and some undoubtedly nest in the forested habitat immediately adjacent to, and potentially within, the trees to be cut. Because trees would be cut outside the nesting season, impacts on these species would be minimized. BPA would further reduce impacts on bird species by implementing mitigation measures, such as cutting trees as snags wherever possible and leaving woody debris on the forest floor. Impacts on any MBTA species would be **low** under all alternatives because only a small amount of habitat would be removed or degraded and tree cutting would be timed to avoid nesting season.

There are two Birds of Conservation Concern that have the potential to occur in the study area, the western screech-owl (*Megascops kennicottii kennicottii*) and the rufous hummingbird (*Selasphorus rufus*). They are assumed to be present in the forest habitat within Marys Peak and West Point Spur study areas due to presence of suitable nesting and foraging habitat. Potential impacts on these species under any of the action alternatives are the same as the impacts on other birds, as described above in *USFS and BLM Special-Status Species* section. Impacts would be **low** under any action alternative, due to the small number of trees that would be cut outside the nesting season and the availability of nesting and foraging habitat nearby.

Because suitable habitat for bald and golden eagles does not occur in the Marys Peak and West Point Spur study areas, there would be **no** impacts on eagle species from any action alternative.

3.6.5 Mitigation Measures –Action Alternatives

If one of the action alternatives is implemented, BPA would implement construction BMPs and mitigation measures to avoid or minimize impacts from the Project on wildlife. BPA is coordinating with public land managers to ensure that wildlife-related BMPs and mitigation measures are consistent with their policies. Other mitigation measures relevant to avoiding or minimizing impacts on wildlife habitat are in Section 3.4.4 (Vegetation Mitigation Measures) of this EA. The following measures would be implemented:

- Explain wildlife-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Identify active bird nests in construction work areas prior to conducting construction during the breeding season (March 1 to August 15) and clearly mark active nests for avoidance by construction equipment and personnel, if possible, or BPA would obtain the appropriate permits from USFWS if the nest could not be avoided.
- Limit vehicle speeds on unpaved roads and surfaces to 10 miles per hour or less to avoid collisions with wildlife.
- Prohibit the use of heavy equipment in tree-cutting areas and cut trees with machinery located on roads or by using chainsaws and other hand equipment.
- Cut trees within microwave beam paths as snags, if possible, and leave woody debris on the forest floor to create diverse habitat.

- Cut trees between August 15 and March 1 to avoid the typical nesting period for birds.
- Ensure workers do not leave food or garbage out that would attract wildlife.
- Cover construction holes outside of fenced areas that would be left open overnight.
- Keep cranes in the “down” position when left onsite overnight to reduce potential for avian or bat collisions.
- Allow areas where trees are cut within the Marys Peak SBSIA to revert to natural non-forested habitat.

3.6.6 Unavoidable Impacts Remaining After Mitigation

While mitigation measures would help avoid or minimize impacts, some potential impacts on wildlife could not be avoided. Work on access roads and inside the fences of Project components would result in the temporary loss or degradation of less than 0.35 acre of low- to moderate-quality grassland habitat, but after mitigation measures to restore vegetation, permanent habitat loss would be much smaller, ranging from 0.01 to 0.05 acre. Construction activities could also temporarily disturb and displace wildlife, but would be unlikely to result in permanent injury or mortality. However, all of the action alternatives would require cutting a small number of trees within less than 0.76 acre of high-quality forested habitat, a permanent impact. Overall, impacts on wildlife and wildlife habitat remaining from construction of any action alternative would be **low** following the implementation of BMPs and mitigation.

3.7 Visual Quality

3.7.1 Study Area

In this section the visual environment is referred to as scenic resources. The scenic resources study area for the Marys Peak and West Point Spur components was defined as the area within 15 miles of the existing Marys Peak and West Point Spur communications sites, and within 3 miles of the BPA Albany Substation. The study area ranges from close views of Project components to the approximate distance where a viewer can no longer see Project components because they are too far away to be perceived.

The portion of the scenic resources study area for the BPA Albany Substation and BPA Prospect Hill communications site extends about 3 miles from the existing steel-lattice communications structures located at these components. This is the greatest distance from which the new microwave dishes would likely be evident to a viewer due to screening of views by existing vegetation. Beyond about 3 miles, buildings or vegetation screen most views of the communications structure at the BPA Albany Substation.

The following terms are used in this section to describe the distance from a particular viewer location:

- Immediate foreground: 0 feet to 300 feet
- Foreground: 300 feet to 0.5 miles
- Middle ground: 0.5 miles to 4 miles
- Background: 4 miles to horizon

Visual Management Framework

Lands administered by three public agencies could be affected by the Project within the scenic resources study area, including those of USFS, BLM, and the City of Corvallis. Because action alternatives would primarily affect scenic resources on lands administered by USFS, their visual management framework guided the scenic resource analysis for this Project.

USFS Visual Management System

The USFS manages scenic resources through the Visual Management System (VMS) established in *The National Forest Management Handbook, Volume 2, Agricultural Handbook 462* (USFS 1974) to inventory, classify, and manage lands for scenic resource values. Scenic resources are managed through Visual Quality Objectives (VQOs) designed to provide measurable standards or objectives that direct varying degrees of acceptable change to national forest landscapes (USFS 1974). The range of VQOs is defined as follows:

- **Preservation (P):** Allows ecological changes only, and management activities are prohibited except for very low visual impact recreation facilities.
- **Retention (R):** Provides for management activities that are not visually evident, and activities may only repeat form, line color, and texture frequently found in the characteristic landscape; changes in qualities of size, amount, intensity, direction, pattern, etc. should not be evident.
- **Partial Retention (PR):** Management activities remain visually subordinate to the characteristic landscape and activities may repeat form, line, color, or texture common to the characteristic landscapes, but changes in qualities of size, amount, intensity, direction, pattern, etc. should remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, or textures that are found infrequently or not at all in the characteristic landscape, but they should remain subordinate to the visual strength of the characteristic landscape.

- **Modification (M):** Management activities may visually dominate the original characteristic landscape but activities of vegetative and landform alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that visual characteristics are those of natural occurrences within the surrounding area or character type.
- **Maximum Modification (MM):** Management activities of vegetative and land alterations may dominate the characteristic landscape. When viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed as foreground or middle ground, they may not appear to completely borrow from naturally established form, line, color, or texture. Alterations may also be out of scale or contain detail that is incongruent with natural occurrences as seen in foreground or middle ground.

The Marys Peak SBSIA Plan specifies that, with the exception of facilities needed to provide the desired recreation use and electronics facilities, the Marys Peak SBSIA is managed to meet the VQO of “Retention” (USFS 1989). The plan indicates that through:

...creative design of location, materials, forms, colors, and textures, necessary recreation and electronic facilities will be kept as inconspicuous as possible, and will meet the VQO of retention where practicable, but in no case being more dominant than the VQO of modification. Partial retention-foreground and partial retention-middleground VQOs are applied along the Marys Peak Road. (USFS 1989)

The SBSIA Plan includes additional detail on use of Marys Peak and West Ridge (also known as West Point Spur) for special uses, stating:

Special Use Permits may be issued when the activity is compatible with the management goals for the SBSIA. Use of Forest Service land on the summit of Marys Peak for electronic communications will be limited to government and public service agencies. The electronic equipment will be consolidated into a single structure to reduce visual impacts.

Siuslaw National Forest LRMP

The SNF LRMP (USFS 1990) specifies management of Marys Peak road (viewshed) as Partial Retention-Foreground and Middleground-Modification.

USFS scenic resource management guidelines evolved into the Scenery Management System (SMS) (USFS 1995). This system increases the role of the public and is integrated with the concepts of ecosystem management. Instead of management objectives prescribed as VQOs, they are established as Scenic Integrity Objectives (SIOs). For example, a VQO of partial retention correlates to an SIO of moderate (M), defined as: “Valued landscape character appears slightly altered. Noticeable deviations remain visually subordinate to the landscape character” (USFS 1995).

Despite this update, the USFS land management standards pertinent to this Project remain those established in SBSIA Plan and SNF LRMP as defined by the VMS. However, to address the more contemporary themes of the SMS, the analysis evaluated potential impacts to scenic quality using the guiding principles of that management framework.

Bureau of Land Management

Visual resources on BLM-administered lands are managed using the Visual Resource Management (VRM) System, which classifies BLM lands into four VRM classes (BLM 1986) ranging from Class I-IV. BLM lands on Marys Peak (adjacent to the SBSIA) are managed using VRM Class IV, which allows major modification of the existing landscape character that minimizes visual impacts on the extent possible (BLM 2016).

City of Corvallis

Under Alternative 4, most of the Project lands at West Point Spur are managed by the City of Corvallis. Management direction for the SBSIA does not cover lands owned by the City of Corvallis. USFS and the City of Corvallis have a cooperative agreement to correlate the management of City land with national forest land near the summit of Marys Peak (USFS 1989). The City confers with USFS prior to acting on lease applications in an effort to avoid management conflicts.

3.7.2 Affected Environment

The scenic resources that currently exist in the study area were evaluated following procedures established in the USFS Scenery Management System (AECOM 2019). Key Viewing Areas (KVAs) were established to represent common or sensitive views within four land use categories: the Marys Peak SBSIA, Willamette Valley residential communities with views of Marys Peak, selected locations in the Coast Range with views of Marys Peak, and areas with views of the BPA Albany Substation (Table 3-3, Map ~~3-3~~ 3-1). KVAs were not established for the BPA Prospect Hill communications site, as explained below.

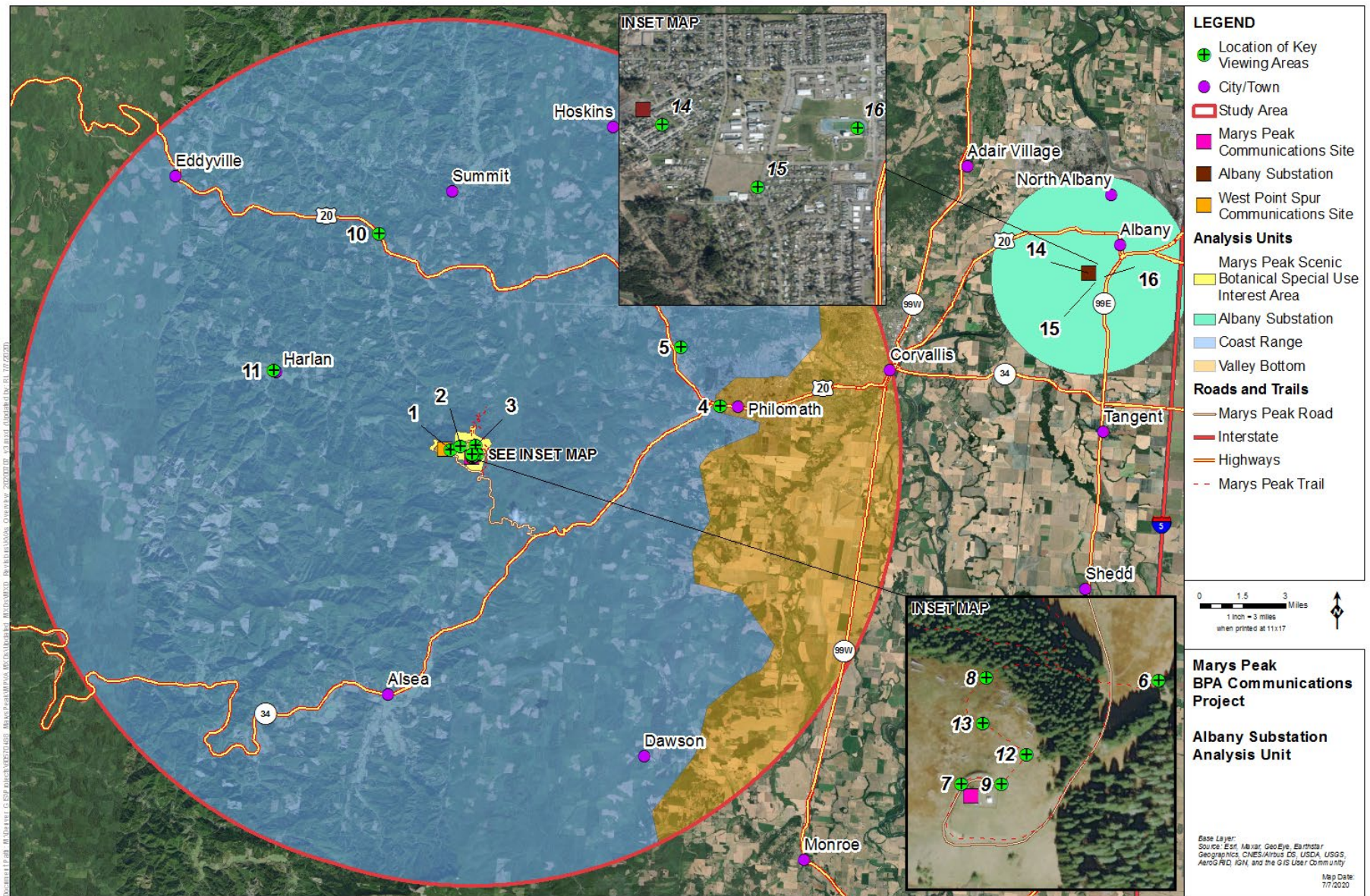
Existing visual resources were described using the following terminology (USFS 1995; BLM 1986):

- **Landscape characteristics** are described in terms of existing form, line, color, and texture, with consideration of landscape factors such as contrast, sequence, axis, convergence, co-dominance, scale, and framing of landscape.
- **Viewer context** describes the predominant activity the viewer is engaged in, how that activity influences how they experience the landscape, and the viewer's spatial relationship to the Project.
- **Viewer concern level** describes the importance of scenic quality and aesthetic experience to viewer groups. Information used to assess viewer concern include Project scoping comments, relevant planning documents, and general assumptions regarding the level of expected viewer sensitivity based on viewer type. Concern levels are classified as high, medium, or low depending on the viewer's concern over change in the landscape character or scenic integrity.
- **Scenic integrity** refers to the degree to which a landscape is free from visible disturbances that detract from the natural or socially valued appearance. Scenic integrity is evaluated using a continuum scale ranging from very high to unacceptably low, by measuring the degree of alteration in line, form, color, and texture from natural or natural appearing landscape character.

Table 3-3. Key Viewing Areas

KVA Number	Location	Land Use Category
1	Marys Peak Road at Saddle Meadow Pullout	Marys Peak SBSIA
2	Marys Peak Campground Site #2	Marys Peak SBSIA
3	Public Parking Area at Marys Peak Road	Marys Peak SBSIA
4	City of Philomath	Valley bottom (Residential Community)
5	Wren Hill	Coast Range (Residential Community)
6	Summit Trail (Lower Portion)	Marys Peak SBSIA
7	Marys Peak Access Road (View Directed West)	Marys Peak SBSIA
8	Lower Meadowedge Trail	Marys Peak SBSIA
9	Picnic Table at Marys Peak Summit	Marys Peak SBSIA
10	Highway 20 near Elmaker State Park	Coast Range (Highway)
11	Community of Harlan	Coast Range (Residential Community)
12	Summit Trail (Upper Portion) Intersection Marys Peak Summit Trail and Meadowedge Trail	Marys Peak SBSIA
13	Upper Meadowedge Trail	Marys Peak SBSIA
14	Orchard Lane (for BPA Albany Substation)	BPA Albany Substation (Residential Community)
15	West Albany High School (for BPA Albany Substation)	BPA Albany Substation (Albany School)
16	Liberty Street (for BPA Albany Substation)	BPA Albany Substation (Roadway)

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Map 3-3 3-4. Locations of Key Viewing Areas.

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The following sections present the affected environment in each of the four KVA land-use categories: the Marys Peak SBSIA, Willamette Valley residential communities with views of Marys Peak, selected locations in the Coast Range with views of Marys Peak, and areas with views of the BPA Albany Substation. The affected environment within the BPA Prospect Hill communications site study area is also discussed.

Marys Peak Scenic Botanical Special Interest Area

Marys Peak is a prominent landform in the central Willamette Valley. The area is natural appearing, consistent with vegetation communities found within the Coast Range. The large meadows on and near the summit appear prominent and contrast with the surrounding dense conifer forests. The open meadows provide for expansive views that extend toward the Pacific Ocean to the west and Cascade Mountains to the east.

Besides open meadows and dense forests, several notable landscape attributes exist within the Marys Peak SBSIA, including rocky slopes with wildflowers, steep slopes, broad panoramic views, and recreation and communications infrastructure. These attributes create varied landscape character types, and foster a sense of distinct “outdoor rooms” as one passes through them. Because of the dense forest vegetation and steep topography, views are generally limited to the immediate foreground or middleground, with the exception of the broad panoramic views from the summit that extend into and beyond the background distance zone.

Landscape character at Marys Peak varies from natural evolving to a built environment, depending on viewer position within the Marys Peak SBSIA and exposure to the communications facilities. This variability in character and quality of the landscape is a defining attribute of the Marys Peak SBSIA and results in varied viewer experiences that include the natural landscape in the foreground and middleground, expansive panoramic views from the summit, and site-specific industrial development.

Viewers associated with the Marys Peak SBSIA include recreational users and tourists, educational groups, residents, and roadway travelers. Viewers engage in hiking, camping, wildflower viewing, parasailing, enjoying panoramic views, and seeking spiritual renewal. Viewer experience varies depending on position within or movement through the Marys Peak SBSIA. Viewers likely have a high level of concern for potential change to scenic resources because most people visit Marys Peak to access unobstructed views and expect to traverse a natural appearing landscape. Overall, scenic integrity at the Marys Peak SBSIA is moderate to high. Although discordant elements exist, the landscape appears intact, with a level of naturalness that is unique within the surrounding area.

Marys Peak Road at Saddle Meadow Pullout – KVA 1

Because most of Marys Peak Road travels through dense forest, Saddle Meadow pullout provides the first opportunity for visitors to stop and engage in prolonged, unobstructed views of the Marys Peak summit (Photograph 3-16). The landscape is characterized by an upland meadow, sloping to the south, bordered by mixed conifer forests in the foreground. Marys Peak creates a discrete, rounded skyline. The existing USFS communications structures are silhouetted against the sky, appearing grey and silver in color and smooth in texture, with distinct vertical lines that contrast with the coarser textures and colors of the meadow. Other communications site facilities are shorter in stature, and appear broad in form and white in color. The fence around the facility is evident, but not a dominant feature.

The scenic integrity is low to moderate because, although the landscape character is naturally appearing, the existing communications facilities are co-dominant with the valued landscape character.



Photograph 3-16. View of the Marys Peak summit from Marys Peak Road at Saddle Meadow pullout (KVA 1), looking east-southeast.

Marys Peak Campground – KVA 2

At Marys Peak Campground, Campsite #2 has a distant view of the summit of Marys Peak (Photograph 3-17). The landscape is characterized by the dense stand of conifers which appears uniform and creates a sense of enclosure. Views are limited to the immediate foreground and the shallow slope of the campground is juxtaposed against the steeper slopes of Mary Peak. The camping facilities introduce curvilinear lines (campground road) and geometric forms (sign posts and restroom).

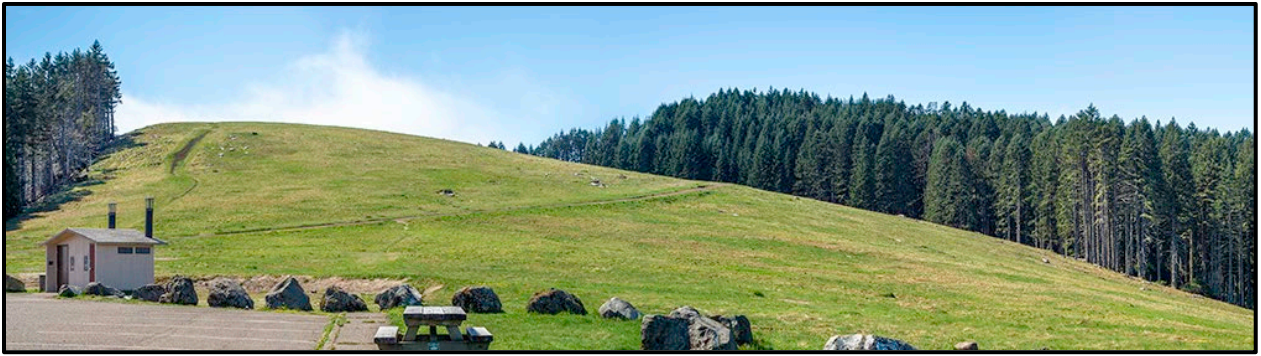


Photograph 3-17. View from the Marys Peak Campground (KVA 2), looking southeast.

The USFS communications structure on Marys Peak appears silhouetted through the trees but it is subordinate to the dense forest in the foreground and middleground. The scenic integrity of the landscape is medium because, although the campsite facilities and road are evident, they are visually subordinate to the surrounding forest and, although the USFS communications structure can be seen through the dense forest canopy from some locations within the campground, it is not focal to the view.

Public Parking Area off Marys Peak Road – KVA 3

From the public parking area there is a view toward the summit of Marys Peak (Photograph 3-18). The parking lot and associated viewpoint provide the first opportunity for visitors to experience views from Marys Peak and serves as a gateway for their recreational experience. The landscape is characterized by the juxtaposition of a broad sloping meadow enclosed by surrounding coniferous forest and, to the east, by the broad panoramic view of the Willamette Valley and Cascade Mountains. The summit of Marys Peak is screened by dense conifers. The access road and recreation facilities are evident, but do not dominate the landscape. Viewers at this location are expected to engage in prolonged views to the east and more intermittent views of Marys Peak.

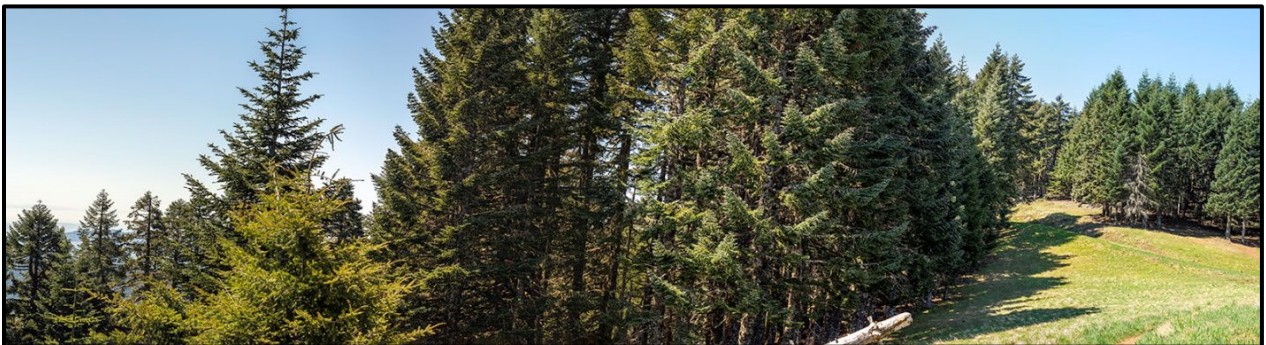


Photograph 3-18. View from the public parking area off Marys Peak Road (KVA 3), looking southwest.

The parking lot is broad and rectilinear, with grey asphalt appearing rough in texture. The facilities appear geometric, but small in scale, such that the straight lines and smooth texture remain subordinate to the surrounding landscape. The top portion of the existing USFS communications structures can be seen above the forest stand and are apparent in the skyline. The scenic integrity of this KVA is high because, although recreational facilities are evident looking to the southwest, the landscape character of Marys Peak appears natural.

Lower Portion of the Summit Trail – KVA 6

The Summit Trail leads from the public parking lot to the Marys Peak summit (Photograph 3-19). The landscape is characterized by the green and brown colors of the sloping meadow hillside and the adjacent coniferous forest, which frames the landscape, creating a sense of enclosure. Viewers hiking along the trail pass through open meadows and dense forest, with views ranging from enclosed to panoramic. Views of Mary Peak are intermittent until the trail reaches the summit, although viewers may experience more prolonged views of the summit at vistas along the trails.



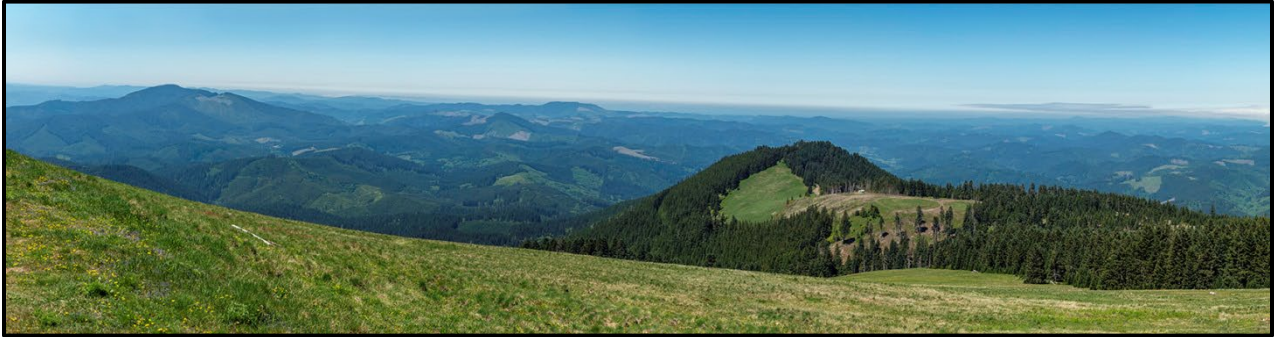
Photograph 3-19. View from the lower portion of the Summit Trail (KVA 6), looking southwest.

From the lower portion of the trail, existing communications structures at the Marys Peak summit are screened by existing forested vegetation and are not visible. The scenic integrity is high because although the unpaved access road and recreational trails to Marys Peak are evident, they do not detract from the natural appearance of the landscape.

Marys Peak Summit Access Road/View Directed West – KVA 7

At the summit of Marys Peak, the view to the west includes the West Point Spur communications site and beyond (Photograph 3-20). The landscape is characterized by the sloping open meadows in the foreground and middleground, with expansive Coast Range panoramic views to the Pacific Ocean. Views from this location are assumed to be prolonged because of the unique panoramic view. The Coast Range appears as a pattern of open meadows, timber harvest, and dense forest scattered across a rugged landscape.

Though evidence of modification exists in the form of ground scarring in the middleground and timber harvest in the background, these deviations appear subordinate to the broader landscape character of the Coast Range. The existing communications structures on West Point Spur are apparent, as their tall, vertical forms extend above the tree line and their grey color and smooth texture contrast with the regular texture and green color of the conifers. The scenic integrity is low to moderate because, although the landscape character appears natural, deviations such as the ground scarring areas are co-dominant.



Photograph 3-20. View from Marys Peak summit access road (KVA 7), looking west-northwest.

Lower Portion of the Meadowedge Trail – KVA 8

Along the Meadowedge Trail, hikers cross the steeply sloping West Meadow below Marys Peak which dominates the landscape character (Photograph 3-21). The brown color and soft texture of the exposed dirt of the trail contrasts with the green color and regular tufted texture of the meadow, creating a distinct, irregular line leading to the summit. The forest creates a discrete edge to the meadow where the vertical structure of the coniferous trees meets the meadow vegetation. Viewer experience on the Meadowedge Trail is considered prolonged, as views would be sustained as hikers cross the meadow.



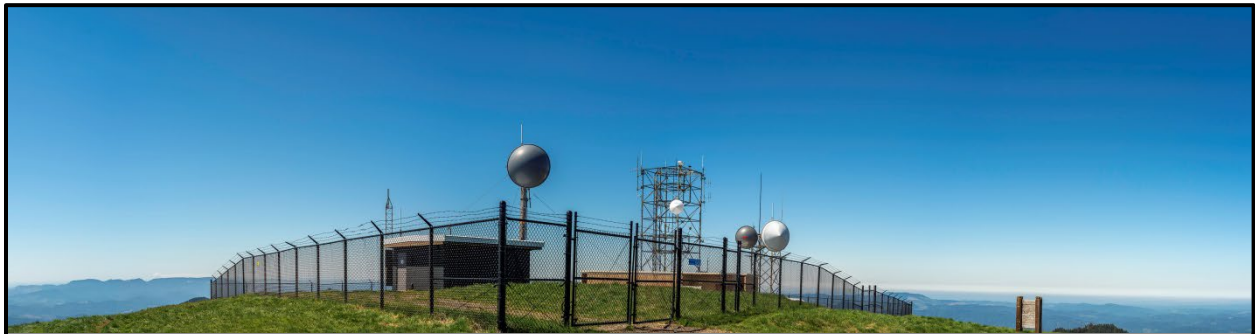
Photograph 3-21. View from the lower portion of the Meadowedge Trail (KVA 8), looking south.

The communications structures located at West Point Spur are visible from the Meadowedge Trail, rising above the coniferous forest, against the western horizon. The Marys Peak communications structures appear silhouetted against the rounded horizon of the Marys Peak summit. Scenic integrity is moderate because the communications structures are subordinate to the natural character of the Marys Peak landscape.

Marys Peak Summit Picnic Table – KVA 9

From the northeast corner of the communications site at the Marys Peak summit, viewers have a 360-degree panoramic view of the surrounding landscape (Photograph 3-22). The landscape is characterized by the flat, grassy top of Marys Peak in the foreground, which slopes moderately downward on all sides.

To the east, a narrow trail crosses the meadow, drawing foreground and middle ground views to the edge of the coniferous forest. On a clear day, background views extend across a mosaic of forest, timber harvest, agriculture, and built-environment settings out to the Pacific Ocean. Farther to the east, the Willamette Valley stretches to the Cascade Range. Views from this location are prolonged.

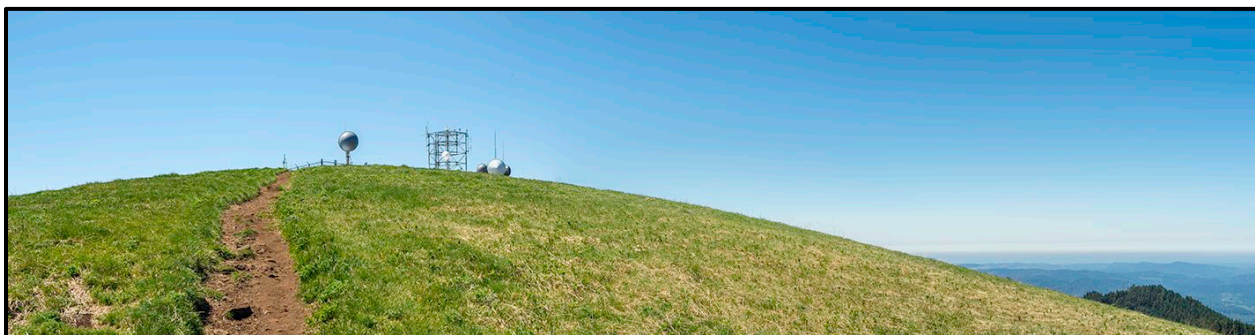


Photograph 3-22. View from the Marys Peak summit picnic table (KVA 9), looking southwest.

The existing Marys Peak communications facilities are a dominant feature at this location, with the communications site occupying the majority of the summit. The facility appears industrial, with tall steel-lattice structures and buildings that appear spread out and lack order, all surrounded by a chain-link fence topped with barbed wire. The facility introduces geometric forms, vertical horizontal lines, and smooth textures that contrast with the softer lines, green colors, and coarse textures of the surrounding landscape. Views to the west are partially obstructed by the communications facility, with the backdrop extending across the Coast Range to the Pacific Ocean. Although some viewers may be accustomed to the communications facility, a high sensitivity to potential change in the viewer experience is assumed. The scenic integrity is very low because the industrial appearance of the communications structures dominates the landscape character.

Summit Trail (Upper Portion) Intersection of Marys Peak Summit Trail and Meadowedge Trail – KVA 12

At the intersection of **KVA 12 is located on** the Summit Trail **in the meadow habitat on the northeast side of the Marys Peak summit** and Meadowedge Trail, **about midway between the BLM’s noble fir forest edge and the summit communications site** the Summit Trail emerges from the forest and continues through the meadow to the summit (Photograph 3-23). When hikers **traveling uphill** emerge out of the forest **and make their way about half way up the hill**, Marys Peak is directly in front of the viewer, dominating the experience. The Meadowedge Trail leads down the open meadow to the west, into the forest.



Photograph 3-23. View from the ~~intersection of Marys Peak Summit Trail and Meadowedge Trail~~ **Summit Trail (Upper Portion)** (KVA 12), looking southwest.

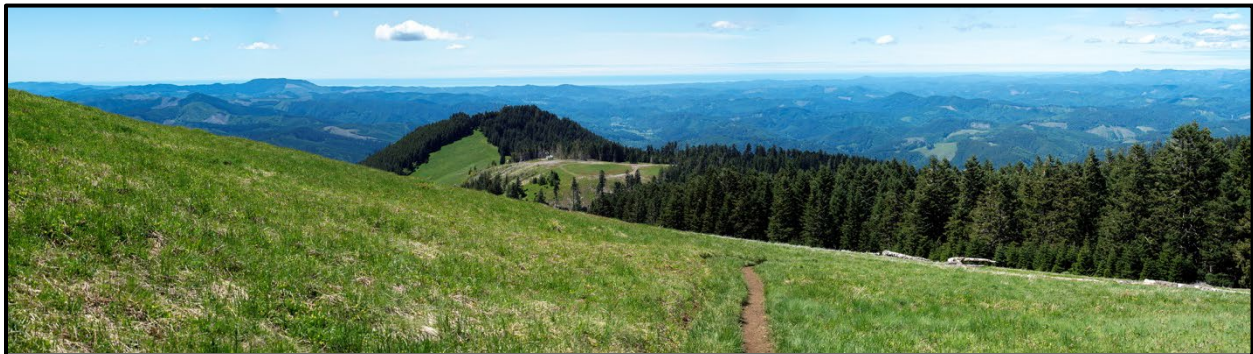
The landscape is characterized by the grassy meadow, communications structures, and broad horizon of the Coast Range and Pacific Ocean. The exposed dirt of the trail contrasts with the surrounding green

meadow, creating a distinct line and directional line leading to the facility. The stippled-coarse coniferous forest of West Point Spur is visible in the middleground to the west. Beyond West Point Spur, the panoramic view extends west across a smooth patchwork of timber harvest and forest to the Pacific Ocean.

When approaching the summit, the Marys Peak communications structures are focal, unobstructed and silhouetted against the panoramic backdrop of the Coast Range. The existing communications structures disrupt the smooth arc of the Marys Peak Summit, appearing discordant. Scenic integrity is low because the smooth texture and rounded form of the microwave dishes attract attention and, collectively, communications structures dominate the landscape character in the foreground to middleground.

Upper Portion of Meadowedge Trail – KVA 13

The upper portion of the Meadowedge Trail is immediately below Marys Peak, to the west of the existing communications site (Photograph 3-24). While similar to the view from the summit of Marys Peak, looking west, the location is in closer proximity to West Point Spur. The landscape is characterized by open meadow and forest mosaic in of the foreground/middleground and the expansive western panoramic view in the background. The bold color and form of the meadow and contrasting forest edge creates a sense of enclosure that creates dominance in the foreground landscape. The foreground appears as a steep, grassy meadow bordered on the northern side by dense coniferous forest. The panoramic view of the Coast Range and pattern of open meadows, timber harvest, and dense forest, provides context to the landscape features in the foreground-middleground. The view extends across the ridgelines to the Pacific Ocean. Viewer experience on the Meadowedge Trail is considered prolonged, as views would be sustained while hikers cross the meadow.



Photograph 3-24. View from the upper portion of Meadowedge Trail (KVA 13), looking west.

Scenic integrity is predominately moderate in the foreground and middleground because ground scarring from timber harvest is visible and dominates the foreground. One small structure and its access road are visible at the clearing in the middleground. The existing communications structures associated with West Point Spur are apparent, as their tall, vertical forms extend above tree line. The light grey color and smooth texture of the structures contrast with the surrounding soft to coarse texture and green color of the vegetation. Looking to the west, the landscape character appears natural, but deviations such as the ground scarring from existing communications structures and timber harvest are co-dominant, resulting in low to moderate scenic integrity. When views are directed upward towards Marys Peak, the built character is apparent due to the presence of the existing communications facility.

Valley Bottom Agricultural Lands and Residential Community

Only one community in the valley was considered close enough to be affected by Project activities. The City of Philomath is the closest rural residential community to Marys Peak, within the foothills of the Oregon Coast Range. The community is home to several saw mills, light industrial commercial manufacturing facilities, and high-tech companies. Surrounding the city are several small organic farms

in the valley bottoms. The Marys River flows to the south of Philomath toward the Willamette Valley. Surrounding the community are blankets of dense conifer forests lining the eastern slopes of the Coast Range, while the coastal foothills are covered in oak savanna.

Viewer groups are primarily composed of residents, workers, and some visitors. Because Marys Peak contributes to the community's character, it is assumed that change in this landscape feature could be associated with a high level of concern.

City of Philomath – KVA 4

KVA 4 is located at the western edge of the City of Philomath, at the parking area of a local business (Photograph 3-25). Landscape character is shaped by the residential and commercial buildings and roadways. The Coast Range encloses the landscape, creating a horizon characterized by numerous converging ridgelines. The City of Philomath is surrounded by the shallow foothills of the Coast Range, along the Marys River, and Marys Peak figures prominently in the viewshed. Upland meadows on Marys Peak are evident, appearing lighter green and soft against the darker green and stippled texture of the surrounding conifers.



Photograph 3-25. View from the City of Philomath (KVA 4), looking west-southwest.

Primary viewer groups associated with KVA 4 are assumed to be residents and tourists. Viewer experience is considered variable, with potential for prolonged or intermittent views. Viewer concern is considered moderate because the surrounding landscape contributes to the setting and character of the city. The existing communications structures at Marys Peak are not visually evident due to distance from the KVA. The scenic integrity of the city of Philomath is high because the surrounding coastal mountains and valley provide a sense of place, and the valued landscape character of a small town is intact.

Coast Range

Surrounding the Marys Peak SBSIA, the landscape of the Coast Range is characterized by rugged mountains and incised river valleys. The area is remote, with access provided primarily by Highway 20 and a network of forest roads. Rivers are common in valley bottoms, and the landscape appears steep and enclosed by both topography and dense forest vegetation. From higher elevations, landforms of the Coast Range appear as a network of peaks, with the horizon characterized as a series of converging diagonal lines. To the west, the horizon extends across the Pacific Ocean, and eastward, to the Cascade Range. Evidence of timber harvest is common in the Coast Range, with harvest units appearing as irregular blocks against intact forest.

Three KVAs were established for the Coast Range: KVA 5 (Wren Hill), KVA 10 (Highway 20), and KVA 11 (Community of Harlan). Coast Range viewer groups include residents, tourists, recreational users, foresters, and roadway travelers. Residents are associated with small communities located in river valleys or rural parcels located adjacent to Highway 20.

Overall scenic integrity within the Coast Range is moderate to very high. The valued landscape character of the Coast Range is expressed as contiguous forest, punctuated by meadows and agricultural areas.

Discordant elements such as timber harvest and the Marys Peak communications site are subordinate to the rugged forest landscape of the Coast Range.

Wren Hill – KVA 5

KVA 5 is located at a cul-de-sac at the west end of Wren Hill Residential Estates, on a steep slope of the northern edge of Highway 20, within an oak savanna (Photograph 3-26). Large estates are terraced between the oaks. Views extend to background distance zones, with prominent views of Marys Peak and the forested hills and mountains of the Coast Range. The landscape character of Wren Hill is considered natural appearing, dominated by the forested mountains of the Coast Range. Areas of timber harvest are evident, creating distinct geometric shapes where harvested areas meet mature forest. The varied stand age results in a mosaic of green color and varied texture.



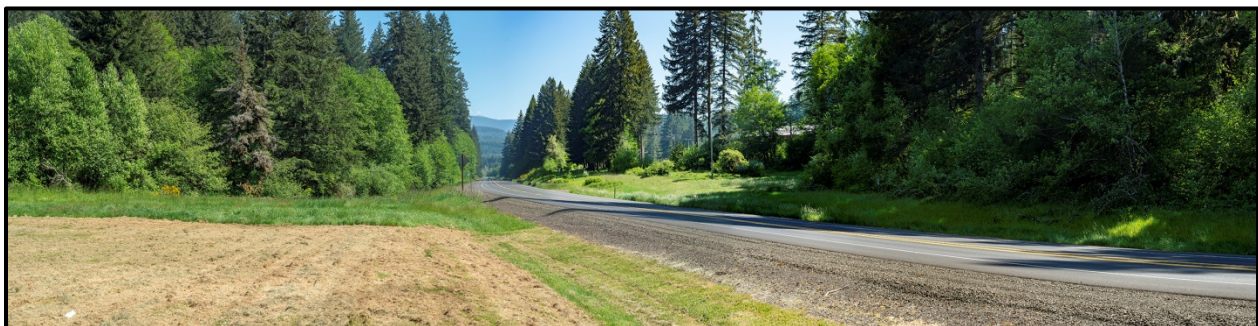
Photograph 3-26. View from Wren Hill (KVA 5), looking southwest.

Primary viewer groups from this KVA are the residents of the Wren Hill Residential Estates. Viewer experience is considered prolonged to sustained from residential areas. Viewer concern is considered high, as the viewshed is considered central to the character and quality of this residential area. The scenic integrity is considered medium because, although the valued landscape character appears slightly altered due to past timber harvest, these features are subordinate to the rugged forest landscape of the Coast Range and the existing communications structures at Marys Peak are not visually evident.

Highway 20 – KVA 10

KVA 10 demonstrates the viewer experience along Highway 20, a meandering roadway that extends across the Coast Range from east to west (Photograph 3-27). The road is bordered by dense forest, creating a narrow viewshed and enclosed landscape character for the majority of the corridor.

Periodically, views open and extend to the middle ground across adjacent meadows or agricultural fields; or upward to the ridgeline of the surrounding mountains in the distance. The landscape character is considered naturally evolving. Existing communications structures on Marys Peak are not visually evident from this KVA, although the structures are silhouetted against the skyline.



Photograph 3-27. View from Highway 20 (KVA 10), looking southeast.

Primary viewer groups on Highway 20 include roadway travelers and residents. The level of viewer concern is considered medium. Although some motorists may have an expectation of an intact

viewshed along Highway 20, some travelers may not be as sensitive to aesthetic attributes. The scenic integrity is considered high because the valued landscape character of the Coast Range is expressed as contiguous forest, punctuated by meadows and agricultural areas.

Community of Harlan – KVA 11

KVA 11 is located in the community of Harlan, due west of Marys Peak (Photograph 3-28). The landscape is characterized by broad open meadows, enclosed by the forested peaks of the Coast Range. The landscape is natural appearing, with agriculture and modest residential and commercial structures. Marys Peak is a prominent landform in the viewshed; the open meadows at and near the summit appear distinct on the horizon. Existing communications structures at Marys Peak and West Point Spur are visually evident and skylined.

Primary viewer groups in Harlan are residents. Viewer concern is assumed to be medium to high, as potential change to community character could be a concern. Viewer experience is prolonged to sustained from residences and community buildings. The scenic integrity is considered very high, because the surrounding landscape contributes to a sense of place within the Coast Range.



Photograph 3-28. View from the community of Harlan (KVA 11), looking east-southeast.

BPA Albany Substation

The BPA Albany Substation is located on Queens Avenue SW, in the City of Albany. The substation is located immediately adjacent to Queens Avenue SW, the Calapooia River, and Hazelwood Park (see Photograph 2-11 in Section 2.3.3 of this EA). The substation is an industrial looking site with metallic equipment and other structures surrounded by a chain-link fence.

BPA Albany Substation viewer groups include residents in discrete neighborhoods formed by cul-de-sacs and street grids and include roadway travelers. The communications structure within the BPA Albany Substation can be seen from residences, driveways, yards, and local streets in the Chase Orchards Subdivision (subdivision). Three KVAs are described below, one close to the substation (residential area) and two public areas in the distance (West Albany High School and Liberty Street). A KVA was not established at Hazelwood Park because views of the communications structure within the BPA Albany Substation from designated trails are obstructed by dense vegetation.

Orchard Lane – KVA -14

KVA 14 is located in a Chase Orchards Subdivision neighborhood on Orchard Lane SW, across the street from the BPA Albany Substation (Photograph 3-29). Orchard Lane, within the subdivision, is made up of single-family houses, paved streets, sidewalks, and mature ornamental vegetation. Because the residential area is accessed by a street that is perpendicularly oriented to Queens Avenue, the existing BPA communications structure is focal to the setting.

Primary viewer groups in the subdivision are residents. Viewer concern is assumed to be high, as potential change to community character could be a concern. Viewer experience is sustained from residences. Views of the communications structure are considered direct but would vary depending on

location within the neighborhood. Residents have some views of the steel-lattice structure from their homes, driveways, and yards. Intervening vegetation, such as tall conifers, block some views. The scenic integrity is considered very low-moderate, because the communications structure and electrical infrastructure within the BPA Albany Substation are evident in the backdrop of neighborhood. While they detract from the intactness of the residential neighborhood character, this infrastructure was present before the subdivision was constructed.

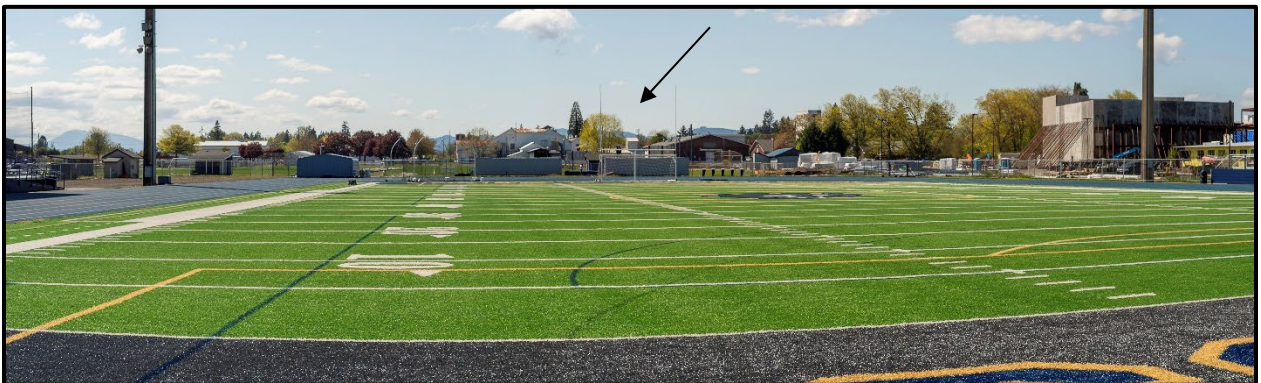


Photograph 3-29. View of the communications structure within the BPA Albany Substation from the residential neighborhood on Orchard Lane (KVA 14), looking west.

West Albany High School – KVA -15

KVA 15 is located about 0.5 miles east of the BPA Albany Substation (Photograph 3-30). West Albany High School is characterized by the school buildings and surrounding residential neighborhoods and includes a football field and track. Views from this KVA are dominated by the flat surface and horizontal lines of the football field and irregular horizon formed by houses and treetops in the distance.

The primary viewer groups associated with KVA 15 are assumed to be students and spectators. Viewer concern is assumed to be low, as viewers' attention is focused on activities in the field. Viewer experience is sustained and views of the communications structure are considered direct but in the distance. The scenic integrity at West Albany High School (KVA 15) is considered medium. The communications structure is detectable in the backdrop due to the straight, narrow, and vertical line (see Photograph 3-30); however, it appears subordinate to the foreground features.



Photograph 3-30. View of the communications structure within the BPA Albany Substation from the West Albany High School (KVA 15), looking west.

Liberty Street – KVA 16

KVA 16 is located about 0.4 miles east of the BPA Albany Substation, where Liberty Street passes between open space and a residential area on the east side of Liberty Street (Photograph 3-31). The landscape is characterized by a broad, open meadow enclosed by surrounding residential and commercial structures. The landscape is natural appearing, with elements of the built environment primarily expressed as residential and commercial structures.



Photograph 3-31. View of the communications structure within the BPA Albany Substation from Liberty Street (KVA 16), looking west.

The primary viewer group associated with KVA 16 is assumed to consist of residents. Residents would have sustained views and their level of viewer concern is considered high. The viewer experience for motorists is considered transient, primarily experienced from a moving vehicle. The views of motorists of the communications structure would be primarily peripheral and from a distance. The scenic integrity is considered low to moderate, influenced by the presence of transmission lines and poles and small-scale commercial buildings. The communications structure at the BPA Albany Substation is subordinate to other existing features in the backdrop, perceptible as a straight, grey, vertical line silhouette.

BPA Prospect Hill Communications Site

The BPA Prospect Hill communications site is located on a large hill that includes several other communications sites. There are no residents with close views of the communications site, but it would be visible in the distance to motorists on the public road at the base of the hill and from other public roads. Motorists would briefly see the numerous communications sites built along Prospect Hill, including the BPA site. From the public road near the site, multiple steel-lattice structures appear silhouetted against the sky, extending above the tree line (see Photograph 2-15 in Section 2.3.5 of this EA). Viewers along the public road can see the 140-foot tall steel-lattice BPA communications structure that supports about a dozen microwave dishes (see Photograph 2-16 in Section 2.3.5 of this EA). Because the visual change from adding one additional microwave dish to the existing BPA communications structure would barely be perceptible, KVAs were not established for the BPA Prospect Hill communications site.

3.7.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications facility would not be rebuilt and impacts related to Project construction would not occur. Operations and maintenance activities would continue at the BPA Marys Peak and the BPA Prospect Hill communications sites and would be similar to existing practices. Maintenance activities at the BPA Marys Peak communications site would result in **low** impacts on visual resources because they occur infrequently and are temporary in nature. If it were necessary to perform emergency repairs at Marys Peak, it would likely not be possible to plan or time these activities to minimize impacts. Because potential visual impacts resulting from emergency repairs

would be localized and likely to occur during winter months, impacts would be **low**. At the BPA Prospect Hill communications site, there would be **no** impacts on visual resources from maintenance activities and emergency repairs.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future.

3.7.4 Environmental Consequences – Action Alternatives

Impacts Common to All Action Alternatives

Because impacts on scenic resources would vary by action alternative; common impacts are not considered here, *with the exception of climate change*. See the next section for discussion of impacts specific to each action alternative.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Although there would be some permanent impacts from the Project to visual quality, due to the minimal nature of these impacts on visual resources and the inherent changeability of landscapes, it is not expected that climate change would have the potential to further increase these types of impacts in the future.

Impacts Specific to Action Alternatives

This section describes the potential impacts of implementing any of the action alternatives on scenic resources. Impacts on scenic resources would be temporary or permanent.

Potential impacts on scenic resources at Marys Peak, West Point Spur, and the BPA Albany Substation were evaluated based on the expected level of visual contrast and scale dominance, as seen from KVAs (AECOM 2020). Visual contrast is the extent to which a Project appears different from the surrounding visual environment because of its predominant visual elements of form, line(s), color, or texture. Visual contrast was assessed by comparing the visual elements of the existing landscape with the elements of the proposed Project. Scale dominance describes the proportionate size relationship between the Project elements such as a building or a steel-lattice structure and the surroundings in which it is placed (BLM 1986). The assessment of visual contrast and scale dominance informed the determination of expected change in scenic integrity that could result from the Project, and was used to determine the level of potential impacts for each action alternative.

For most KVAs, visual contrast and scale dominance were assessed by using visual simulations depicting Project components for each action alternative (Appendix E). Views of the existing landscape were compared to visual simulations that depict what each action alternative would look like if built. For KVAs for which visual simulations were not created, visual impacts were analyzed using information on visual contrast and scale dominance from simulations prepared for similar viewing conditions.

For each action alternative, potential impacts on scenic resources at Marys Peak and West Point Spur are first summarized below for those KVAs within the SBSIA and then for viewers in more distant KVAs (Willamette Valley residential communities and selected locations in the Coast Range). These areas provide an assemblage of viewer conditions that directly influence the extent to which beneficial *effects* or adverse impacts on scenic resources would be experienced. For Alternative 2A and Alternative 3C, potential impacts on scenic resources at BPA Albany Substation are then summarized for the three KVAs. For Alternative 4, the impacts on scenic resources at the BPA Prospect Hill communications site is

then discussed based on the expected level of visual contrast and scale dominance as viewed within the 3-mile study area.

Alternative 2A

Marys Peak – Marys Peak SBSIA

Alternative 2A construction would temporarily impact visual resources. The clutter of machinery, equipment, staged materials, and workers would be visible in the distance and very evident from near the summit and at the summit. These activities would create temporary **moderate** visual impacts.

Project activities that would result in the greatest permanent impacts on scenic resources would be access road improvements, constructing a new 40-foot tall steel-lattice structure, removing a monopole, and tree cutting near the Marys Peak summit. The addition of gravel to the surface of the access road and the installation of eight water bars along the access road would be visible to viewers from the parking lot (KVA 3), to hikers along portions of the Summit Trail (KVA 6), to hikers along the entire length of the access road (KVA 7), and from the picnic table at the Marys Peak Summit (KVA 9).

The fresh unweathered rock added to the access road would be evident in the foreground, and would make the access road more visible in the landscape from viewer locations in the middleground. Local rock would be used that matches the existing color of the road would be used to minimize the contrast of the resurfaced road with the surrounding landscape. Also, as rock weathers over time it would become less distinct on the landscape. The resurfacing of the access road and waterbar installation would therefore have temporary **moderate** impacts that would eventually become less obvious, resulting in **low** permanent impacts.

From the Marys Peak public parking lot (KVA 3) and some portions of the Summit Trail (KVA 6), the unweathered gravel on the access road surface would be evident, contrasting with the soft vegetated edges of the meadow (See Appendix E, pages E-3 and E-5). The water bars would be visible but not dominant. For hikers on the Marys Peak access road (KVA 7), the unweathered gravel surface on Marys Peak Road would appear bold, with the new gravel surface introducing strong visual contrast against the soft texture of adjacent meadow grasses (See Appendix E, page E-6). However, because the view to the west is focal, viewer attention is expected to be directed west, away from Marys Peak. Access road improvements would also be visible from the Marys Peak Summit (KVA 9) and are expected to contribute strong visual contrast (See Appendix E, pages E-7). The strong visual contrast from access road improvements that would initially be experienced by viewers from these areas, a **moderate** temporary impact to visual resources, is expected to be reduced over time as the new gravel weathers and vegetation along the road edge encroaches into the graveled areas, resulting in **low** permanent impacts.

The addition of the new 40-foot, steel-lattice structure would be a permanent impact, as the tall stature could be visible from areas located below the summit (See Appendix E, page E-7). However, the 40-foot height of the structure would ensure that it is screened by vegetation and topography from many areas within the SBSIA because the average height of existing conifers exceeds 40 feet. The dense conifers would block views from the public parking area (See Appendix E, page E-3).

From the Saddle Meadow pullout (KVA 1), the primary source of visual contrast would result from the vertical line of the structure against the predominantly horizontal line of the top of Marys Peak. Visual contrast would be moderate because the addition of the new structure would alter the existing structural form by creating a broader, more cubic form in combination with the existing USFS structure. The structure would appear focal due to viewer position and skylining (See Appendix E, page E-1).

From the upper portion of the Meadowedge Trail (KVA 13), visual contrast of the proposed structure would be strong due to the proximity, scale, and linear, geometric form and industrial character of the structure relative to the surrounding landscape. The proposed structure would be a dominant element in the landscape, particularly due to the inferior viewer position and skylining of the structure. Scenic

integrity would remain low. Views to the west across the Coast Range would remain naturally appearing.

Actions associated with Alternative 2A would be most evident at the summit (See Appendix E, page E-7 and E-10). From this close vantage point, the removal of BPA's existing wooden and lattice monopoles would be evident, as would the increased massing of steel-lattice structures that could result from the addition of a third steel-lattice structure on Marys Peak. From the picnic table, visual contrast of the proposed structure would be strong due to the proximity, scale, and linear, geometric form and industrial character of the structures relative to the surrounding landscape. The proposed structure would be a dominant element in the landscape and the visual contrast of the microwave dish is considered strong due to the smooth texture against the sky, resulting in a **moderate** permanent impact on scenic resources. Because the new BPA steel-lattice structure would not deviate in form from the existing USFS lattice structures, scenic integrity would not be reduced because there already is very low scenic integrity.

Tree cutting on BLM-administered lands would be visible to hikers from portions of the access road and from the summit. The tree-cutting area would likely not blend with either the adjacent meadow or adjacent forest for years as it gradually transitions to meadow habitat. However, because only one small area of trees would be cut and it would gradually transition to meadow, permanent impacts on scenic resources from tree cutting would be **low**.

Overall scenic integrity of the Mary Peak SBSIA would remain the same as existing conditions under Alternative 2A but visual changes would be evident, resulting in a **moderate** permanent impact on scenic resources.

Marys Peak – Valley Bottom and Coast Range

Installation of the new 40-foot steel-lattice structure, removal of two monopoles, and tree cutting near the Marys Peak summit would be nearly undiscernible from existing conditions when viewed from residential areas and communities, and from along Highway 20, due to distance and screening by topography and vegetation. It is possible that the silhouette of the new BPA communications infrastructure under Alternative 2A could be detected under front-lit or back-lit conditions (i.e., during sunrise or sunset); however, the cubic form of the new steel-lattice structure would not be discernible from that of the existing USFS lattice structure. Changes in the buildings would not be visible because their low height and small stature mean they would not be silhouetted against the horizon of Marys Peak. As a result, Alternative 2A would have **no** impacts on scenic resources for viewers in these areas.

BPA Albany Substation

Implementation of Alternative 2A would impact residents of a subdivision located across the street from the BPA Albany Substation, who would have views of the new 6-foot diameter microwave dish to be installed on the existing steel-lattice structure (See Appendix E, pages E-14). The view would be most obvious from the primary road used to access the subdivision, but the front of the microwave dish would point in the direction away from the subdivision. Residents would have some views from their driveways, yards, and inside their homes. Intervening vegetation, such as tall conifers, would block some views. The new microwave dish would also be visible to motorists driving by the substation and by people visiting the adjacent public park.

Construction staging would occur within the substation's existing fenceline and would only occur for a week or less. Activities would be limited to placement of the new microwave dish on the existing steel-lattice communications structure. Vegetation clearing or grading would not be required, and construction-related actions would be short term and take a week or less. Temporary impacts to visual resources from construction would be **low**.

As viewed from the residential subdivision along Orchard Lane, the new 6-foot-diameter microwave dish would introduce visual contrast of the smooth texture, solid form, and grey color of against the more

transparent and angular existing steel-lattice BPA communications structure (See Appendix E, page E-14). Residential viewers would have an unobstructed view of the side of the new microwave dish from the roadway, sidewalks, and some homes. Deciduous and coniferous vegetation would block some views from some locations in the vicinity of the BPA Albany Substation, including the recreational trails neighboring public park.

The new microwave dish would also be visible to motorists driving by the substation and by people entering the parking lot of the neighboring public park. Motorists approaching Orchard Lane from SW Queen Avenue would have a more direct view of the communications structure, particularly if accessing from the southwest.

Under Alternative 2A, from the nearby residential subdivision, the degree of deviation from the existing landscape character would be evident; however, there would be a low overall change. Because scenic integrity would remain low to moderate, with communications infrastructure a dominant element of landscape character, impacts to scenic resources would be **moderate**.

From distant locations, such as from West Albany High School (KVA 15) and Liberty Street (KVA 16), visual contrast of the new microwave dish mounted on the existing BPA communications structure is expected to be none to weak. Due to the combined factors of the distance from the communications structure and small scale of the proposed microwave dish, it would not be evident to viewers. The degree of deviation from the existing landscape character would not be evident, and there would be no overall change. Because scenic integrity would not change, with the school facilities and surrounding residential areas being the dominant element of landscape character, impacts to scenic resources would be **low**.

Alternative 3C

Mary Peak – Marys Peak SBSIA

Like Alternative 2A, Alternative 3C would have temporary **moderate** impacts on visual resources during construction and permanent **low** impacts from access road improvements and tree cutting.

The actions associated with Alternative 3C that that would result in the greatest permanent impacts on scenic resources include access road improvements, the addition of a new 60-foot steel-lattice structure and the consolidation of new and existing BPA and USFS communications infrastructure within a smaller site footprint (e.g., reduced by 6,464 square feet). The same access road improvements are proposed under both Alternative 2A and Alternative 3C (See Appendix E, page E-6). As described under Alternative 2A, the strong visual contrast from access road improvements that would initially be experienced by viewers from these areas would result in a **moderate** temporary impact to visual resources (See Appendix E, pages E-3, E-6, and E-8). The level of impact to visual resources is expected to be reduced over time as the new gravel weathers and vegetation along the road edge encroaches into the graveled areas, resulting in **low** permanent impacts.

The new steel-lattice structure would contribute the most to potential impacts, as the vertical stature would appear taller than the surrounding conifers, and therefore would be visible from some areas below the summit. From the public parking area, visual contrast of the new angular lattice structure against the irregular horizon of the conifers is considered moderate (See Appendix E, page E-9 and E-12). Collectively, the existing and proposed structure would attract attention. Deviation from the existing landscape character would be evident, and scenic integrity would be reduced from high to moderate-high.

From the Saddle Meadow pullout, the addition of the new steel-lattice structure would alter existing structural form by creating a broader, more cubic form in combination with the existing USFS structure (See Appendix E, page E-2). Because of the location of the structure, it would appear to overlap the existing structure, thereby reducing the transparency of both structures, and creating a more

emboldened dark vertical line. Collectively, the structures would appear focal as a result of inferior viewer position and skylining.

From the intersection of Summit Trail and Meadowedge Trail and the upper portion of the Meadowedge Trail **Summit Trail (Upper Portion)** (KVA 12), the effect of the new structure would be similar to Alternative 2A. Visual contrast of the proposed structure would be strong due to the proximity, scale, linear, geometric form, and industrial character of the structure relative to the surrounding landscape. The proposed structure would be a dominant element in the landscape, again, due to the inferior viewer position and skylining of the structure. The structure would be taller than that seen in Alternative 2A; however the scale dominance would not substantially increase impacts as compared to Alternative 2A (Appendix E, page E-11). From this viewer position, the benefits of the more condensed site footprint, and consolidation of structures would not be fully realized. The degree of deviation from the existing conditions would be evident and there would be a moderate overall change. Scenic integrity would remain low but views to the east across the Willamette Valley and to the west across the Coast Range would remain naturally appearing.

Actions associated with Alternative 3C would be most evident at the summit, where visual contrast of the proposed structure would be strong due to the proximity, scale, and linear, geometric form and industrial character of the structures relative to the surrounding landscape. Like existing conditions, the proposed structures would be a dominant element in the landscape.

The height of the BPA steel-lattice structure under Alternative 3C would impact scenic resources within Marys Peak SBSIA to a greater extent than under Alternative 2A. Site-specific improvements are not expected to improve overall scenic integrity of the Marys Peak summit, as the proposed BPA and existing USFS infrastructure would continue to be a dominant element of the landscape. However, improvements to scenic quality on Marys Peak summit would be evident, as the consolidation of communications infrastructure would limit the extent to which existing and proposed communications infrastructure blocked views to the west, a **low** beneficial effect. Still, site-specific improvements are not expected to improve overall scenic integrity of the Marys Peak summit as the proposed BPA and existing USFS infrastructure would continue to be a dominant element of the landscape.

The scenic integrity within the Marys Peak SBSIA is not expected to change, except from the parking lot at Marys Peak, where the increased visibility due to the 60-foot steel-lattice structure would reduce the scenic integrity from high to moderate-high. Although the valued landscape character would be slightly altered, the noticeable change would remain visually subordinate to the landscape character, and result in **moderate** impact to visual resources overall.

Marys Peak – Valley Bottom and Coast Range

Alternative 3C would have **no** impacts on scenic resources for viewers in these areas, the same as Alternative 2A. Consolidation of new and existing BPA and USFS communications infrastructure, tree-cutting and installation of a new 60-foot steel-lattice structure, while taller than surrounding conifers, would be nearly undiscernible from existing conditions when viewed from residential areas and communities, and from along Highway 20, due to distance and screening by topography and vegetation. It is possible that the silhouette of the new steel-lattice structure under Alternative 3C could be detected under front-lit or back-lit conditions (i.e., during sunrise or sunset); however, the cubic form of the new steel-lattice structure is similar to that of the existing USFS lattice structure it would replace. The new, consolidated building would not be visible because its low height and small stature mean it would not be silhouetted against the horizon of Marys Peak.

BPA Albany Substation

Implementation of Alternative 3C would have the same impacts on subdivision residents located across the street from the BPA Albany Substation, and users of a nearby city park, as under Alternative 2A (KVA 14). Temporary impacts on visual resources during installation of the microwave dish would be **low**.

Because some sensitive viewers, in particular local residents and park users, would notice the new microwave dish, permanent impacts to visual resources would be **moderate**.

Alternative 4

West Point Spur – Marys Peak SBSIA

Construction activities at West Point Spur are not expected to be seen from any viewing areas within the Marys Peak SBSIA due to the distance from Marys Peak Road, trails, and the summit and because of screening provided by existing vegetation. The improvements along the access road would also not be visible except to authorized personnel entering the locked gate to maintain one of the West Point Spur communications sites and to a limited number of recreational users, primarily bird watchers. Tree-cutting activities would be temporarily visible to motorists and bicyclists traveling Marys Peak Road. There would be **no to low** temporary impacts on visual resources during construction of Alternative 4 at West Point Spur.

Work to remove the BPA communications site at Marys Peak would be evident, although disturbance would be temporary as the site would be revegetated. There would be **low** temporary impacts on visual resources during removal of the BPA communications site.

Alternative 4 would result in the least change of all the action alternatives from existing conditions (KVA 13; See Appendix E, page E-13). Equipment added to the existing CPI structure at West Point Spur would not be visible from most of the viewing areas in the Marys Peak SBSIA. Tree cutting at West Point Spur could result in increased visibility of the existing CPI steel-lattice structure from Marys Peak Road, with visibility greatest when the structure is back-lit (e.g., at sunset). Motorists and bicyclists traveling Marys Peak Road would briefly view the tree-cutting area from an inferior viewer position, a **low** impact. Vegetation clearing could also be evident from Marys Peak Road, and from the viewing areas to the west along the lower and upper Meadowridge trail and from the summit. However, overall scenic integrity would not change as a result of Alternative 4 and would remain low to moderate due to the existing ground scarring east of the CPI site. Permanent impacts from Alternative 4 would be **low**.

Compared to other action alternatives, Alternative 4 would result in the greatest improvements to scenic resources at Marys Peak because a new BPA steel-lattice structure would not be added to the Marys Peak summit, and the BPA communications building. The existing monopole and propane tank, and other BPA infrastructure would be removed. These actions, combined with a reduction in the size of the fenced area (reduced by 6,464 square feet) would improve scenic quality of the Mary Peak Summit by reducing scale dominance and creating a more organized appearance of the communications infrastructure (See Appendix E, pages E-9 and E-12). This would eventually result in a **moderate** beneficial effect.

West Point Spur – Valley Bottom and Coast Range

Alternative 4 would have **no** impacts on scenic resources for viewers in these areas, the same as Alternative 2A and Alternative 3C. Under Alternative 4, removal of BPA communications infrastructure on Marys Peak would not be discernible from existing conditions when viewed from residential areas and communities, and from along Highway 20, due to distance, screening by topography and vegetation, and because of the low stature of these structures. Installation of additional equipment on the steel-lattice structure at the BPA Prospect Hill communications site would not change the character of the site, which is visible to motorists only briefly and from a distance. Because the BPA communications structure already has about a dozen attached microwave dishes, the addition of one more microwave dish would not be discernible from the nearby road.

BPA Prospect Hill Communications Site

Under Alternative 4, proposed work at the BPA Prospect Hill communications site would include installation of a microwave dish, VHF antenna, and some cross bracing on the existing communications structure. There are no residents located in close proximity of the Prospect Hill communications site,

but weak visual contrast of the new microwave dish could be detectable in intermittent views experienced by motorists. Motorists briefly see the numerous communications sites built along Prospect Hill, including the BPA site, silhouetted against the sky. Since the existing BPA communications structure contains multiple microwave dishes, the addition of one more microwave dish is not expected to result in **no** temporary or permanent impacts to visual resources.

USFS and BLM Plan Conformance Determination

This impact assessment informs the USFS plan conformance determination, which addresses the consistency of each action alternative with applicable VQOs. The VQOs establish minimum acceptable thresholds for landscape alterations, as described in Section 3.5.1 of this EA. The threshold of effects was considered exceeded if alterations would not meet the scenic integrity and dominance criteria of the VQO. Marys Peak SBSIA is managed to meet the VQO of retention; however, electronic facilities may achieve a modification VQO standard where retention is not practical (USFS 1989). Marys Peak Road is managed as partial retention-foreground and middleground-modification (USFS 1990).

Based on the impacts assessment, if the mitigation measures listed below would be implemented, the following determination was made:

- Alternative 2A and Alternative 3C would meet the VQO of modification because operation of the Project on Marys Peak would visually dominate the original characteristic landscape, particularly when viewed from locations at close proximity (e.g., KVA 7, KVA 9, and KVA 12).
- Under Alternative 4, the Project would meet the VQO of modification because it would result in removal of existing monopoles and the radio building at Marys Peak and would not introduce a new lattice structure to the landscape.
- All action alternatives would meet established VQOs of partial retention-foreground and partial retention-middleground for locations along Marys Peak Road. Tree cutting under Alternative 4 could be visually evident, but would be subordinate to the characteristic landscape.
- Impacts from tree cutting would be in conformance with the management standards provided in the SNF LRMP (USFS 1990) and VRM Class IV objectives provided in the Northwestern and Coastal Oregon RMP (BLM 2016)

3.7.5 Mitigation Measures – Action Alternatives

If one of the action alternatives is implemented, BPA would implement the following construction BMPs and mitigation measures to avoid or minimize visual resources impacts from the Project.

- Consult with a USFS landscape architect and botanist on the final siting of all site facilities.
- Maintain open views in the site layout to the extent possible.
- Review site, building, propane tank, microwave dish, and steel-lattice structure designs with USFS, including the colors and materials to be used, to choose those most visually appropriate with the setting (i.e., naturally appearing palate with low light reflectivity while maintaining low heat absorption colors; matte finish).
- Implement access road improvements in a manner that maintains the scale and character of the existing road, minimizes impacts on shoulders, and maintains the rural setting.
- Maintain the existing color of gravel during any necessary road resurfacing as much as possible.
- Install the HVAC unit on the south-facing wall of the Marys Peak communications building addition (Alternative 3C) to minimize noise and visual impacts to visitors near the picnic table area located north of the communications site.

- Explain visual quality-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Site all construction staging and storage areas away from locations that would be clearly visible from sensitive viewer groups as much as practicable.
- Provide information to visitors at Marys Peak on how to avoid construction activities as much as possible, including posting Project information and updates on the SNF website and posting and maintaining signs at trailheads and other obvious locations, such as existing signboards at the public parking lot and the campground, so that visitors can have a pleasant visit and experience good views.
- Limit vehicle speeds on unpaved roads and surfaces to 10 miles per hour or less to reduce dust.
- Control dust during construction with water or other appropriate control methods, without the use of chemical additives, as needed.
- Retain shorter stature trees along the Marys Peak roadway edge (Alternative 4) to minimize views of the CPI communications structure from the Marys Peak SBSIA.
- Maintain and clean construction sites as much as practicable and keep construction areas free of debris.
- Allow areas where trees are **cut** cleared within the Marys Peak SBSIA to revert to natural non-forested habitat.

3.7.6 Unavoidable Impacts Remaining After Mitigation

At the BPA Marys Peak site, if Alternative 2A or Alternative 3C is implemented, there would be some unavoidable, adverse, temporary impacts to scenic resources from disturbance in the form of construction equipment and activity that could be seen by sensitive viewer groups, including people engaged in recreational activities. Both alternatives would result in permanent visual changes that would result from access road improvements, constructing a steel-lattice structure, and from cutting trees in an area visible to hikers, which could make the access roads slightly more visible in the landscape. For Alternative 2A and Alternative 3C, there would be **moderate** temporary impacts during construction, **moderate** permanent impacts from the installation of the communications steel-lattice structures, and **low** permanent impacts from tree cutting and access road improvements. Under Alternative 3C, there would be **low moderate** beneficial effects from the removal of the BPA Marys Peak communications site.

At the BPA Albany Substation, if Alternative 2A or Alternative 3C is implemented, there would be some unavoidable adverse impacts to scenic resources from the installation of a 6-foot diameter microwave dish on the existing steel-lattice structure. The proposed microwave would be a permanent visual change that would be visible to a variety of viewers, including residents, motorists, and park visitors. For Alternative 2A and Alternative 3C, there would be **low** temporary impacts during construction, and **moderate** permanent impacts due to the installation of the new microwave dish on the steel-lattice structure.

If Alternative 4 is implemented, at the BPA Marys Peak site there would be **low** temporary impacts during the removal of the BPA communications site due to vegetation clearing that could be evident from Marys Peak Road, from the lower and upper Meadowridge Trail, and from the summit. **No** unavoidable permanent impacts to scenic resources would occur with Alternative 4 at Marys Peak.

At West Point Spur, motorists and bicyclists on Marys Peak Road would briefly view the tree cutting area from an inferior viewer position that could result in increased visibility of the existing CPI steel-lattice structure. **No** scenic resources impacts at West Point Spur would occur during construction, but **low**

temporary impacts would occur due to the tree cutting. **Low** permanent impacts would occur from the changes at West Point Spur.

Under Alternative 4, there would be **no** impacts to visual resources from the installation of an additional microwave dish at the BPA Prospect Hill communications site because of the number of microwave dishes already on the communications structure and the lack of sensitive viewers.

3.8 Cultural Resources

3.8.1 Study Area

Cultural resources are physical remains, objects, places, historic records, and traditional cultural practices or beliefs that connect people to their past. The study area for cultural resources includes areas at the Marys Peak communications site, CPI West Point Spur communications site, BPA Prospect Hill communications site, and the BPA Albany Substation where cultural resources could be affected by the Project.

The Marys Peak communications site portion of the study area includes the:

- Fenced summit communications site and a 100-foot buffer outside the fence
- Unpaved access road that leads from the paved parking lot to the summit communications site (50-foot wide area centered on the road)
- Stand of noble fir trees on BLM lands that would be cut

The West Point Spur portion of the study area includes the:

- CPI fenced communications site and a 30-foot buffer outside the fence
- FS Road 3010-112, leading from Marys Peak Road to the CPI site (50-foot wide area centered on the road)
- Area of mixed forest located northeast of the CPI communications sites where some trees would be cut
- Material/equipment staging and vehicle driving/parking area

The BPA Prospect Hill communications site and BPA Albany Substation portions of the study area only includes the area within the fences around each facility because Project work would only occur within the fence.

3.8.2 Affected Environment

Project Area Historical Background

Numerous archaeological investigations provide a cultural timeline for the Project area. In western Oregon, archaeological work provides evidence that humans occupied the region as early as 13,000 years ago, suggested by the discovery of fluted Clovis points in the Willamette Valley (Aikens 1975).

Archaeological material dating from 11,000 to 8,000 years ago have been uncovered on the floor of the Long Tom River west of Veneta, Oregon, and in rock shelters in the Cascades at the Cascadia Caves (Newman 1966, Baxter 2012). A wide variety of stone implements are associated with this time period.

Archaeological sites dating from 7,000 to 3,400 years ago are most common in the Willamette Valley. Typical projectile points during the early part of this period include heavy broad-necked varieties. Milling stones occur in early deposits and later are replaced by stone bowl mortars and pestles. There was an intensification of camas processing, evidenced by large number of camas processing sites in the Willamette Valley (O'Neil 2004). Changes in climate may be a likely factor in this transition; warmer conditions reduced the extent of coniferous forest and expanded prairie and oak woodland (Connolly 1990).

There appears to have been a dramatic increase in the human population after 3,400 years ago. Sites of this period typically contain small, narrow-necked projectile points used to tip arrows, and antler and bone tools. The appearance of whale bone and shell artifacts in sites suggests the establishment of trade networks between the coast and interior (Aikens 1975). This period may also involve a shift

toward settlement and subsistence centered on low elevation pithouse villages with seasonal movement to upland task-specific camp sites (Beckham and Minor 1992).

Various tribes and bands could have accessed portions of the Project area. The Coast Range served as a natural geographic and linguistic boundary between the Alsea and Yaquina peoples, who occupied the estuaries and river mouths of the Pacific Coast, and the Kalapuya, who inhabited the grasslands of the Willamette Valley (Connolly 1986). The Alsea and Yaquina occupied the coastal areas of Lincoln County from present-day Yaquina Bay south to the Yachats River. During the spring and summer months, most of the populations of the Alsea and Yaquina moved away from their primary villages to make more productive use of marine resources like shellfish and to possibly travel upland to utilize other plant and animal resources (Beckham et al. 1981: 182).

The term precontact is used to describe the time before the early 1800s, when Euro-American explorers, fur traders, and missionaries had not yet entered the region. The term contact is used to describe the time after the early 1800s, when Euro-Americans arrived in the Willamette Valley. The population of the Kalapuya at that time is estimated around 15,000 individuals, occupying an area extending south from Willamette Falls in Clackamas County to the Row River in Lane County and from the Cascade Range westward toward the crest of the Coast Range (Cole 1968, Juntunen et al. 2005). A tragic consequence of contact with Euro-American settlers was the introduction of diseases to native populations, resulting in high death rates. A decrease in native populations also occurred due to sporadic warfare with settlers in the 1840s and 1850s.

Although the lifeways of each individual band varied, the Kalapuya people shared a common dialect of the Kalapuya language and social structure. A year-round village, typically located in wooded areas around streams and river, was maintained by each band for the winter months. During the spring and into the fall, members split into small groups to travel and gather seasonal foods, basketry material, medicines, hunt game, and fish (Juntunen et al. 2005).

Other Tribes could have occupied the Project area, for at least part of the year. For example, during the spring and summer months, the Molalla Band traveled west to gather berries and to fish for lamprey (Rosenson 1980). The traditional seasonal movement of Tribes to access materials where and when they became available suggests that Marys Peak and other Project components were used by Tribes as a place to gather food, materials, medicines, and other items, as well as serving as a destination for religious or spiritual practices. The Marys Peak SBSIA Plan states that the Indian name for Marys Peak was Chintimini, but this is unverified (USFS 1989). The traditional use of the Marys Peak portion of the Project area by Tribes was confirmed through Section 106 consultation with consulting parties and through ethnographic studies conducted by BPA and consulting parties.

Euro-American settlement proceeded at a rapid pace. Farms appeared across the Willamette Valley. The Homestead Act of 1862 fueled the desire for land, resulting in the settlement of the river valleys and less desirable areas, including the Coast Range. Early homesteaders used the meadow on Marys Peak as summer range for their sheep, goats, and cattle (USFS 1989). The timber industry expanded throughout the nineteenth and twentieth centuries, establishing large mills throughout the area and employing hundreds of people. Landowners began harvesting timber near Marys Peak just after World War I (USFS 1989).

The road to Marys Peak was constructed by the Civilian Conservation Corps and the Works Project Administration in 1938 and completed in 1941 (USFS 1989). In June 1941, the City of Corvallis leased 400 acres of land to USFS for a 40-year period to be developed for public use (AECOM 2019). In June 1941, the City of Corvallis donated 40 acres of land at Marys Peak to the U. S. government (BPA 2016). The Marys Peak fire lookout and observatory was constructed on the summit in 1942, replaced by a new lookout in 1959, and then subsequently removed (Gazette Times 1959a). In 1958, the U.S. Air Force

extended the road to the top of the Peak and constructed a radar station that was never used, and the building was subsequently transferred to USFS (AECOM 2019).

In September 1958, BPA proposed construction of a combination VHF radio station and USFS lookout on Marys Peak. The proposed building would have three stories, 20-by-20-foot concrete block, aluminum, and glass construction, and an ultra-high frequency (UHF) radio antenna mounted on the roof. The first floor would be designated for BPA radio equipment, the second floor for the public, and the third floor for USFS (AECOM 2019).

The multi-use building was never built due to insufficient funds. USFS decided to construct its own building at a former USFS lookout site (Gazette Times 1959b). Meanwhile, BPA decided to relocate its proposed site to public property on the northeast side of Marys Peak. The site was surrounded by land owned by the City of Corvallis and USFS and it drained into the city's watershed. Both the city and USFS protested BPA's plans, arguing it would jeopardize the watershed and interfere with lookout operations (Gazette Times 1959c). The Corvallis city manager opposed any development on Marys Peak and stated that the BPA radio station would be detrimental to recreational activities, contribute to the contamination of the city's water supply, and set a precedent for additional development (Gazette Times 1959b).

To reach a compromise, the Corvallis city manager called for USFS and BPA to agree on an option that would not limit the public's use of the peak and would not appear too prominently on the skyline (Gazette Times 1959c). BPA and USFS signed a Memorandum of Understanding (MOU), stipulating to the construction of a BPA microwave radio station next to the USFS's building on Marys Peak (BPA-USFS MOU 1959). The MOU also stipulated that the BPA building would provide space for radio equipment for the Federal Bureau of Investigation and the Bureau of Land Management (Id.).

The BPA communications site was constructed in 1960 and 1961, and began operating in 1961. The communications site consists of a communications building, a wood pole that supports a microwave communications dish and VHF whip antennas, a small steel-lattice structure, a steel pole with weather data collection equipment and a BLM VHF whip antenna, and a propane tank, all enclosed within a chain link fence, as described in Section 2.2.1 of this EA.

The current USFS communications site was constructed and became operational in 1996. The site consists of a building, two steel-lattice structures, and a propane tank; all enclosed within the fence, as described in Section 2.2 of this EA.

Cultural Resource Consultation Process

The National Historic Preservation Act (NHPA; 16 USC 470 et seq.) outlines the consultation process in which federal agencies must engage when their actions could affect cultural resources, including historic sites, archaeological resources and traditional cultural properties. BPA initiated consultation for this Project under the NHPA on May 5, 2015, with the Oregon State Historic Preservation Office (SHPO), USFS, the BLM, the Confederated Tribes of Siletz, and the Confederated Tribes of Grand Ronde. BPA has continued to engage with these consulting parties during Project planning and environmental review.

The cultural resources study area is referred to as the **area of potential effects** (APE) in this EA, a term defined in the implementing regulations for the NHPA (36 CFR 800.16[d]). The APE is the area where cultural resources must be identified for a Project according to the NHPA. Consulting parties were asked for any information they may have, given an opportunity to comment on the APE and survey methodology, and provided the results of the cultural resource surveys.

Historic properties are a subset of cultural resources that includes any prehistoric or historic district, site, building, structure, or object (such as archaeological relics) included in or eligible for inclusion in the National Register of Historic Places (NRHP). The NRHP is the U.S. government's official list of districts,

sites, buildings, structures and objects deemed worthy of preservation for their historical significance. Of the more than 1 million properties on the NRHP, 80,000 are listed individually. The remainder of the properties on the NRHP are contributing resources within historic districts.

Besides a building or structure (standing, ruined or vanished), historic properties can be the location of a significant event, a prehistoric or historic occupation or activity, or any location that itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure. Historic properties also include properties of traditional religious and cultural importance to an Indian Tribe or Native Hawaiian organization that meet the National Register Criteria. This type of historic property is referred to as a traditional cultural property (TCP) in this EA.

Cultural Resource Identification

Cultural resource surveys were conducted to identify and inventory cultural resources that could be in the Project APE. Archaeological surveys were conducted to identify prehistoric sites and historic sites at the Marys Peak communications site and the CPI West Point Spur communications site. No artifacts or evidence of archaeological sites were observed during the archaeological field surveys (Teoh 2015, Perkins 2019).

The two consulting Tribes conducted a traditional cultural property study of the Marys Peak and West Point Spur Project areas. BPA has been asked by the consulting parties that the results of the study remain confidential. BPA will continue to consult with the Tribes and the SHPO regarding the potential effects of action alternatives.

Transmission and communications facilities, including substations and radio stations, can themselves be historic properties under the NRHP. The following facilities are being considered for this Project: BPA Marys Peak communications site, USFS Marys Peak communications site, the BPA Albany Substation, the BPA Prospect Hill communications site, and the CPI West Point Spur communications site.

Cultural Resource Evaluation

Once cultural resources are identified, the NHPA requires those cultural resources – including districts, sites, buildings, structures, and objects – to be evaluated for eligibility for NRHP listing using four criteria commonly known as Criterion A, B, C, or D (36CFR Part 60.4(a-d)). A cultural resource must meet at least one criterion to be eligible for NRHP listing.

Significance is considered present in properties that “possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- a. are associated with events that have made a significant contribution to the broad patterns of our history; or
- b. are associated with the lives of persons significant in our past; or
- c. embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. have yielded, or may be likely to yield, information important in prehistory or history (36CFR60.4).

Properties that meet one or more of the NRHP criteria and retain necessary integrity are considered historic properties. The effects of the Project must be evaluated to determine if they will affect the ability for historic properties to be eligible for the NRHP. Such effects are considered adverse and the damage to the properties would need to be mitigated through agreements between the lead federal agency and the consulting parties.

BPA bases determinations of eligibility of BPA facilities on whether they retain sufficient historical integrity of location and setting, design, materials, workmanship, feeling, and association. To determine the eligibility of the BPA transmission facilities for listing in the NRHP, a Multiple Property Document (MPD) was prepared for BPA's transmission system (Kramer 2012). This MPD identified the group of related, significant properties that comprise BPA's transmission system, presented its historical context, and defined two types of properties that represent the context (Id.).

The BPA Albany Substation was determined eligible for listing in the NRHP as a historic district under Criterion A in the area of Government. This was based on its association with events that have made a significant contribution to the broad patterns of our history. The BPA Albany Substation helped provide reliable power to growing populations in the Willamette Valley and on the Oregon Coast and reflects the expansion of BPA's transmission system in the Pacific Northwest. The district retains integrity of location, setting, design, materials, workmanship, feeling, and association. The BPA Albany Substation control house and switchyard are contributing elements to the historic district.

To determine the eligibility of the BPA's microwave radio stations for listing in the NRHP, a BPA Microwave Radio Stations Historic Resources Technical Report was prepared that details the development and purpose of the radio system, and describes and evaluates each site (AECOM 2019). Based on the analysis in this report, the BPA Marys Peak communications site is recommended as eligible for the NRHP under Criterion A for its significance in the areas of Communications and Industry. The radio station became a key component of BPA's early microwave communications network, facilitated grid operations, and supported business and industrial development throughout the region, particularly the Corvallis, Oregon, area. Alterations to the site have been minimal and did not diminish overall integrity (AECOM 2019). The radio station retains integrity of location, design, setting, materials, workmanship, feeling, and association and meets the minimum eligibility requirements in the BPA MPD. The original antenna tower is no longer present, but it was replaced with the same type of structure. The building continues its original function and the antenna tower maintains line-of-sight with associated microwave communications sites.

The Prospect Hill Microwave Radio Station is not recommended as eligible for the NRHP based on the requirements of the BPA MPD and additional integrity considerations provided by the technical report (Kramer 2012, AECOM 2019). Although the radio station is part of the historic microwave communication network and it retains integrity of location, design, setting, materials, workmanship, and feeling, the replacement of the original antenna tower diminished the integrity of the site, such that it does not meet eligibility requirements.

Two communications sites that are not owned by BPA, the USFS Marys Peak communications site and the CPI West Point Spur communications site, could be affected by the Project. These sites have not been evaluated for inclusion in the NRHP. The USFS communications site would need to be evaluated if Alternative 3C is selected and the CPI West Point Spur communications site would need to be evaluated if Alternative 4 is selected.

TCPs were identified at Marys Peak and West Point Spur, including the area where the BPA communications site and CPI communications site are located. As noted, all such resources that could be affected by the Project will be evaluated for NRHP eligibility, depending on the alternative selected.

3.8.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications facility would not be rebuilt and impacts related to Project construction would not occur. Operations and maintenance activities would continue at the BPA Marys Peak and the BPA Prospect Hill communications sites and would be similar to existing practices. At the BPA Marys Peak communications site, the frequency and scope of maintenance activities would likely increase as existing structures deteriorate, and more structural repairs and

replacements are required. This could, in turn, result in additional ground disturbance that would have the potential to affect cultural resources.

Impacts associated with continued routine maintenance of both the BPA Marys Peak and BPA Prospect Hill communications sites, as well as emergency repairs, could have **low-to-moderate** impacts on cultural resources, depending on the type of cultural resource, the amount of damage to that resource, the eligibility of resources for listing on the NRHP, and the effectiveness of mitigation.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021).

Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future.

3.8.4 Environmental Consequences – Action Alternatives

Impacts Common to All Action Alternatives

BPA is required under the NHPA to consider the effects of implementing one of the action alternatives on historic properties, if one is selected. Depending on the action alternative, various ground-disturbing construction activities and improvements to buildings have the potential to affect historic properties. BPA is consulting with the SHPO and affected Tribes under the NHPA for the Project to determine if there would be an “adverse effect” on historic properties, as defined in Section 106 regulations. If there would be an adverse effect, BPA would work with consulting parties under NHPA to determine what type of actions would mitigate for adverse effects.

Cultural resource surveys of the APE at the BPA Marys Peak and CPI West Point Spur communications sites revealed no archaeological materials on the ground or during subsurface testing. Based on this result, **no** impacts on archaeological resources are anticipated from the Project under all action alternatives.

Some archaeological resources could be present in the APE that were not discovered during Project cultural surveys. Implementation of the mitigation measures described in Section 3.6.4 would ensure that any cultural resources discovered during construction would be managed properly as required by NHPA.

The BPA Marys Peak communications site is eligible for listing on the NRHP. It would be adversely affected under all action alternatives, as described below.

TCPs within the APE at the BPA Marys Peak and the CPI West Point Spur communications sites could be affected by implementation of any of the action alternatives. If impacts could not be avoided, impacts would be **low to moderate** with the implementation of applicable mitigation measures.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021).

Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future. Although there would be some permanent impacts from the Project to cultural resources, it is not expected that climate change would have the potential to further increase these types of impacts in the future.

Impacts Specific to Action Alternatives

Alternative 2A

Marys Peak

The BPA Marys Peak communications site is eligible for the NRHP. Under Alternative 2A, the wooden pole supporting the microwave dish would be replaced with a steel-lattice structure. Improvements would be made to the communications building, including repainting the building and installing equipment within the building. Because the replacement of the wood monopole with a steel-lattice structure would be a change of material, it would not be considered an in-kind replacement. This would result in a loss of integrity and design, resulting in an adverse effect. If Alternative 2A is selected, BPA would work with consulting parties to determine appropriate mitigation for this adverse effect, a **low to moderate** impact depending on the effectiveness of the mitigation.

BPA Albany Substation

The BPA Albany Substation is eligible for the NRHP. Under Alternative 2A, a microwave dish would be added to the existing steel-lattice structure and equipment would be added to the control house. The addition of equipment would be a relatively minor change, is consistent with changes permitted under BPA's MPD, and would not affect the characteristics that make the BPA Albany Substation eligible for listing in the NRHP or the function of the substation. Because the work under Alternative 2A would have **no** adverse effect on the eligibility of the BPA Albany Substation for the NRHP, there would be **no** impact. There would also be **no** impacts to archaeological resources and TCPs at the BPA Albany Substation.

Alternative 3C

Marys Peak

Under Alternative 3C, the BPA Marys Peak communications site would be dismantled and removed. The site would be restored to natural vegetation and there would be no evidence of the existing site. Because the BPA Marys Peak communications site is eligible for the NRHP, removal of the site would be an adverse effect. If Alternative 3C is selected, BPA would work with consulting parties to determine appropriate mitigation for this adverse effect, a **moderate** impact with mitigation.

Under Alternative 3C, an addition would be added to the USFS Marys Peak communications building and a steel-lattice structure would be constructed near the USFS communications building. BPA would become a tenant within the addition that would be constructed. Because the USFS communications site has not been evaluated for NRHP eligibility, effects to the resource cannot be determined until this evaluation has been completed and the SHPO has concurred with the determination. If Alternative 3C is selected and the USFS Marys Peak communications site is determined eligible for the NRHP, BPA would work with consulting parties to determine appropriate mitigation for any adverse effects, a **low to moderate** impact depending on the effectiveness of the mitigation.

BPA Albany Substation

The same work is proposed at BPA Albany Substation under Alternative 3C as is proposed under Alternative 2A. As discussed above, the addition of equipment to the control house and to the existing steel-lattice structure would not affect the characteristics that make BPA Albany Substation eligible for listing in the NRHP or the function of the substation and, therefore, would have no adverse effect on its eligibility for the NRHP, resulting in **no** impacts. There would also be **no** impacts to archaeological resources and TCPs at the BPA Albany Substation.

Alternative 4

Marys Peak

Under Alternative 4, the BPA Marys Peak communications site would be dismantled and removed. The site would be restored to natural vegetation and there would be no evidence of the existing site.

Because the BPA Marys Peak communications site is eligible for the NRHP, removal of the site would be an adverse effect. If Alternative 4 is selected, BPA would work with consulting parties to determine appropriate mitigation for this adverse effect, a **moderate** impact on a historic property with mitigation.

West Point Spur

Under Alternative 4, improvements would be made to the CPI West Point Spur communications site to enable BPA to occupy a portion of the existing building as a tenant. BPA would also install equipment and an ice bridge on the existing steel-lattice structure. Because the CPI communications site has not been evaluated for NRHP eligibility, effects to the resource cannot be determined until this evaluation has been completed and SHPO has concurred with the determination. If Alternative 4 is selected and the CPI West Point Spur communications site is determined eligible for the NRHP, BPA would work with consulting parties to determine appropriate mitigation for any adverse effects, a **low to moderate** impact depending on the effectiveness of the mitigation.

Prospect Hill

Under Alternative 4 the work at the Prospect Hill communications site would not affect cultural resources. There would be **no** impact on historic resources because the site is not considered eligible for the NRHP. There would be **no** impact on archaeological resources because work would take place in the graveled yard within the fence and there would be no ground disturbance that could affect subsurface resources. There would also be **no** impacts to TCPs at the BPA Albany Substation.

3.8.5 Mitigation – Proposed Action

The following mitigation measures will be pursued if one of the action alternatives is selected:

- Work with consulting parties to determine appropriate **mitigation for actions that will address** unavoidable adverse effects under the NHPA.
- Explain cultural resources-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Implement BPA's Inadvertent Discovery Protocol. This procedure specifies that if ground-disturbing activities reveal any cultural materials (e.g., structural remains, Euro-American artifacts, or Native American artifacts), all activities in the vicinity of the find must cease. The BPA archaeologist, Oregon SHPO, and affected Tribes would be notified immediately and consultation under Section 106 of the NHPA would begin.

3.8.6 Unavoidable Impacts after Mitigation

The potential **low to moderate** impacts to cultural resources described in Section 3.8.4 would be unavoidable under each action alternative. Implementation of the mitigation measures described in Section 3.8.5 would minimize construction-related impacts.

3.9 Socioeconomics

3.9.1 Study Area

The study area for socioeconomics includes Benton County, the county in which the BPA Marys Peak communications site and CPI West Point Spur communications site are located. The study area for the BPA Prospect Hill communications site and the BPA Albany Substation only includes the area within 1,000 feet of the fence around the facilities because the work would be minimal and would only take place over a few days.

3.9.2 Affected Environment

Population and Housing

Marys Peak and West Point Spur are located in Benton County in and near the Siuslaw National Forest (SNF), which also straddles Lincoln County in the northwest area of the forest. In 2018, the population in the surrounding area was estimated to be 92,101 in Benton County, which experienced a 7-8 percent population growth rate since 2010 (U.S. Census Bureau 2018). The closest incorporated town to Marys Peak is Philomath in Benton County. Its population was estimated at 4,715 (City of Philomath 2019). At a similar distance from the peak is the unincorporated community of Alsea, with an estimated population of 164 (U.S. Census Bureau 2010). The Marys Peak to Pacific Scenic Byway passes through Philomath and Alsea.

Most people living in Philomath and Alsea reside in single-family homes or apartments. There is a motel in Philomath and a bed-and-breakfast in Alsea. There are numerous options for overnight stays in the City of Corvallis, within 10 miles of Philomath. They include large motels and inns, and other smaller types of accommodation.

Employment and Contribution of Tourism to the Local Economy

The median household income in 2017 was \$54,682 in Benton County. Tourism, which accounted for \$118.5 million in direct travel spending in 2018 and raised 2 million dollars in local tax revenue, was responsible for 1,790 jobs. (Dean Runyan Associates 2019).

In Philomath, efforts being made to attract tourists include the current development of a recreational vehicle (RV) park (pers. comm. with Patrick Depa, Associate Planner, City of Philomath, August 13, 2019). An estimated 13,300 cars pass through Philomath daily and 5,000-7,000 cars a day travel between Philomath and Waldport on Highway 34 (Hall 2018). In April 2018, Highway 34 from Tangent to Waldport was officially recognized as a state scenic byway and named the Marys Peak to Pacific Scenic Byway. The byway stretches for 72 miles and passes through Corvallis, Philomath, Alsea, Tidewater, and Waldport. Much of the route runs alongside or through the Siuslaw National Forest. It also includes spurs, one of which takes visitors up to Marys Peak.

According to the SNF Visitor Use Report, the SNF receives an estimated 946,000 visitors a year with about 58 percent of those people coming from Lane and Lincoln Counties, 20.9 percent coming from a foreign country, and only about 4 percent coming from Benton County (USFS 2018b). About 25 percent of those come from over 200 miles away, including 14 percent of visitors who come from over 500 miles away. For visitors who spend one or more nights near or in the forest, nearly half (48.6 percent) stay at a National Forest Service campground and a quarter (25.4 percent) stay in a private rented home. When asked what they would do if, for some reason, they couldn't visit SNF, 20.6 percent said they would come back another time and 43.3 percent said they would go somewhere else for the same or a different intended activity.

3.9.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications facility would not be rebuilt and impacts related to Project construction would not occur. Operations and maintenance activities would continue at the BPA Marys Peak and the BPA Prospect Hill communications site and would be similar to existing practices. Any required repair of facilities as a part of ongoing maintenance or due to winter storm damage would be unlikely to have any effects on visitation, and therefore would have **no** impacts on socioeconomics.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future.

3.9.4 Environmental Consequences –Action Alternatives

Impacts Common to All Action Alternatives

Action alternatives would not result in permanent impacts on socioeconomics. Therefore, climate change would not have the potential to further increase the Project's impact on socioeconomics in the future.

Population and Housing

The number of Project workers would vary depending on the action alternative selected, but relatively few workers would be employed during the construction phase and most would likely permanently reside outside of Benton County. The origin of the work force is not known at this time and would depend on where the construction contractor is based. Because construction would be completed within a short time frame of up to six months, non-local workers are not expected to relocate their households to the study area.

If workers (and possibly some dependents) are from out of the area, they would require temporary lodging in the local area during construction. Construction workers might rent parking spaces for RVs or other live-in vehicles. A variety of motels and other types of lodging are located within reasonable commuting distance of the Project area. Because only a few workers, if any, would reside in the area during construction and their stay would be temporary, there would be **no** impacts on housing availability during construction. Because increased demand for housing would be temporary under any of the action alternatives, there would be **low** temporary impacts and **no** permanent impacts on regional population and overall demand for housing.

Local Economy

Implementation of one of the action alternatives would temporarily stimulate the local economy through some material purchases in the area, payroll to construction workers, and related indirect or multiplier effects. Multiplier effects occur when money that is spent continues to filter through the local economy, resulting in secondary benefits. For example, money paid to a temporary construction worker is spent at a local grocery store. In turn, sales at the store increase, resulting in increased profits, which in turn are spent elsewhere in the community.

Based on BPA experience with many similar projects, most of the workers are likely to reside outside of Benton County. Such workers typically reside temporarily near the construction site with or without their families, staying at RV parks, motels, or other lodging. They would purchase meals, groceries, gasoline, and other necessities from local restaurants and stores. The temporary income resulting from

the presence of workers in the community would constitute a **low**, beneficial impact on the regional economy.

Some disturbance of and temporary interference with recreational activities at Marys Peak would occur under all action alternatives. Impacts on recreation itself are discussed in Section 3.3 of this EA. Because of these impacts, fewer people might come to Marys Peak and might not stay as long, affecting the amount of money spent in nearby communities. If visitors to Marys Peak came during work on the access road, it might discourage visitors who come to see the summit from staying or from coming at all, if they are aware of the construction. Consequently, Project construction activities could have temporary economic impacts as described below.

Impacts Specific to Action Alternatives

Alternative 2A

Marys Peak

Alternative 2A would disrupt recreation, mainly during the construction of the steel-lattice structure and during access road improvement work at Marys Peak, a temporary **moderate** economic impact. There would be **no** impact on property values because activities would only occur on public lands.

BPA Albany Substation

Because construction at Albany Substation under Alternative 2A would only take a few days, any temporary impact on the salability of nearby residential properties would be low. The property values of residences near the Albany Substation are not expected to be permanently affected because the activities that would occur are those expected during routine maintenance.

Alternative 3C

Marys Peak

The greatest disruption to recreation would occur under Alternative 3C because the greatest amount of work would occur at Marys Peak (constructing an addition to the USFS building and a new steel-lattice structure, and removing the existing BPA communications site) and it would take the longest amount of time, a temporary **moderate** economic impact.

BPA Albany Substation

The same work is proposed at Albany Substation under Alternative 3C as under Alternative 2A.

Alternative 4

Marys Peak

Alternative 4 would disrupt recreation at Marys Peak during the removal of the existing BPA communications site, a temporary **moderate** economic impact. There would be **no** impact on property values because activities would only occur on public lands.

West Point Spur

Implementation of Alternative 4 could cause some disruptions to recreation during tree cutting along Marys Peak Road and during the removal of the BPA Marys Peak communications site. Because the disruption would be temporary and could be timed to occur at a time of lower visitation, there could be **low** temporary economic impacts. There would be **no** impact on property values because activities would only occur on public lands.

Work to improve an access road off Marys Peak Road and install equipment inside/outside the CPI building is anticipated to have **no** impact on recreation because the site has restricted access.

Prospect Hill

The minimal, short-term work that would occur at the BPA Prospect Hill communications site would have **no** temporary or permanent impacts on local population, housing availability, the local economy, or property values.

3.9.5 Mitigation Measures –Action Alternatives

The following mitigation measures are identified to minimize Project impacts on socioeconomics.

- Conduct a preconstruction public meeting and invite landowners, land managers, Benton County law enforcement, and communications site users to meet with construction contractors and BPA staff responsible for Project implementation to receive information and discuss concerns and receive contact information for construction contractor liaisons and BPA staff.
- Explain socioeconomics-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Coordinate with the USFS public affairs officer to develop a communications plan to notify recreational and other user groups about construction activities, including potential closures of roads, trails, and other areas via the USFS website, onsite signage, and other methods of public outreach.
- Require the construction contractor to employ a lands liaison, who would be available to provide information, answer questions, and address concerns during Project construction.
- Keep construction equipment clear of recreational resources, including parking and trails, to the greatest extent possible.
- *Schedule all construction work during daylight hours (7 a.m. to 7 p.m.).*
- *Avoid all work between the parking lot and the Marys Peak summit and at the Marys Peak summit communications site during federal holidays and weekends to minimize impacts to visitors.*
- Avoid removing the Marys Peak BPA communications site (Alternative 3C and Alternative 4) during *federal holidays and weekends and holidays* to minimize disturbance during periods of high visitation.

3.9.6 Unavoidable Impacts Remaining After Mitigation – Action Alternatives

Implementation of the mitigation measures described above would reduce, but not eliminate, economic disruptions associated with the proposed construction activities, mainly a temporary disruption of recreation or decrease in the quality of the experience of visitors at or near the Marys Peak summit.

3.10 Noise

3.10.1 Study Area

The study area for noise is defined as the Marys Peak communications site, the CPI West Point Spur communications site, the BPA Albany Substation, and the BPA Prospect Hill communications site. The noise study area includes the sites and all areas within 1,000 feet of the fences around each site. The study area for noise at Marys Peak and West Point Spur also includes areas within 1,000 feet of all work areas, including staging areas that would be outside the communications site fences, areas where trees would be cut to create an unobstructed beam path, and unpaved access roads that would be improved.

Potential noise impacts from implementation of the Project were evaluated within the study area. Construction activities would temporarily cause noise impacts that would not continue beyond the construction period. During operation of some communications facilities, noise would be generated intermittently by equipment within the buildings. Potential noise impacts on land use and recreation are covered in Section 3.1, Land Use and Recreation, and potential noise impacts on wildlife are covered in Section 3.4, Wildlife, of this EA.

3.10.2 Affected Environment

Overview

Noise is sound that is loud, disruptive, unexpected, or otherwise undesirable because it disrupts normal human activities and diminishes the quality of the human environment. Ambient noise at a location includes all noise generated by typical sources such as traffic, neighboring homes, businesses or industries, people talking, and natural noises such as the wind in the trees, the movement of waterways, falling drops of water, and animal noises, such as birdsong. The ambient noise level is typically a mix of noise from natural and human-made sources that may be near or distant.

Audible noise corresponds to how humans hear sound. Audible noise is commonly quantified in terms of **A-weighted decibels** (dBA), an instantaneous measurement of sound pressure. Figure 3-1 contains examples of common activities and their associated noise levels in dBA.

A person's perception of sound can be affected by the spatial distribution of the sound source, the duration of the sound, the time pattern of the sound, the time of day of the sound, and other factors (Caltrans 2009).

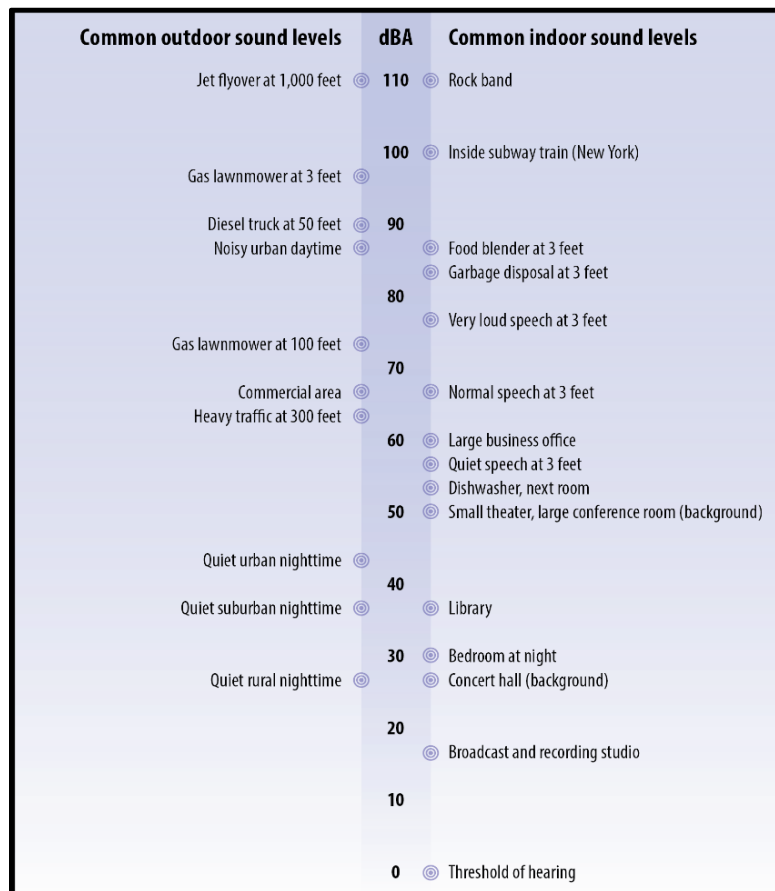


Figure 3-1. Common indoor and outdoor sound levels (U.S. Department of Energy 2011a).

The day-night noise level (L_{DN}) is a measure of the average dBA over a 24-hour period and imposes an additional 10-dBA weighting for sounds occurring at night. Table 3-4 shows examples of outdoor L_{DN} . For the purpose of describing the Project’s affected environment, the appropriate dBA values in this table are used to estimate baseline ambient noise levels. Measurements of noise levels were not conducted within the study areas.

Table 3-4. Outdoor Noise Levels

Outdoor Location	Noise Levels (L_{DN} in dBA)
Apartment next to freeway	87.5
Core commercial and heavy industry	75.0
Urban row housing on major avenue	68.0
Lighter industry	60.0
Old urban residential area	59.0
Wooded residential	51.0
Agricultural cropland	44.0
Rural residential	39.0
Open space (wetland, forest, open land)	35.0

Source: U.S. Environmental Protection Agency 1978; Caswell and Jakus 1977

The ability to perceive a new noise source intruding onto background conditions depends on the nature of the intruding sound and the background sound. For situations where the nature of the new sound is similar to the background sound (e.g., new traffic noise added to background traffic noise) a change of 3 dBA is just noticeable, a change of 5 dBA is clearly noticeable, and a change of 10 dBA is perceived as doubling or halving sound level. For situations where the nature of the new intruding sound is different from background sound (e.g., construction noise in an otherwise quiet setting), the new sound (including sporadic “clanks” from construction equipment) can be perceived even if it only raises the overall noise level by less than 1 dBA.

Noise Guidelines and Regulations

Noise regulations are established by the federal government as well as by the state of Oregon and some local governments. At the federal level, the U.S. Environmental Protection Agency (EPA) has established a guideline of 55 dBA for an average L_{DN} and 45 dBA for night-time noise levels (between 10 p.m. and 7 a.m.) in outdoor areas (EPA 1978). Table 3-5 (following page) shows average outdoor and indoor noise levels identified by EPA to protect public health and welfare, expressed as $L_{EQ(24)}$ (based on the dBA averaged over a 24-hour period) or L_{DN} (also based on the dBA over a 24-hour period, but imposing an additional 10-dBA weighting for sounds occurring during the night). The acceptable noise levels listed in the table are 24-hour averages over several years.

Construction noise and noise created by the installation or maintenance of “capital equipment” are exempted from state of Oregon noise regulations. (OAR 340-35). Benton, Linn, and Marion counties as well as the City of Albany either do not have established noise regulations or have regulations that are equivalent to or less stringent than the state and federal guidelines (Marion County 2008; City of Albany 2016).

Table 3-5. Average Noise Values to Protect Public Health and Welfare

Effect	Safety Level	Area
Hearing Loss	$L_{EQ}(24) \leq 70$ dBA	All areas
Outdoor Activity Interference and Annoyance	$L_{DN}(24) \leq 55$ dBA	Outdoors in residential areas and farms, and other outdoor areas where people spend widely varying amounts of time, and other places in which quiet is a basis for use.
	$L_{EQ}(24) \leq 55$ dBA	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor Activity Interference and Annoyance	$L_{DN} \leq 45$ dBA	Indoor residential areas
	$L_{EQ}(24) \leq 45$ dBA	Other indoor areas with human activities, such as schools, etc.

Source: EPA 1978

Noise-Sensitive Land Uses

Land uses most sensitive to noise typically include areas where people reside, work (e.g., businesses, hospitals, and schools), and locations where the presence of unwanted noise could adversely affect the use of the land. Noise-sensitive land uses in the study area include recreation and residential.

Sensitive receptors are those populations that are more susceptible to the effects of noise than the population at large and those located in close proximity to localized sources of noise. Table 3-6 shows the nearest sensitive receptors within 1,000 feet of the sources of Project noise, as well as corresponding land uses and the estimated ambient noise levels (based on the data in Table 3-4).

Table 3-6. Estimated Noise Levels for Noise-Sensitive Receptors within Project Area.

Project Component	Noise-Sensitive Receptor(s)	Distance of each Noise Receptor from Noise Source	Land Uses within 1,000 Feet	Estimated Ambient Noise Level (dBA)
Mary’s Peak Communications Site	Recreational users and other visitors	0 feet	Undeveloped forest and open land; recreation in the immediate vicinity	35.0
CPI West Point Spur Communications Site	Recreational users on Marys Peak Road	200 feet (distance of road from fence) and 15 feet from tree cutting area along Marys Peak Road	Undeveloped forest and open land	35.0
BPA Prospect Hill Communications Site	Residents	1000 feet	Agriculture; undeveloped forest land; rural residential	35.0 – 44.0
BPA Albany Substation	Hazelwood Park users; residents; recreational users on the Calapooia River	200 feet; 700 feet; 150 feet to nearest residence	Urban residential and commercial; light industrial; recreation; undeveloped forest; river recreational area	59.0 – 68.0

The Marys Peak study area includes portions of the Meadowedge Trail, North Ridge Trail, Summit Loop Trail, and Tie Trail as well as the Marys Peak Day Use Area. In these areas, recreational users could hear

Project-related noise. In addition, bicyclists and pedestrians could experience increased noise levels along a short stretch of Marys Peak Road (about 0.2 mile). The Marys Peak Campground is located over 2,000 feet from the nearest proposed construction area and is buffered by forest. As such, noise-sensitive receptors in the campground would not be expected to experience any increased noise levels from Project activities.

The West Point Spur study area includes about 1.1 miles of Marys Peak Road, where bicyclists and pedestrians could hear Project-related noise. The recreational trails and campsite associated with Marys Peak are outside of the West Point Spur study area.

The Prospect Hill study area includes a single rural residence, where residents could hear Project construction noise. The residence is located approximately 1,000 feet from the fenced communications site and is buffered from the communications site by forest.

The BPA Albany Substation study area includes noise-sensitive receptors who reside in the residential areas of the Chase Orchards subdivision and along SW Queen Avenue, SW 17th Avenue, SW 16th Avenue, and SW Summerfield Court. In addition, recreational users of Hazelwood Park and the Calapooia River could hear noise from Project activities.

Existing Ambient Noise Environment

The estimated existing ambient noise levels, as shown in Table 3-6, are based on the land use in the vicinity of each Project component. The study area around Marys Peak consists of undeveloped forest and open land used for recreation. Road infrastructure with low traffic volume provides access to the Marys Peak summit for recreation and for maintenance of the existing communications sites. Background noise levels found in rural environments without significant transportation or industrial noise are generally around 35.0 dBA, depending on weather conditions.

The predominant sources of noise in the Project area around Marys Peak include occasional use of maintenance vehicles and equipment, local traffic from visitors arriving and departing, and human activity, mainly associated with recreational activities. Sources of noise in the existing Marys Peak communications site are two engine generators (one owned by USFS and one owned by BPA), which are regularly tested and only used during power outages. In addition, the operation of a HVAC system in the USFS communications building creates noise during hot and cold weather. Operational noise from communications equipment and other sources within the USFS and BPA buildings is also occasionally audible.

The study area around the West Point Spur site consists of undeveloped forest and open land with low traffic volume roads. Unlike Mary's Peak, there is limited outdoor recreation around West Point Spur, primarily bird watchers. A source of noise in the CPI communications site is an engine generator, which is only occasionally used in the event of a power outage. There is no HVAC system installed in the CPI communications building. Background noise levels in this rural setting are estimated to be around 35.0 dBA.

Most of the study area around the Prospect Hill communications site consists of agricultural lands, undeveloped forest land, and scattered rural residences, which are accessed by road infrastructure with low traffic volume. Areas near public roads and residences likely experience background noise levels from farming and human activity as well as the operation and maintenance of existing communications sites. Background noise levels likely vary from 35.0 dBA to 44.0 dBA.

The study area around the Albany Substation consists of roads, urban mixed residential and commercial properties, and open and forested recreational land. Sources of noise in the study area include the substation itself, heavy vehicle traffic on Queen Avenue SW, and the sounds generated by park users. Ambient noise levels in the study area likely vary from 59.0 dBA to 68.0 dBA. BPA transmission lines

entering the substation may create audible *corona* noise during wet weather. However, BPA's design criterion for substation noise is 50 dBA at the substation property line, which is below the estimated ambient noise level in the study area.

3.10.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications facility would not be rebuilt and impacts related to Project construction would not occur. Operations and maintenance activities would continue at the BPA Marys Peak and the BPA Prospect Hill communications sites and would be similar to existing practices. Maintenance activities at the BPA Marys Peak communications site would result in **low** noise impacts because they occur infrequently. If it were necessary to perform emergency repairs at Marys Peak, it would likely not be possible to plan or time these activities to minimize noise impacts. Because potential noise impacts resulting from emergency repairs would be localized and likely to occur during winter months, *except for any repairs needed to the HVAC system during the summer months*, noise impacts would be **low**. At the BPA Prospect Hill communications site, there would be **no** noise impacts from maintenance activities and emergency repairs.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future.

3.10.4 Environmental Consequences –Action Alternatives

Potential noise impacts were assessed according to general methodology developed by the John A. Volpe National Transportation Systems Center for the Department of Transportation Federal Highway Administration (FHWA 2006). Potential noise impacts from Project construction and operation were compared to applicable noise thresholds and guidelines. EPA noise guidance for public health and welfare, shown in Table 3-5, was used to assess the noise impacts from Project construction.

Impacts Common to All Action Alternatives

Construction Noise

Construction activities would create temporary and intermittent noise starting beginning around 7 a.m. and continuing to about 7 p.m. Noise would result from the operation of vehicles and equipment, manual construction noise (e.g., hammering and clanking), and noise from increased human activity. Construction noise would be intermittent, with the duration depending on the activity. Table 3-7 on the following page summarizes noise levels generated by typical construction equipment that would likely be used.

As shown, noise levels at 50 feet from a construction site would range from about 55.0 to 87.5 dBA. Noise produced by construction equipment would decrease with distance at a rate of about 6 dBA per doubling of distance from the site (Caltrans 2009).

Construction noise impacts on noise-sensitive receptors for each Project component are estimated based on their distance to the noise source and noise attenuation. Noise-sensitive receptors beyond each Project study area (greater than 1,000 feet from work areas) are not likely to experience construction noise levels above 60 dBA.

Table 3-7. Typical Construction Noise Levels

Type of Equipment	Maximum Noise Levels, L _{MAX} (dBA) at 50 feet ¹
Access Road Improvement	
Crane and road grader	85.0
Dump trucks and other large trucks	84.0
Roller compacter and backhoe	80.0
Work trucks	55.0
Combined equipment noise level ³	87.5
Communications Site Construction	
Crane, concrete trucks, tractor trailer, road grader, excavator ² , bulldozer, manlift ²	85.0
Water trucks, flatbed trailer ² , fuel trucks ² , dump truck ² , line trucks ²	84.0
Backhoe and air compressor ²	80.0
Pickup truck ²	55.0
Combined equipment noise level ³	87.5

Sources: FTA 2006; FHWA 2006

Notes:

- Noise levels are default values (or equivalent) from Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) Version 1.1. The RCNM is the FHWA's national model for the prediction of construction noise (FHWA RCNM 2006).
- Equipment used during nonpeak construction period.
- Combined equipment noise levels based on two loudest pieces of equipment assumed to operate simultaneously, in accordance with the Federal Transit Administration (FTA) guidance on general assessment for noise impacts (FTA 2006).

Operational Noise

Noise impacts that would persist for as long as a communications site is in operation are considered permanent sources of noise. Primary sources of permanent noise include operation of backup engine generators and HVAC units. Only HVAC units would create continuous noise, at varying levels.

During operation, the impact of a communications site's audible noise would depend on the level of ambient noise, proximity of the source to noise sensitive receptors, and air temperature (which determines whether the HVAC system's compressor operates). Sound level data was obtained from manufacturers specifications for a similar model to the one that would be installed. Under each action alternative, an HVAC system would be installed with an internal fan in continuous operation. Although the USFS communications building currently has a HVAC system, an additional HVAC system would be installed in the new addition. At a distance of 10 feet indoors, the fan would generate a noise level of about 49 dBA, the equivalent of a typical conversation at home. From the building's exterior, audible noise from the operation of the fan would be lower than 49 dBA because the sound level would decrease with distance.

The HVAC thermostat would be set for cooling above 75 degrees Fahrenheit (°F) and for heating below 70 °F. At a distance of about 10 feet, a typical HVAC system's compressor produces noise levels up to 67 dBA. The outdoor compressor, which is the loudest component of the HVAC system, would only run when the unit is in cooling mode (indoor temperature above 75 °F and outdoor temperature above 65 °F. If the HVAC system is not in cooling mode, it would operate in economizer mode without running the compressor. For example, when indoor temperatures are above 75 °F but outdoor temperatures are below 65 °F, a damper opens to allow cooler exterior air to enter the building without using the

compressor. As a result, the sound level at 10 feet from the communications building would be lower than 67 dBA during the cooler times of year and the cooler times of day.

With an increase in average temperature and an increase in frequency, duration, and intensity of extreme heat events expected due to climate change, the HVAC within the communications building would operate more frequently. The HVAC would need to operate to prevent indoor temperatures from regularly exceeding 77 degrees Fahrenheit, which could damage batteries and equipment. Therefore, climate change would have the potential to further increase the Project's impact on noise resulting from the operation of the HVAC system at the Marys Peak summit or at West Point Spur, depending on the action alternative selected.

The engine generator is tested once per week for about 90 minutes to ensure that it is in proper working condition. This testing is conducted outside of peak recreational hours (e.g., at night on a weekday). BPA typically tests engine generators between 1 and 4 a.m. In addition to routine testing, the engine generator would operate during any loss of electrical service. Typically, loss of electrical service occurs as a result of severe weather, such as winter storms, when people are unlikely to be outdoors near a communications site. At a distance of 23 feet, a typical unhoused engine generator produces noise levels up to 75 dBA. However, because BPA installs engine generators inside of its communications building with an external exhaust system, noise levels outside of the fenced communications sites would be much lower.

Noise levels from operation of the communications sites would meet EPA noise guidance for public health and welfare (Table 3-5).

Impacts Specific to Action Alternatives

Alternative 2A

Marys Peak

Under Alternative 2A, improvements to the BPA facilities within the fenced area, cutting trees to create an unobstructed microwave beam path, and improvements to the access road would result in temporary and permanent noise impacts. Temporary construction noise would persist for the length of the construction period (up to 6 months) and would intermittently exceed current ambient conditions. Maximum noise levels from equipment operation could reach up to 87.5 dBA Lmax at 50 feet from the construction work area, which would likely decrease to less than 60 dBA at a distance of 1,000 feet or more from the source.

Noise-sensitive receptors located within the study area include recreational users and other visitors. Noise from construction activities would be audible from all or some portions of the North Ridge Trail, Tie Trail, Summit Loop Trail, and Meadowedge Trail as well as from Marys Peak Road, the Marys Peak Day Use Area, and the Marys Peak summit. Although construction noise would be temporary and intermittent, it would detract from the user experience in the study area, and some recreationists could choose to go elsewhere during the construction period. Therefore, temporary noise impacts from construction at the BPA Marys Peak communications site would be **moderate**.

Operation of the BPA communications site at Marys Peak would sometimes exceed current ambient conditions, resulting in a permanent noise impacts. Currently, the communications building does not have an HVAC system. Under Alternative 2A, a new HVAC system would be installed to maintain stable temperatures within the communications building. This new equipment, which would both cool and heat, would create noise up to 67 dBA when the compressor operates (see *Operational Noise* section above). Otherwise, the HVAC system would operate in economizer mode, which produces less noise. Since the USFS communications building currently has a wall-mounted HVAC unit, the BPA HVAC system would have an additive effect to the noise level, during the same time periods (hot and cold days).

During HVAC system operation, the noise would become audible to recreationists from portions of the Summit Loop Trail and the Meadowedge Trail as they approach the summit of Marys Peak. Because the noise would detract from the user experience, permanent noise impacts from the operation of the BPA Marys Peak communications site would also be **moderate**.

BPA Albany Substation

At the BPA Albany Substation, equipment installation inside the existing communications building and on the steel-lattice structure would temporarily create intermittent noise. The noise would be audible from Hazelwood Park, the Calapooia River, and private residences and businesses within 1,000 feet of the fenced area. However, construction activities would be completed within a few days. Operation of the communications site would not result in an increase in noise levels above the current ambient conditions, and operational noise would not be audible to the nearest noise-sensitive receptors. Therefore, temporary noise impacts from the installation of equipment at Albany Substation would be **low**, and there would be **no** permanent noise impacts.

Alternative 3C

Marys Peak

Under Alternative 3C, construction activities within the fenced area, at the parking lot staging area, along the access road, and from removal of the BPA communications site, along with tree cutting, would result in temporary noise impacts similar to those that would occur under Alternative 2A. Temporary construction noise would persist for the length of the construction period (up to 6 months) and would intermittently exceed current ambient conditions. Maximum noise levels from operation of equipment at the construction site could reach up to 88 dBA L_{max} at 50 feet from the construction site, which would decrease to less than 60 dBA at a distance of 1,000 feet or more from the noise source. Therefore, temporary noise impacts on recreational users from construction at the Marys Peak communications site would be **moderate**.

Under Alternative 3C, noise from the operation of the communications site would be the same as the level of operational noise that would occur under Alternative 2A because an HVAC system would be installed within the BPA addition to the USFS building. Therefore, permanent noise impacts from operation of the Marys Peak communications site would also be **moderate** under Alternative 3C.

BPA Albany Substation

At BPA Albany Substation, noise impacts would be the same under Alternative 3C as they would be under Alternative 2A because the same work would be done. Therefore, temporary noise impacts from the installation of equipment at the BPA Albany Substation would be **low**, with **no** permanent noise impacts.

Alternative 4

Marys Peak

Implementation of Alternative 4 would create temporary noise impacts from the use of vehicles and equipment to demolish and remove the existing BPA communications facilities. Although these construction noise impacts would be short-term and intermittent, it would detract from the user experience of the trails in the study area, and some recreationists could choose to recreate elsewhere during the construction period. Therefore, temporary noise impacts from the removal of the BPA Marys Peak communications site would be **moderate**.

The BPA-owned engine generator at the Marys Peak site would be removed under Alternative 4, eliminating noise currently produced during routine testing. BPA would also no longer be conducting maintenance at the site. There would be a slight reduction in noise due to the removal of the BPA Marys Peak communications site, a **low** beneficial effect.

West Point Spur

At West Point Spur, Project activities within the fenced CPI communications site and at the staging area immediately outside the fence, improvements of the access road, and tree cutting would result in noise impacts. Temporary construction noise would be audible from Marys Peak Road, persisting for the length of the construction period (up to 3 months) and intermittently exceeding current ambient conditions. Maximum noise levels from the operation of equipment at the construction site could reach up to 87.5 dBA L_{max} at 50 feet from the construction site, which would decrease to less than 60 dBA at a distance of 1,000 feet or more from the noise source. The only noise receptors would be people using a short stretch of Marys Peak Road and a limited number of recreational users who may be on West Point Spur. Therefore, temporary noise from construction at the CPI communications site would be **low**.

Operation of the communications site at West Point Spur would exceed current ambient conditions, resulting in a permanent noise impact. Currently, the CPI communications building does not have an HVAC system. Under Alternative 4, a new HVAC system would be installed to maintain stable temperatures within the communications building. This new equipment would intermittently create noise up to 67 dBA when the compressor turns on to heat or cool the building. Otherwise, the HVAC system would operate in economizer mode, which produces less noise. Because there are likely to be few recreational users within the study area at the CPI communications site under Alternative 4, permanent noise impacts during operation of the West Point Spur communications site would be **low**.

Prospect Hill

Under Alternative 4, Project activities would also create temporary noise impacts at the BPA Prospect Hill communications site. Noise-generating activities would include installing equipment inside the existing building, and reinforcing and installing new equipment on the existing steel-lattice structure. These activities would create intermittent noise impacts that would only persist for a few days. Operation of the communications site at Prospect Hill would not increase noise levels above the current ambient conditions and would not be audible at the nearest noise-sensitive receptor. Therefore, temporary noise impacts from the installation of equipment at the Prospect Hill communications site would be **low**, and there would be **no** permanent noise impacts.

3.10.5 Mitigation Measures

If one of the action alternatives is implemented, BPA would implement construction BMPs and mitigation measures to avoid or minimize noise impacts from the Project. The following measures would be implemented:

- Install the HVAC unit on the south-facing wall of the Marys Peak communications building addition (Alternative 3C) to minimize noise and visual impacts to visitors near the picnic table area located north of the communications site.
- Explain noise-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Coordinate with the USFS public affairs officer to develop a communications plan to notify recreational and other user groups about construction activities, including potential closures of roads, trails, and other areas via the USFS website, onsite signage, and other methods of public outreach.
- Require the construction contractor to employ a lands liaison, who would be available to provide information, answer questions, and address concerns during Project construction.
- Schedule all construction work during daylight hours (7 a.m. to 7 p.m.) and limit work to weekdays, if possible.

- **Avoid all work between the parking lot and the Marys Peak summit and at the Marys Peak summit communications site during federal holidays and weekends** Avoid conducting access road improvements on weekends or holidays to minimize impacts to visitors, if possible.
- **Avoid removing the Marys Peak BPA communications site (Alternative 3C and Alternative 4) during federal holidays and weekends to minimize disturbance during periods of high visitation.**
- Require sound control devices on all construction equipment powered by gasoline or diesel engines that are at least as effective as those originally provided by the manufacturer.
- ~~Request~~ **Require** that the construction contractor turn off construction equipment during prolonged periods of nonuse.

3.10.6 Unavoidable Impacts Remaining After Mitigation

Mitigation measures and construction BMPs would have very little effect on noise impacts because the operation of equipment is unavoidable. Some increased noise above the ambient noise level would be expected during construction under each of the Project alternatives and during operation of some facilities under some alternatives. The impact of construction and operational noise within the study areas would vary depending on the duration of construction, proximity to noise sensitive receptors, and intensity of noise relative to ambient conditions. Temporary and permanent impacts would be the same as discussed above in Section 3.10.4.

3.11 Air Quality and Greenhouse Gases

3.11.1 Study Area

The study area for the air quality analysis is defined as Benton County. The counties that include the BPA Albany Substation and the BPA Prospect Hill communications site are not considered in this section because the minimal amount of work proposed at both sites (no ground disturbance and no tree removal) would result in **no** impacts on air quality and greenhouse gas concentrations.

3.11.2 Affected Environment

Air Quality

The Oregon Department of Environmental Quality (ODEQ) and the U.S. Environmental Protection Agency (EPA) regulate air quality in Oregon. EPA has established the national ambient air quality standards (NAAQS) for six criteria air pollutants: **particulate matter**, sulfur dioxide, carbon monoxide, nitrogen dioxide, ozone, and lead. ODEQ has adopted the standards set by EPA. For the six **criteria pollutants**, NAAQS are defined as a maximum concentration above which adverse effects on human health may occur. The six criteria pollutants, described below, may be natural or human-made and may take the form of solid particles, liquid droplets, or gases.

Particulate matter (PM) is the term for small particles in the air, including dust, dirt, soot, smoke, and liquid droplets. Particles can be directly emitted into the air or formed in the air through chemical reactions. PM comes in a wide range of sizes. Some particles are large or dark enough to be seen as soot or smoke; others are so small that individually they can only be detected with an electron microscope. Particles less than 2.5 micrometers in diameter (PM 2.5) are referred to as “fine” particles. Sources of fine particles include combustion (motor vehicles, power plants, wood burning, etc.) and some industrial processes. Particles between 2.5 and 10 micrometers in diameter are “coarse” particles (PM10). Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads.

Sulfur dioxide (SO₂) is a colorless, reactive gas produced during burning of sulfur-containing fuels, such as coal and oil. SO₂ emissions result mostly from stationary sources, such as coal and oil combustion, steel mills, refineries, pulp and paper mills, and nonferrous smelters.

Carbon monoxide (CO) is a colorless, odorless, and poisonous gas. CO forms when the carbon in fuels does not completely burn. Vehicle exhaust contributes about 60 percent of all CO emissions nationwide and up to 95 percent in cities. Other sources of CO include fuel combustion in industrial processes and natural sources, such as wildfires. CO concentrations are typically highest during cold weather when less complete combustion causes inversions that trap pollutants low to the ground.

Nitrogen dioxide (NO₂) is a brownish, highly reactive gas present in all urban atmospheres. NO₂ contributes to the formation of both ozone and acid rain and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO₂ in the atmosphere is oxidation of the primary air pollutant, nitric oxide.

Nitrogen oxide (NO_x) refers to various nitrogen oxides most relevant to air pollution, including nitric oxide (NO) and others. Because nitrogen oxides form when fuel is burned at high temperatures, the two major NO_x emission sources are automobiles and stationary fuel combustion sources.

Ozone (O₃) is a gas that forms in the atmosphere when three atoms of oxygen are combined. It is not emitted directly into the air, but is created at ground level by a chemical reaction between oxides of nitrogen and volatile organic compounds in the presence of sunlight. O₃ has the same chemical structure whether it occurs high above the earth or at ground level and can be “good” or “bad,”

depending on its location in the atmosphere. Ground-level or “bad” O₃ harms human health, and damages vegetation and many common materials. It is a key ingredient of urban smog.

Lead (Pb) is found naturally in the environment as well as in manufactured products. Due to the phase-out of leaded gasoline, airborne Pb is no longer a problem in most of the U.S. The major source of Pb emissions today is metals processing and the highest levels of Pb in air are generally found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers.

When air quality in an area exceeds the NAAQS, it is designated a **nonattainment area**. Marys Peak and West Point Spur are not within nonattainment areas (ODEQ 2019).

Greenhouse Gases

Greenhouse gases (GHGs) are chemical compounds found in the Earth’s atmosphere that absorb and trap infrared radiation as heat. Global atmospheric GHG concentrations are a product of continuous emission (release) and removal (storage) of GHGs over time. In the natural environment, this release and storage is largely cyclical. Through photosynthesis, plants capture atmospheric carbon as they grow and store it in the form of sugars. When plants decay or are burned, the stored carbon is released back into the atmosphere, available to be taken up again by new plants (Ecological Society of America, 2008).

In forests, carbon can be stored for long periods of time, and because they are so productive and long-lived, forests have an important role in carbon capture and storage, serving as temporary carbon reservoirs. Large amounts of GHGs are also stored underground in the form of **fossil fuels**, and soils store carbon in the form of decomposing plant material, serving as the largest carbon reservoir on land.

Human activities such as deforestation, soil disturbance, and burning of fossil fuels disrupt the natural cycle by increasing the GHG emission rate over the storage rate, which results in a net increase of GHGs in the atmosphere. When forests are permanently converted to cropland, for instance, or when new buildings or roads displace vegetation, the GHG storage capacity of the disturbed area is diminished. Carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄) emissions increase when soils are disturbed (Kessavalou et al 1998). Burning fossil fuels releases GHGs that have been stored underground for thousands of years and cannot be readily replaced. The resulting buildup of heat in the atmosphere due to increased GHG levels increases temperatures, which causes warming of the planet through a greenhouse-like effect (EIA 2019).

The principal GHGs emitted into the atmosphere through human activities are CO₂, CH₄, N₂O, and fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) (EPA 2013). These are described below.

Carbon dioxide (CO₂) is the major GHG emitted (EPA 2013a). CO₂ enters the atmosphere as a result of such activities as land use changes, the burning of fossil fuels (e.g., coal, natural gas, oil, and wood products), and the manufacturing of cement. CO₂ emissions resulting from the combustion of coal, oil, and gas constitute 82 percent of all U.S. GHG emissions (EPA 2016). Before the industrial revolution, CO₂ concentrations in the atmosphere were roughly stable at 280 ppm. By 2015, CO₂ levels had increased to 401 ppm, a 43 percent increase, as a result of human activities (EPA 2016).

Methane (CH₄) is emitted during the processing and transport of fossil fuels, through intensive animal farming, and by the degradation of organic waste. CH₄ concentrations in the atmosphere have more than doubled since preindustrial times (EPA 2016).

Nitrous oxide (N₂O) is emitted during agricultural and industrial activities and during the combustion of fossil fuels and solid waste. N₂O atmospheric levels have increased 17 percent since the 1920s (EPA 2016).

Fluorinated gases, including HFCs, PFCs, and SF₆, are synthetic compounds emitted through industrial processes. They sometimes replace ozone-depleting compounds, such as chlorofluorocarbons (CFCs) in

insulating foams, refrigeration, and air-conditioning. Fluorinated gases, particularly SF₆, are often used in substation equipment. SF₆ is used as an electrical insulator in high-voltage substation equipment such as circuit breakers, transformers, and ground switches. Although fluorinated gases are emitted in small quantities, fluorinated gases have the ability to trap more heat than CO₂ and are considered gases with a high global warming potential (EPA 2016).

Effects of Climate Change in the Project Vicinity

The Oregon Climate Change Research Institute issues a biennial report, The Oregon Climate Assessment, that presents the current state of climate change science and the latest projected effects of climate change in Oregon (Dalton and Fleishman 2021). The most recent assessment, released in January 2021, includes the following climate change observations and projections:

- *Average temperature is projected to increase 5 degrees Fahrenheit by 2050 and 8.2 degrees Fahrenheit by 2080, with the greatest increases in summer.*
- *Extreme heat events are projected to increase in frequency, duration, and intensity.*
- *Heavy precipitation events are projected to increase in frequency and intensity, particularly in winter, and the proportion of precipitation falling as rain rather than snow is projected to increase.*
- *Overall, precipitation is projected to increase in the winter and decrease in the summer.*
- *Snowpack is projected to accumulate more slowly, reach lower peak values, and melt earlier.*
- *Droughts are likely to increase in frequency, extent, and severity as summers become warmer and drier and mountain snowpack decreases.*
- *Wildfire frequency and area burned annually are projected to increase, although to a lesser extent in the Coast Range.*
- *Depending on how vegetation and fire weather shift with climatic changes and fuel and fire management strategies, fire severity may also increase.*
- *Climate change affects the lifecycle of some plants and animals and the viability of some species; the ability of species to adapt behaviorally, physically, or genetically to climate change in part depends on the speed of climate change, the level of other environmental stressors, and genetic diversity.*

3.11.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing communications facility would not be rebuilt and impacts on air quality and GHG levels from construction activities and tree cutting would not occur. Operations and maintenance activities and emergency repairs would continue at the BPA Marys Peak and the BPA Prospect Hill communications sites and would be similar to existing practices.

As noted above, current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future. However, operations and maintenance activities and emergency repairs would affecting air quality temporarily and intermittently and contributing small amounts of GHG emissions to global concentrations – a **low** temporary impact to air quality and **low** permanent greenhouse gas concentrations.

3.11.4 Environmental Consequences – Action Alternatives

Impacts Common to All Action Alternatives

None of the action alternatives would result in a permanent impact on air quality following completion of the Project. Tree removal under all of the action alternatives represents a reduction in the carbon storage reservoir, which would have a low permanent impact on global GHG concentrations. However, climate change would not have the potential to increase the affected environment in such a way that would require additional Project-related tree removal. Therefore, climate change would not have the potential to further increase the Project's impact on air quality and greenhouse gases in the future.

A reliable communications site is critical to BPA's ability to quickly and safely restore service during outages, which could increase in the future given the projected increase in frequency and intensity of precipitation events and wildfires. Under all action alternatives, the upgraded communications site would be more resilient to climate change, which would enable BPA to better address climate change-related outages, a low beneficial effect to BPA's operational maintenance.

Climate change could increase the need and frequency of maintenance activities and emergency repairs. Winter precipitation events are projected to increase in frequency and intensity, which justifies the need for a more stable communications structure than the existing wood pole, to prevent the microwave dish from shifting and interrupting communications signals. More severe winter storms would also increase the need for reliable back-up power.

Because impacts on air quality would vary by action alternative; common impacts are not considered here. See the next section for discussion of impacts specific to each action alternative.

Impacts Specific to Action Alternatives

Alternative 2A

Marys Peak

Under Alternative 2A, Project construction could affect air quality, mostly during peak activity periods. An increase in dust would be the main impact to air quality. **Fugitive dust** could be created when soils are disturbed during communications site work, access road improvements, and by travel on unpaved surfaces. PM levels will be partially reduced by implementing the mitigation measures described in Section 3.9.3 to control dust during construction, as needed. Although construction activities could increase dust and particulate levels, impacts would be **low to moderate** because the increase would be temporary, would occur in localized areas, and would not be expected to exceed air quality standards.

The operation of vehicles and heavy equipment during construction would result in temporary increases of criteria pollutants including CO, SO₂, NO_x, and PM, as well as other combustion byproducts, such as CO₂ and volatile organic compounds. The increase in vehicle and heavy equipment emissions would be temporary and localized to specific work areas and would change on a daily or weekly basis, comparable to the operation of agricultural and logging equipment in rural areas and to small-scale land development activities in more urban and suburban areas. For these reasons, impacts on air quality from vehicle and heavy equipment operation during construction would be **low**. There would be **no** permanent impacts on air quality.

Project construction would result in GHG emissions, primarily in the form of CO₂, N₂O, and CH₄ from the use of vehicles and heavy equipment. Trees would be cut under all action alternatives to create an unobstructed microwave beam path. Although tree cutting does not immediately emit GHGs and is not considered a direct emission, it would result in a permanent loss of a carbon storage reservoir. Removal of other vegetation and soil disturbance could also result in an increase in GHG concentrations. However, research has shown that emissions as a result of soil disturbance are short-lived and return to

background levels within several hours (Kessavalou et al. 1998; IPCC 2014). Carbon that would be stored in removed vegetation would be offset in time by the growth and accumulation of carbon in soils and new vegetation.

Under Alternative 2A, less than an acre of trees would be cut and Project construction would disturb less than 0.5 acre of other vegetation and soil, most of which would be revegetated. For these reasons, the permanent impacts on global GHG concentrations would be **low**.

BPA Albany Substation

Under Alternative 2A, the minimal amount of work proposed at the Albany Substation would result in no ground disturbance and no tree removal. Due to the minimal amount of work, there would result in **no** impacts on air quality and greenhouse gas concentrations.

Alternative 3C

Marys Peak

Under Alternative 3C, construction activities within the fenced area, at the parking lot staging area, along the access road, and from removal of the BPA communications site, would result in temporary impacts to air quality similar to those that would occur under Alternative 2A. Although construction activities could increase dust and particulate levels, impacts would be **low to moderate** because the increase would be temporary, would occur in localized areas, and would not be expected to exceed air quality standards. Impacts on air quality from vehicle and heavy equipment operation during construction would be **low**. There would be **no** permanent impacts on air quality.

Under Alternative 3C, less than an acre of trees would be cut and Project construction would disturb less than 0.5 acre of other vegetation and soil, most of which would be revegetated. For these reasons, the permanent impacts on global GHG concentrations would be **low**.

BPA Albany Substation

Under Alternative 3C as under Alternative 2A, the minimal amount of work proposed at the Albany Substation would result in no ground disturbance and no tree removal. Due to the minimal amount of work, there would result in **no** impacts on air quality and greenhouse gas concentrations.

Alternative 4

Marys Peak

Under Alternative 4, construction activities associated with the removal of the BPA communications site would result in temporary impacts to air quality. Although construction activities could increase dust and particulate levels, impacts would be **low to moderate** because the increase would be temporary, would occur in localized areas, and would not be expected to exceed air quality standards. Impacts on air quality from vehicle and heavy equipment operation during construction would be **low**. There would be **no** permanent impacts on air quality.

West Point Spur

Under Alternative 4, construction activities within the fenced area, in the staging area outside the fence, and along the access road, would result in temporary impacts to air quality similar to those that would occur under other action alternatives. Although construction activities could increase dust and particulate levels, impacts would be **low to moderate** because the increase would be temporary, would occur in localized areas, and would not be expected to exceed air quality standards. Impacts on air quality from vehicle and heavy equipment operation during construction would be **low**. There would be **no** permanent impacts on air quality.

Under Alternative 4, less than an acre of trees would be cut and Project construction would disturb less than 0.5 acre of other vegetation and soil, most of which would be revegetated. For these reasons, the permanent impacts on global GHG concentrations would be **low**.

Prospect Hill

Under Alternative 4, the minimal amount of work proposed at the Prospect Hill communications site would result in no ground disturbance and no tree removal. Due to the minimal amount of work, there would be **no** impacts on air quality and greenhouse gas concentrations.

3.11.5 Mitigation Measures – Action Alternatives

If one of the Project action alternatives is implemented, BPA will implement the following mitigation measures to minimize impacts on air quality and GHG emissions:

- Explain air quality and greenhouse gas-related BMPs and mitigation measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.
- Locate staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites.
- Encourage use of carpooling and shuttle vans among construction workers to minimize construction-related traffic and associated emissions.
- Limit vehicle speeds on unpaved roads and surfaces to 10 miles per hour or less to reduce dust.
- Obtain rock and gravel used for road surfacing, fill material, and other uses from **a quarry that is approved by the SNF botanist prior to installation on Marys Peak, and ideally is local and ODA-certified weed-free sources.**
- Control dust during construction with water or other appropriate control methods, without the use of chemical additives, as needed.
- ~~Request~~ **Require** that the construction contractor turn off construction equipment during prolonged periods of nonuse.
- Require that all engines in vehicles used for construction, operation, and maintenance are maintained in good operating condition to minimize exhaust emissions.
- Use alternative fuels for generators at construction sites, such as propane or solar, or use electrical power where practicable.
- Recycle or salvage nonhazardous construction and demolition debris where practicable.
- Encourage use of the proper size of equipment for the job to maximize energy efficiency.

3.11.6 Unavoidable Impacts Remaining after Mitigation

Implementation of the mitigation measures described above would reduce impacts on air quality and reduce GHG emissions, but would not completely eliminate impacts. Temporary increases in criteria pollutants could occur in the vicinity of construction sites, but would not be expected to violate current air quality standards. GHG emissions would also increase temporarily as a result of construction due to ground disturbance and equipment operation.

3.12 Public Health and Safety

3.12.1 Study Area

The study area for public health and safety includes the area within 500 feet of each Project component (communications site and the associated access roads that would be improved). Sensitive land uses within or near the study area include residences, agricultural areas, recreation areas including trails, and other areas where people might be present.

3.12.2 Affected Environment

Communications sites could pose risks to humans if they are not constructed, operated, or maintained properly. Potential risks include electrocution, fire, exposure to toxic and hazardous substances, and electromagnetic radiation exposure. BPA designs its communications facilities to meet safety requirements in order to prevent or reduce these risks. Safety measures include installing gates, providing fencing, and locking communications buildings to prevent unauthorized use of communications sites, and ensuring construction contractors implement a safety plan. To ensure safe conditions, BPA periodically inspects communications sites.

General Health and Safety

Most of the Project components are located in rural, sparsely populated areas except for the BPA Albany Substation. The Albany Substation is within the City of Albany. It is located near other industrial facilities, adjacent to a public park, and across the street from a residential area.

Wildland fire hazards in the study area, including both natural and human-caused fires, pose a safety hazard to the public. Construction equipment and vehicles can start fires if they are not operated properly. Fire danger in western Oregon is generally the highest in the dry summer months. Because much of the study area is forested or covered by grasslands, forest fires and grassland fires would be the most common type of fires near Project components.

Communications sites can become a target for vandalism, sabotage, and terrorism, known as intentional destructive acts. Most of the Project components are in unpopulated areas, which make them vulnerable to vandalism; vandals have caused some damage at BPA communications sites.

Hazardous waste sites that could be encountered in the study area include illegal dump sites, illicit drug labs, buried chemical drums, unreported chemical spills, and old mines. In more developed areas, contaminated sites are generally identified and listed with regulatory agencies. Because the Marys Peak portion of the study area receives many visitors and the access road is gated, the risk of encountering unreported hazardous waste sites or unreported contamination during Project construction is unlikely. Because the West Point Spur and Prospect Hill sites are gated, and work would mainly occur within the fenced communications sites, it is also unlikely that waste or contamination would be encountered.

Managing vegetation around communications sites is needed to prevent trees from falling into the fenced area, to ensure access to communications sites, to control noxious weeds, and to ensure that an unobstructed beam path is maintained. Vegetation management can potentially harm humans, wildlife, and crops unless appropriate practices are followed. Handling herbicides, felling or topping trees, using sharp tools, machinery, and heavy equipment can create health and safety risks.

Electromagnetic Fields (EMF)

Electromagnetic fields (EMFs) refer to the areas where electromagnetic energy is present, and they exist everywhere electricity is used. EMF levels vary widely throughout the study area, depending on the proximity to electronic devices or electrical lines and whether intervening landscape or walls exist.

In general, existing EMF levels are higher in developed areas with electrical lines and buildings with electrical wiring, electrical equipment, and appliances. BPA communications sites receive their power from local distribution lines and are not involved in generating or transmitting electricity. An EMF consists of two components: an electric field and a magnetic field.

Electric Fields

Electric fields are measured in volts per meter (V/m) or kilovolts per meter (kV/m). Throughout a home, the average electric field strength from wiring and appliances can range from 5 to 20 V/m, but is often less than 10 V/m (Bracken 1990). Localized electric fields near a small household appliance can range from 30 to 60 V/m, but field strengths drop off sharply with distance from the source. If an appliance or electrical device is connected to the power source, electric fields are present even when it is turned off. Electric-field levels in public buildings, such as shops, offices, and malls are comparable with residential levels. There are no national standards for electric fields from communications sites. BPA does not have magnetic field guidelines for communications sites.

Magnetic Fields

Magnetic fields result from the flow of electric currents through wires and electrical devices. Magnetic fields are measured in units of gauss (G) or milligauss (mG), with 1 G equal to 1,000 mG. Average magnetic field strength in most homes (away from electrical appliances and home wiring, etc.) is typically less than 2 mG. However, appliances carrying high current or those with high-torque motors, such as microwave ovens, vacuum cleaners, or hair dryers, may generate fields of tens or hundreds of milligauss. Office workers operating electric equipment and industrial workers can be exposed to similar or higher magnetic fields. Outdoor magnetic fields in publicly accessible places can range from less than 1 to about 1,000 mG, with the highest levels near devices powered by large electric motors.

Like electric fields, magnetic fields decrease with distance from the source. Magnetic fields differ from electric fields in that their levels vary depending on the amount of current flowing through a conductor, rather than the voltage. As such, if an appliance or electrical device is turned off, but still connected to the power source, magnetic fields are not present. In general, the strength of a magnetic field increases as the current increases, but at any point also depends on characteristics of the source. There are no applicable regulations for the regulation of magnetic fields in Oregon. BPA does not have magnetic field guidelines for communications sites.

Health Effects of EMF

After decades of research, the issue of whether any long-term health effects are associated with EMF remains inconclusive. Magnetic fields are most in question as possible sources of long-term effects, although studies sometimes lump the electric and magnetic fields together. Scientific reviews of the research on EMF health effects have found that evidence is insufficient to conclude that EMF exposures lead to long-term health effects (Exponent 2015). BPA looks to the determinations of the National Institute of Environmental Health Science (NIEHS), which largely came to the same conclusion. However, some uncertainties remain for childhood exposures to magnetic fields at levels above 4 mG (NIEHS 1998, 1999, 2002).

Electromagnetic Radiation (EMR)

Radiation is the propagation of energy through space that can take the form of either waves or particles. The propagation of electromagnetic energy is one type of radiation, referred to as ***electromagnetic radiation*** (EMR). EMR can be thought of as waves of electric and magnetic energy moving together (e.g., radiating) through space. These waves are generated by the movement of electrical charges such as in a conductive metal object or antenna. For example, the alternating movement of charge in an antenna used by a radio or television broadcast station generates electromagnetic waves that radiate

away from the transmitting antenna and are then intercepted by the receiving antenna such as a rooftop TV antenna, car radio antenna, or an antenna integrated into a cell phone.

EMR exists across an electromagnetic spectrum from very high-frequency (high-energy) waves to very low-frequency (low-energy) waves. The frequency of EMR is measured in waves per second using the measures kilohertz (one thousand hertz or KHz), megahertz (one million hertz or MHz), and gigahertz (one billion hertz or GHz). Radio Frequency (RF) waves, which include both radio waves and microwaves, exist at the low-frequency end of the electromagnetic spectrum with frequencies ranging from about 3 kilohertz to 300 gigahertz. As an example, the signal from a FM radio is described by the frequency; a radio station known at 101.5 FM emits radio waves at a frequency of 101.5 million cycles (waves) per second or 101.5 MHz). Just like an EMF, an RF field refers to anywhere that RF waves are present, and it can be described in terms of the electric and/or magnetic field strength at that location.

RF waves occur naturally and are produced artificially for a variety of human uses, including full body scanners for security and medical screening, and microwave ovens. An important use for RF energy is providing telecommunications services, including radio and television broadcasting, cellular telephones, cordless telephones, radio communications for federal and state agencies, police and fire departments, amateur radio, microwave point-to-point links, and satellite communications. The Federal use of the spectrum is managed by the National Telecommunications and Information Administration (NTIA), located within the U.S. Department of Commerce; the Federal Communications Commission (FCC) manages non-federal use of the spectrum.

High-frequency radiation – including X-rays, gamma rays, and some higher energy ultraviolet (UV) radiation – is known as ionizing radiation. Ionizing radiation has enough energy to remove an electron from an atom or molecule. Ionization can damage biological tissue, including the DNA inside of cells, which can lead to cancer (American Cancer Society 2018). RF radiation is non-ionizing radiation, which means it does not have enough energy to ionize an atom or molecule. RF has even lower energy than some other types of non-ionizing radiation, such as visible light and infrared.

Microwave Radiation

Microwave radiation is a type of non-ionizing radio waves that has frequencies ranging from around 300 MHz to 300 GHz. Microwaves are widely used for telecommunications purposes such as for cellular, radio, microwave point-to-point communication, satellite communications, and in certain broadcasting operations.

Point-to-point microwave antennas transmit and receive microwave signals across relatively short distances. For this Project, a circular microwave dish antenna would be mounted on a supporting steel-lattice structure. Because it would transmit microwave signals in a directed beam to the receiving antenna, dispersion of microwave energy outside of this narrow beam would be minimal.

Microwave antennas transmit using very low power levels, usually on the order of a few watts or less. Measurements have shown that ground-level power densities due to microwave directional antennas are normally thousands of times or more below recommended safety limits.

Very High Frequency (VHF) Radiation

Very high frequency (VHF) radiation consists of non-ionizing radio waves that have frequencies ranging from around 30 MHz to 300Mz (FDA 2017). VHF RF is widely used for telecommunications purposes. BPA uses VHF to transmit audio signals to and from field workers and communications sites. VHF is omnidirectional, meaning that the signal radiates out in a wedge-shaped area, as shown in Figure ~~1-12~~ 4. This enables field workers to pick up audio signals in a large geographic area. As with all forms of electromagnetic energy, the strength of VHF radiation decreases rapidly with distance from the antenna.

Health Effects of EMR

In the United States, the FCC has adopted and used recognized safety guidelines for evaluating RF environmental exposure since 1985. The FCC's established guidelines incorporate limits for Maximum Permissible Exposure (MPE) for transmitters operating at frequencies between 300 kHz and 100 GHz (FCC 2019).

These guidelines for human exposure to RF electromagnetic fields were derived from the recommendations of two expert organizations, the National Council on Radiation Protection and Measurements (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). Both the NCRP exposure criteria and the IEEE standard were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The exposure guidelines are based on thresholds for known adverse effects, with margins of safety. In adopting the current RF exposure guidelines, the FCC consulted with the EPA, FDA, Occupational Safety and Health Administration (OSHA), and NIOSH.

The NCRP, IEEE and ICNIRP guidelines for maximum permissible exposure are different for different transmitting frequencies. This is due to the finding that whole-body human absorption of RF energy varies with the frequency of the RF signal. The most restrictive limits on whole-body exposure are in the frequency range of 30-300 MHz where the human body absorbs RF energy most efficiently when the whole body is exposed. The exposure limits used by the FCC are expressed in terms of Specific Absorption Rate (SAR), EMF strength and power density for transmitters operating at frequencies from 100 kHz to 100 GHz. The applicable limits depend upon the type of source, such as a cellphone or VHF antenna.

There are many published reports in the scientific literature concerning possible biological effects resulting from animal or human exposure to RF energy and if those biological effects pose a biological hazard. Although RF radiation is non-ionizing, it does have enough energy to vibrate atoms in a molecule, which can cause them to heat up.

Most people are nearly constantly exposed to low levels of RF radiation. Although non-ionizing RF radiation does not cause cancer by damaging cell DNA the way ionizing radiation does, there has been concern about a potential link between RF radiation exposure and health problems, including cancer in some circumstances. Some experimental data, such as a study from the U.S. National Toxicology Program, have suggested a possible link between exposure to RF radiation and health problems under certain specific conditions (U.S. National Toxicology Program 2018). Based on one study, the International Agency for Research on Cancer (IARC), which is part of the World Health Organization, evaluated cancer risk from RF radiation among heavy cell phone users and concluded that RF radiation as "possibly carcinogenic to humans" (American Cancer Society, 2018).

However, many other studies have failed to find conclusive evidence for a link to cancer or any related condition. Studies of people who may have been exposed to RF radiation at their jobs (such as people who work around or with radar equipment, those who service communications antenna, and radio operators) have found no clear increase in cancer risk. Overall, results have been inconclusive, and it's not clear if RF radiation might be able to cause cancer.

3.12.3 Environmental Consequences – No Action Alternative (Alternative 1)

Under the No Action Alternative, the existing BPA Marys Peak communications site would not be upgraded. Therefore, the impacts related to construction of any of the action alternatives would not occur. Operation and maintenance activities at the Marys Peak site would continue. However, because of the aging wood monopole structure, outdated equipment and inadequate back-up power at Marys Peak, BPA's communications system would continue to have impaired communications at times, particularly during storms, which would challenge BPA's ability to maintain critical communications with

employees in the field during emergency repairs of BPA transmission lines. Any required repair of facilities at Marys Peak due to winter storm damage could also pose some risks to worker safety due to the harsh working conditions and difficulty accessing the site. This could have **low to moderate** potential impacts on employee and public safety. Existing EMF, microwave radiation, and VHF radiation from the BPA Marys Peak communications site would continue without change, having **low** impacts.

Despite the presence of security infrastructure at the BPA and USFS communications site on the Marys Peak summit, a recent vandalism incident occurred in the spring of 2021. This vandalism incident at the existing BPA communications site is evidence that there is a moderate level of risk of theft, vandalism, or acts of sabotage or terrorism.

Under the No Action Alternative, work would not be conducted on the existing steel-lattice structure at the BPA Prospect Hill communications site but operation and maintenance activities would continue, with **low** impacts to employee safety. Ongoing operations would result in ongoing VHF radiation emissions, a **low** impact. There would be **no** impacts from exposure to EMF, microwave radiation, or to public safety due to the site's restricted access.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future.

3.12.4 Environmental Consequences –Action Alternatives

Impacts Common to All Action Alternatives

General Health and Safety

BPA designs its facilities to prevent or reduce safety risks to the public, such as installing gates to prevent unauthorized access and providing fencing to prevent inappropriate use of communications sites. In addition, BPA conducts periodic inspections by visiting the site.

Construction of any of the action alternatives could result in a temporary increased risk of fires and injury from the use of heavy equipment and hazardous materials, such as fuels, cranes, and other activities associated with constructing steel-lattice structures. In addition, there are potential safety issues with construction traffic in the study area during construction. Vehicle speeds would be restricted to less than 10 miles per hour on unpaved access roads to reduce the potential for accidents with hikers.

The general public would not be allowed in construction areas while work is ongoing that has the potential to harm people, and therefore the public would not be at risk of injury from construction. By following all safety requirements and implementing the mitigation measures described below in Section 3.12.4, Mitigation, construction activities would create temporary, **low** impacts on the health and safety of workers and the public.

Current climate change projections suggest that Oregon will experience an increase in the frequency and intensity of winter precipitation events, an increase in average temperature, and an increase in the frequency, duration, and intensity of extreme heat events (Dalton and Fleishman 2021). Therefore, it is reasonable to expect maintenance activities and emergency repairs could be required more frequently in the future. However, due to the minimal nature of these impacts on public health and safety, climate change would not be expected to have the potential to further increase the Project's impacts on this resource.

Intentional Destructive Acts

It is difficult to predict the likelihood that vandalism, or acts of terrorism or sabotage, could occur at Project components. At BPA communications sites, security monitoring and a fence around the facility help prevent unauthorized access. Given the large numbers of public visitors at Marys Peak, it is unlikely that a significant terrorist or sabotage act would occur during the daylight hours.

If an intentional destructive act occurred, it would likely have no immediate effect on electrical service to BPA's customers. In the event of a power outage and the communications site is not functional, it could affect customers' electrical service only if necessary repairs could not be accomplished safely or quickly using other types of communication. It is expected that federal, state, and local agencies would respond quickly if any such an act were to occur and the facility would be visited promptly to assess any damage. Damage would be repaired and communication capabilities would be restored, as quickly as possible.

Because the communications sites already exist and any changes in appearance to the existing sites from Project implementation would not be very noticeable over time, it is unlikely the Project would result in an incremental increase in risk from intentional destructive acts. The risk of public health and safety impacts from theft, vandalism, or acts of sabotage and terrorism is considered **low**.

Electric and Magnetic Field (EMF)

BPA did not calculate the existing or proposed EMF levels for Project alternatives due to the small amount of EMF that would be generated under each alternative. The use of electrical equipment at the communications sites is comparable to most public facilities that use electricity for lighting, heating, and cooling. When the HVAC unit and electric generator within the buildings are turned off, but still connected to the power source, magnetic fields are not present. BPA periodically tests electric generators at night, when people are not expected to be present. The generators would only be used during emergency power outages, which are rare and usually occur during the winter months, when people are not generally present. The main source of EMF at the communications sites would be the HVAC unit, which would operate during hot or cold weather. People are likely to be present during the summer when the HVAC unit could be operating.

Under all action alternatives, electrical equipment would be added to a communications building within a fenced area with no public access. The visiting public would not be in close proximity to any electrical equipment. Given that EMF levels decrease with distance, EMF exposure levels would be very low and comparable to those experienced in everyday life, such as by walking by a restaurant or dry cleaning facility.

Very High Frequency (VHF) Radiation

Under each of the action alternatives, the VHF antenna that BPA is proposing to install would transmit information using RF waves, and therefore would produce non-ionizing radiation. VHF antenna produce an omnidirectional signal, which means the VHF signal radiates out in all directions.

Microwave Radiation

Microwaves are a type of non-ionizing radio waves and therefore are not capable of causing the same kind of cellular damage as ionizing radiation. The only Project component that people live in close proximity to is the BPA Albany Substation. Under Alternative 2A and Alternative 3C, the energy level of the microwave radiation produced by the telecommunications equipment at Albany Substation would be quite small (about 1.1 watt). For context, the proposed RF radiation generated by telecommunications equipment at Albany Substation is slightly less energetic than what one would experience with a smartphone (1.5 to 2 watts) and around 1,100 times less energetic than what one would experience from a typical microwave oven.

Under all action alternatives, the microwave signals would travel in a directed beam along a direct path between transmitting and receiving antennas. The dispersion of microwave energy outside of this narrow beam is minimal. As with all forms of electromagnetic energy, the strength of the radiation decreases rapidly with distance from the antenna. As a result, radiation exposure is much less at the ground-level than what one would experience directly in front of the antennas. Measurements made near typical telecommunications installations, especially those with tower-mounted antennas as is proposed under each alternative, have shown that ground-level radiation levels are hundreds to thousands of times less than the FCC's limits for safe exposure (FCC 2015).

Significant exposures from microwave antennas could only occur if an individual were to stand directly in front of and very close to an antenna for a period of time. Since the antenna would be mounted above the ground within a fenced site with restricted access, the public would not be exposed to microwave field levels in excess of FCC guidelines. Because the public is not expected to be exposed to microwave radiation from any of the action alternatives, there would be **no** health and safety impacts.

Impacts Specific to Action Alternatives

Alternative 2A

Marys Peak

At the BPA Marys Peak communications site, an HVAC unit and some additional electronic equipment would be installed in the existing communications building. This electrical equipment could result in a slight increase in EMF levels beyond the fence line, but this change in EMF would be very low and remain comparable to levels experienced by visiting commercial facilities. Public health and safety impacts from EMF exposure would be **low**.

A VHF antenna would be added to the proposed new steel-lattice structure at the BPA Marys Peak communications facility, replacing the BPA VHF antenna that currently exists. The new VHF antenna would emit VHF radiation, like the other VHF equipment at Marys Peak. Since any incremental change in VHF emissions would be low, public health and safety impacts from VHF exposure would be **low**.

Because the public is not expected to be exposed to microwave radiation due to restricted access, there would be **no** health and safety impacts from the additional microwave antenna.

Despite the presence of security infrastructure at the BPA and USFS communications site on the Marys Peak summit, a recent vandalism incident occurred in the spring of 2021. This vandalism incident at the existing BPA communications site is evidence that there is a moderate level of risk of theft, vandalism, or acts of sabotage or terrorism at the BPA communications site under Alternative 2A.

BPA Albany Substation

At the BPA Albany Substation, there would be **no** impacts from VHF radiation emissions under Alternative 2A because BPA does not currently operate and would not add a VHF antenna to the existing steel-lattice structure. Because the public is not expected to be exposed to microwave radiation from the additional microwave antenna or increased EMF, there would be **no** health and safety impacts.

Alternative 3C

Marys Peak

At the USFS Marys Peak communications site, an HVAC unit and some electronic equipment would be installed in the addition to the communications building. This electrical equipment could result in a slight increase in EMF levels beyond the fence line, but this change in EMF would be very low and remain comparable to levels experienced by visiting commercial facilities. Public health and safety impacts from EMF exposure would be **low**.

Because the public is not expected to be exposed to microwave radiation, there would be **no** health and safety impacts from the additional microwave antenna.

A VHF antenna would be added to the proposed new steel-lattice structure at the Marys Peak communications facility, replacing the BPA VHF antenna that currently exists. The new VHF antenna would emit VHF radiation, like the other VHF equipment at Marys Peak. Since any incremental change in VHF emissions would be low, public health and safety impacts from VHF exposure would be **low**.

Despite the presence of security infrastructure at the BPA and USFS communications sites on the Marys Peak summit, a recent vandalism incident occurred at the BPA communications site in the spring of 2021. This vandalism incident at the existing BPA communications site is evidence that there is a moderate level of risk of theft, vandalism, or acts of sabotage or terrorism at the new co-located communications site under Alternative 3C.

BPA Albany Substation

At the BPA Albany Substation, there would be **no** impacts from VHF radiation emissions under Alternative 3C, because BPA does not currently operate and would not add a VHF antenna to the existing steel-lattice structure. Because the public is not expected to be exposed to microwave radiation, there would be **no** health and safety impacts from the additional microwave antenna.

Alternative 4

Marys Peak

At the BPA Marys Peak site, there would be **low** temporary impacts on general worker and public safety during the removal of the BPA communications site.

West Point Spur

At the West Point Spur CPI communications site, the existing CPI site allow for public access within the chain link fence. An HVAC unit would be added to the CPI building, but because there is no public access inside the fence, there would be **no** impacts on public health and safety from EMF exposure. A VHF antenna would be added to the existing steel-lattice structure at West Point Spur. This VHF antenna would result in VHF radiation emissions, like the other VHF equipment at CPI and Prospect Hill. Since the change in VHF radiation would be low, public health and safety impacts from VHF exposure would be **low**. Because the public is not expected to be exposed to microwave radiation, there would be **no** health and safety impacts from the additional microwave antenna.

Anecdotal evidence suggests that a large segment of the local population, as well as visitors to the Marys Peak area, are not aware of the presence of communications sites at West Point Spur. This general unawareness may make communications sites at West Point Spur less of a target for intentional destructive acts than the communications sites at the Marys Peak summit. West Point Spur is not on a main route of travel for the general public who usually drive to the Marys Peak paved parking lot, which tends to be the ultimate destination for most vehicles traveling on the mountain. There is no signage identifying the West Point Spur communications site at Marys Peak Road; it is possible that people may not know how to get there, even if they did notice the tops of West Point Spur's communications steel-lattice structures from the summit.

Because West Point Spur receives far less visitors than the Marys Peak summit, the CPI communications site could be more vulnerable to vandalism or sabotage during daylight hours than the Marys Peak communications site. However, because the public is generally unaware of the CPI communications site, the level of risk of theft, vandalism, or acts of sabotage or terrorism would be low under Alternative 4.

BPA Prospect Hill

At the BPA Prospect Hill communications site, a VHF antenna would be added to the existing steel-lattice structure. This VHF antenna would result in VHF radiation emissions, like the other VHF equipment Prospect Hill. Since the change in VHF radiation would be low, public health and safety impacts from VHF exposure would be **low**.

Because of restricted access, the public is not expected to be exposed to EMF or microwave radiation, resulting in **no** health and safety impacts.

3.12.5 Mitigation

The following mitigation measures are identified to avoid or minimize Project impacts on public health and safety.

- Prepare an ESCP, **SWPPP**, site-specific safety plan, and fire prevention and suppression plan in compliance with federal, state and county requirements before starting construction; plans shall specify how to manage and respond to emergency situations involving hazardous materials to include oils and fuels, and any abandoned toxic materials found in work sites; all plans shall be kept on-site and maintained and updated as needed during construction.
- **Employ an on-site environmental monitor (hired directly by BPA and not the construction contractor), during all outdoor construction activities at Marys Peak to ensure all mitigation measures and BMPs are correctly implemented during construction and to ensure that construction equipment and personnel remain within designated construction areas, and public restricted access areas are in place for human health and safety purposes.**
- Design, construct, and operate the proposed electrical facilities to meet BPA safety requirements.
- Require the construction contractor to employ a lands liaison, who would be available to provide information, answer questions, and address concerns during Project construction.
- Secure the work area at the end of each workday, as much as possible, to protect the general public and to safeguard equipment.
- Limit vehicle speeds on unpaved roads and surfaces to 10 miles per hour or less to reduce dust and for public safety.
- Equip all vehicles used during construction with basic fire-fighting equipment, including extinguishers and shovels to prevent fires.
- Require the construction contractor to hold safety meetings with workers at the start of each day to review potential safety issues and concerns.
- Restrict access to the summit during any construction activities that could harm the general public in the vicinity, such as when erecting a steel-lattice structure.
- **Schedule all construction work during daylight hours (7 a.m. to 7 p.m.).**
- **Avoid all work between the parking lot and the Marys Peak summit and at the Marys Peak summit communications site during federal holidays and weekends to minimize impacts to visitors.**
- **Avoid removing the Marys Peak BPA communications site (Alternative 3C and Alternative 4) during federal holidays and weekends to minimize disturbance during periods of high visitation for public safety.**

3.12.6 Unavoidable Impacts Remaining After Mitigation

Implementation of the mitigation measures described above will reduce impacts to public health and safety, but would not completely eliminate impacts. Constructing and operating communications sites include some activities that increase the risk of injury to workers. Workers would follow all required safety requirements and precautions; however, accidents could still occur. Although infrequent, acts of vandalism and sabotage **have occurred at the communications site on the Marys Peak summit.**

Impacts could occur **from intentional destructive acts** with varying impacts to **which could affect** the perpetrator, BPA personnel who respond to these emergencies, and the general public.

EMF and EMR emissions would result from the operation of communications equipment under all alternatives.

3.13 Cumulative Impacts⁴

Cumulative impacts result from the incremental impact of the Project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal), entity, or person undertakes these actions. Cumulative impacts can result from the additive effect of individually minor actions that become collectively significant over time.

This section of the EA describes existing conditions at Marys Peak and West Point Spur that resulted from the historical development and past activities in the vicinity of the Project, as well as reasonably foreseeable future development in the area. The following subsections describe the cumulative effects that each action alternative, in combination with past, present, and reasonably foreseeable future actions, would have on the various environmental resources discussed in this EA. Because there would be no impacts on wetlands and water resources, fish, transportation, public services, and environmental justice populations, there would be **no** cumulative effect on these resources from the Project.

The proposed activities at the BPA Albany Substation under Alternative 2A and Alternative 3C and at the BPA Prospect Hill communications site under Alternative 4 are similar to routine maintenance actions. There would be no new facilities, the footprint of existing facilities would not be expanded, and work would take place over a short time period. Impacts on resources from this work would be none to low, depending on the resource. As a result, there would be **no or minimal** cumulative effects on resources from work at these two Project components.

3.13.1 Past Actions

The nature and extent of past development and activities in the vicinity of Marys Peak and West Point Spur resulted in present day conditions in the Project area. In general, the type of development that caused impacts on resources in the vicinity of the Marys Peak and West Point Spur began during the mid-nineteenth century. The initial waves of pioneers heading west to the Willamette Valley along the Oregon Trail began to pass through the region in the 1840s, heralding the end of the fur trade era and the beginning of Euro-American colonization. This migration of settlers was stimulated by the Oregon Donation Land Act of 1850; by 1852, nearly 12,000 settlers were passing down the Columbia River, with most heading to the Willamette Valley (Hunn and French 1998).

Farms appeared across the Willamette Valley as a result of the Homestead Act of 1862, which further fueled the desire for land and resulted in the settlement of river valleys and less desirable areas, including the Coast Range. Euro-American settlement proceeded at a rapid pace. Early homesteaders used the meadow on Marys Peak as summer range for their sheep, goats, and cattle (USFS, 1989). The timber industry expanded throughout the nineteenth and twentieth centuries, establishing large mills throughout the area and employing hundreds of people. Landowners began harvesting timber near Marys Peak just after World War I (USFS, 1989).

⁴ As discussed in the introduction to Chapter 3 of this EA, shortly before the Draft EA was issued for public review, CEQ eliminated the requirement to consider cumulative effects in its final rule updating CEQ's NEPA implementing regulations. Nonetheless, because the EA for the Marys Peak BPA Communications Site Project was begun before the effective date of the new CEQ NEPA regulations, this EA was prepared consistent with the pre-revision NEPA regulations.

The road to Marys Peak was constructed by the Civilian Conservation Corps and the Works Project Administration in 1938 and completed in 1941, enabling the development of the summit (USFS, 1989). In June 1941, the City of Corvallis donated 40 acres of land at Marys Peak to the United States government (BPA 2016). The Marys Peak fire lookout and observatory was constructed on the summit in 1942, replaced by a new lookout in 1959, and then subsequently removed (Gazette Times 1959a). In 1958, the U.S. Air Force extended the road to the top of the peak and constructed a radar station which was never used; the building was subsequently transferred to USFS (AECOM, 2019). The BPA communications site was constructed in 1960 and 1961, and began operating in 1961. The date when the USFS communications site was constructed and became operational is not known, but it was likely in the late 1950s or early 1960s. The Marys Peak communications site continues to operate and USFS has a number of tenants, while BPA currently has no tenants.

The West Point Spur communications sites were developed over time. There are currently three communications sites, including the CPI communications site. A former communications site was dismantled at some time in the past and the site is currently reverting back to forest.

Much of the land in the vicinity of Marys Peak is publicly owned. The SNF is the largest public landowner in the immediate vicinity while the BLM has some land, most of which is to the south of the SNF. Public lands are managed for multiple uses and in this area, recreation, timber harvest, and the amenities provided by natural resources are the main uses. The private lands in the vicinity of Marys Peak and West Point Spur are mainly owned by timber management companies and managed for timber production.

Within the Marys Peak SBSIA, the SNF has developed recreational sites, including the development of trails and campgrounds that have brought visitors into the Project area. Recently the SNF completed a meadow restoration project at Marys Peak that involved removing noble firs at the edge of the high-elevation meadows.

A network of local roads and state and county highways were developed in Benton County, which has facilitated further development. The state recently designated Highway 34, the road that leads to Marys Peak Road, as the Marys Peak to Pacific Scenic Byway, in the hopes of diverting some traffic to this road to encourage tourism. The SNF has a network of forest roads on and near Marys Peak, and BLM has a network of forest roads on their parcels.

Residential areas with some commercial uses include the town of Alsea, about 8 miles to the south along Highway 24; the town of Blodgett, about 6.7 miles to the northeast along Highway 20; and the town of Philomath, about 9 miles to the northeast along Highway 34. Corvallis is the main city in Benton County, located about 25 miles from Marys Peak. Because these residential areas are in close proximity to Marys Peak, the peak's recreational facilities draw visitors from these areas for day use and possibly for camping.

Due to the steep topography and remote location of the BPA communications site, high voltage transmission lines and gas pipelines are not located in the vicinity of Marys Peak or West Point Spur communications sites. The nearest BPA lines are about 5.4 miles to the north in the vicinity of Highway 20. Local electrical distribution lines are located throughout the Project area.

3.13.2 Current and Reasonably Foreseeable Future Actions

Current actions are those projects, developments, and other actions that are currently underway, either because they are currently in permitting, under construction, or are occurring on an ongoing basis. Reasonably foreseeable future actions generally include those actions formally proposed or planned, or highly likely to occur based on available information. Various sources, including local, state, and federal agency websites, SNF and BLM staff, and Benton County and Philomath planners, were consulted to

obtain information about any current and reasonably foreseeable future development in the vicinity of Marys Peak. The following describes these future actions.

The main source of future impacts near Marys Peak will likely be timber harvest since most of the areas surrounding the summit, both public and private, are managed for timber production. The SNF has some stewardship timber harvests planned for the purposes of meadow habitat restoration and late successional forest structure promotion in Benton County. Proposed SNF projects also include landscape management activities (USFS 2018a).

While BLM does not have any projects planned near Marys Peak, it is in the early planning stages for a timber harvest (thinning) project on about 600 acres elsewhere in Benton County, which will go through environmental review in 2020. The proposed thinning project will be on late-successional reserve lands a few miles north of Alsea. The BLM is also planning small restoration projects throughout the county.

The Oregon Department of Transportation website does not identify any planned projects in Benton County (ODOT 2019). Ongoing routine and emergency road maintenance will occur in the Project area.

In the towns and city near the Project, some residential and commercial development is planned. In Philomath, the development of a 175-space RV park, with a community center and storage facility, is currently being reviewed for a land use permit (pers. comm. with Patrick Depa, Associate Planner, City of Philomath, August 13, 2019). Philomath hopes to attract travelers who will stay for extended stays (Id.). Planning for future residential development is also occurring or completed in Philomath, including a new apartment complex and some partitioning of existing residential lots. In the City of Corvallis, an 8-lot subdivision was approved in 2019 and a 10-lot subdivision is currently in the permitting process. Residential development is expected to continue in urban areas, including single-family homes and apartments, but there is very little potential for residential development in the immediate vicinity of Marys Peak and West Point Spur.

BPA has no transmission projects planned in the Project area. The ongoing maintenance of BPA transmission lines located about 5 miles to the north would affect some resources, but impacts would likely be minimal because most transmission line structures are on high points in the landscape and existing access roads are generally forest roads.

There are no pipeline projects proposed in the Project area, except ongoing maintenance to the NW Natural Gas pipeline in the City of Corvallis. The most current issue of Gas Outlook published by the Northwest Gas Association (NWGA) does not indicate that construction of any new natural gas pipelines and storage facilities are reasonably foreseeable in the Project area (NWGA 2018).

3.13.3 Cumulative Impacts Analysis

The following subsections describe the cumulative effects that the implementation of any of the action alternatives, in combination with the past, present, and reasonably foreseeable future actions identified above, would have on the various environmental resources discussed in this EA.

Land Use and Recreation

Land use in the Project vicinity has incrementally changed due to past and present disturbance from the construction and maintenance of transportation and communications infrastructure, the development of communities, agricultural activities, timber harvest, and other activities. This trend will likely continue, although current land use is not expected to change in the near future.

Implementation of any of the action alternatives would result in temporary impacts on recreation at Marys Peak from construction noise and access restrictions. Alternative 2A and Alternative 4 would result in permanent impacts on land use and recreation due to an increase in operational noise above current ambient conditions from the installation of a new HVAC system. The cutting of trees to create

an unobstructed microwave beam path under all action alternatives would only affect land use and recreation during the short time the work would be conducted. The addition of the low-to-moderate impacts from the implementation of an action alternative on land use and recreation, when added to the impacts from other activities and past projects in the area, would result in a **low** cumulative impact on land use and recreation.

Geology and Soils

The primary past and present activities that have affected soils in the Project vicinity include the construction and maintenance of transportation and communications infrastructure, residential and commercial development, agricultural activities, timber harvest, and other activities. These actions have led to soil erosion, compaction, loss of soil productivity, and loss of soil by overlying roads and structures. Reasonably foreseeable future activities include infrastructure maintenance, ongoing agricultural activities, timber harvest, and development projects in urban areas. These activities are expected to continue at similar intensities as in recent years, with similar levels of soil impacts. This trend will likely continue, although current land use is not expected to change very much in the near future and no reasonably foreseeable future road projects have been identified.

Implementation of any of the Project alternatives would result in low temporary and permanent impacts on geology and soils. Construction-related activities, including excavation and the use of heavy equipment, would disturb, remove, and compact less than 0.5 acre of geology and soils, a relatively limited area compared to the overall Project area. Low temporary and permanent impacts on soils would result from topsoil removal, increased erosion, compaction of soils, and decreased soil productivity. Each alternative could also result in indirect impacts, including erosion and sedimentation, which would decrease as soils are revegetated over time. Limited permanent disturbance of soils would occur from construction disturbance resulting in topsoil removal and in areas covered by foundations, footings, or rock. The addition of the low impacts from the implementation of an action alternative on geology and soils, when added to the impacts from other past, present, and reasonably foreseeable future activities, would result in **low** cumulative impacts on soils.

Vegetation

The primary past and present activities that have affected vegetation in the Project vicinity include agricultural development, timber harvest, residential and commercial development, road construction, utility infrastructure construction, vegetation control along roads and other utility corridors, recreational use, and the gradual replacement of native flora with non-native species. These actions have contributed to the conversion of historic forest and grasslands into managed timberlands, grasslands and shrublands with predominantly non-native species. Past and present activities have resulted in the introduction and spread of noxious weeds into the area.

Some of the reasonably foreseeable future actions identified above that remove or disturb vegetation could cause permanent or temporary impacts on plant communities and destroy rare plant species. It would take some time to re-establish the functions and values (e.g., wildlife habitat, soil stabilization) provided by those communities if they are affected and they are not revegetated. The spread of noxious weeds will likely continue as a result of reasonably foreseeable future actions.

The amount of vegetation that would be affected by the implementation of any of the action alternatives is small compared to the area affected by past and ongoing activities. Construction-related activities, including excavation and the use of heavy equipment, would disturb or remove less than 0.5 acre of moderate-quality grassland that is predominantly composed of native plant species. Because revegetation would occur, most impacts on vegetation are anticipated to be temporary, with unavoidable impacts occurring during the lag-time between the on-site losses during construction and achievement of successful restoration. Indirect impacts could occur, including the degradation of plant

communities from erosion and the introduction of non-native weedy species in disturbed areas. Due to the difficulty of controlling weeds in disturbed areas, the Project could result in some increases in noxious weeds or non-native plant species within areas disturbed by Project construction.

All action alternatives would require cutting less than 1 acre of high-quality forest. Under Alternative 2A and Alternative 3C, the forest that would be disturbed is habitat for eight sensitive fungi that are assumed to be present. Any impacts on vegetation from any of the action alternatives would be low to moderate following the implementation of BMPs and mitigation measures. The incremental impacts on vegetation from implementation of any of the action alternatives, along with other past, present, and reasonably foreseeable future actions would result in **moderate** cumulative impacts on vegetation.

Wildlife

The primary past and present activities that have affected wildlife and wildlife habitat in the Project vicinity include agricultural development, timber harvest, residential and commercial development, road construction, utility infrastructure construction, and the gradual replacement of native flora with non-native species. Existing roads in the Project vicinity have led to increased disturbance from human activity, increased landscape fragmentation and the presence of wildlife travel barriers, lost habitat, and the introduction and spread of noxious weeds. This habitat loss and modification has resulted in the displacement of wildlife species. Wildlife species also have been directly affected by hunting as well as incidental harm and mortality from other human activities in the area.

The reasonably foreseeable future actions identified above that remove or disturb wildlife habitat could cause temporary or permanent impacts on wildlife and their habitat. The implementation of any of the action alternatives would contribute to impacts on wildlife and wildlife habitat through temporary disturbance and displacement of wildlife during construction and the temporary and permanent removal of small areas of wildlife habitat. The amount of wildlife habitat that would be affected by the implementation of any of the action alternatives is small compared to the area affected by past and ongoing activities. Construction-related activities, including excavation and the use of heavy equipment, would disturb or remove less than 0.5 acre of low- to moderate-quality grassland habitat that is predominantly composed of native plant species. All action alternatives would require cutting of less than 1 acre of high-quality forest.

Because revegetation would occur, most impacts on wildlife are anticipated to be temporary, and displaced wildlife are expected to return after construction. Indirect impacts could occur, including the degradation of wildlife habitat from erosion and the introduction of non-native weedy species in disturbed areas. Due to the difficulty of controlling weeds in disturbed areas, the Project could result in some increases in noxious weeds or non-native plant species within areas disturbed by Project construction. Any impacts on wildlife and wildlife habitat from any of the action alternatives would be low to moderate following the implementation of BMPs and mitigation measures. The incremental impacts from implementation of any of the action alternatives, along with other past, present, and reasonably foreseeable future actions would result in **moderate** cumulative impacts on wildlife and wildlife habitat.

Visual Quality

Visual resources in the Project vicinity have incrementally changed as a result of past and present development and changes in natural landscapes resulting from human activities. Past actions within the study area that have altered the natural landscape character include agriculture, community development, transportation infrastructure, and the development and operation of recreational and communications facilities within the Marys Peak SBSIA. Collectively, communications infrastructure has altered the landscape character such that it appears industrial from some locations; however, due to the existing topography, portions of the SBSIA are still characterized by high scenic integrity where the

existing communications structures cannot be seen. Although these past actions have resulted in changes to landscape character in some portions of Marys Peak, there has not been a continued trend of development in the SBSIA that has further altered the landscape character.

Reasonably foreseeable future actions could contribute to changes in the visual environment, primarily through views of temporary construction disturbance. Reasonably foreseeable future actions in Benton County include roadway and intersection improvements, bikeway and trail development and improvements, and remodeling and construction of residences and commercial facilities. However, reasonably foreseeable future actions would not, in combination with past actions, contribute to a trend that would further alter the landscape character within the Project area.

Some visual impacts from implementation of action alternatives would be temporary and localized during construction, while some alternatives would result in permanent changes to some views. The main change to the visual environment would result from the construction of an additional steel-lattice structure at Marys Peak under either Alternative 2A or Alternative 3C. In combination with the existing communications structure, these action alternatives would result in increased density and massing of communications equipment at the summit that would also be visible from various locations within the SBSIA, a moderate impact on visual resources. At other locations within Marys Peak where the existing and proposed communications structures are not visible, there would be no visual impacts as changes in landscape character would not be expected.

Because of the limited nature of these visual changes, the incremental contribution of either Alternative 2A or Alternative 3C, when combined with the impacts of other past, present, and reasonably foreseeable future actions, would result in **moderate** cumulative impacts on visual resources within a localized area that is designated as a scenic area and visited by sensitive viewers. The contribution of Alternative 4 to overall cumulative impacts would be less than that observed in Alternative 2A or Alternative 3C because a new communications structure would not be introduced to the landscape, but some vegetation clearing could make the CPI communications site more visible from the SBSIA.

Cultural Resources

Past and present development and other activities have impacted cultural resources in the Project vicinity, including archaeological resources, historic resources, and traditional cultural properties. Some impacts on cultural resources are likely to have occurred as a result of inadvertent disturbance or destruction during ground-disturbing activities including construction and maintenance of utility and transportation infrastructure, residential and commercial remodeling, demolition and development, agricultural activities, and timber harvest. These impacts include disturbance of cultural sites, reduction of the cultural integrity of certain sites, removal of cultural artifacts, and destruction of sites. Indian inhabitants in this area were displaced and have not had access to traditional cultural resources on privately-owned lands for resource gathering, fishing, and hunting. Although some efforts are being made to allow tribal use of public lands, lack of access to traditional use areas is likely to affect Indian populations into the future, limiting their ability to carry out traditional activities.

Field surveys of Project components did not reveal any archaeological resources. Therefore the Project would not contribute to impacts on archaeological resources, unless some are disturbed during construction. BPA is currently consulting with Tribes on potential impacts on traditional cultural properties from the Project.

All of the action alternatives would impact historic resources. The Marys Peak communications site, which is eligible for the NRHP, would be adversely affected under all action alternatives. The replacement of the wood monopole with a steel-lattice structure under Alternative 2A would be an adverse effect because the change in materials and design would result in a loss of historic integrity. The removal of the site under Alternative 3C or Alternative 4 would also be an adverse effect. Because

it is not known if the USFS communications site at Mary Peak and the CPI communications site at West Point Spur are eligible for the NRHP, evaluation of these sites would be done if an alternative was selected that could result in adverse effects. If an action alternative is selected rather than the No Action Alternative, BPA would work with consulting parties to determine appropriate mitigation for adverse effects to historic resources.

Implementation of the cultural resource mitigation measures included in Section 3.6.4 of this EA would minimize impacts and would reduce the potential of any of the action alternatives to impact cultural resources. If previously undiscovered cultural resources are encountered during construction, potential impacts would depend on the level and amount of disturbance and whether the affected resource is eligible for listing in the NRHP. With implementation of the mitigation measures identified in this EA, the incremental contribution of any of the action alternatives, when combined with the impacts of other past, present, and reasonably foreseeable future actions, would result in **low to moderate** cumulative impacts on cultural resources.

Socioeconomics

Past and present population growth, residential and commercial development, utility and transportation infrastructure development, agricultural activities, and timber harvest have affected socioeconomics in the vicinity of the Project. Growth and development trends are expected to continue, but would not change much in the near future. Some reasonably foreseeable future actions, such as residential and RV park construction, would contribute to the socioeconomic well-being of Benton County, but are not expected to induce substantial regional growth or place unusual demands on suppliers of goods and services. The vicinity of Marys Peak and West Point Spur is rural in nature and likely to remain the same.

Implementation of any of the action alternatives could result in a temporary demand for increased housing but there would be no permanent impacts on regional population and overall demand for housing. The temporary increase in business income resulting from the presence of workers in the community would constitute a minor, beneficial impact on the regional economy. Some temporary interference with recreational activities at Marys Peak would occur under all action alternatives, resulting in low-to-moderate temporary impacts on the regional economy if fewer people visit the area or do not stay as long, affecting the amount of money spent in local communities.

Because of the temporary and localized nature of activities resulting from implementation of any of the action alternatives, and their low impact on existing socioeconomics within the study area, the incremental contribution from the Project combined with the reasonably foreseeable future actions would result in a **low** cumulative impact on socioeconomics.

Noise

Noise levels in the project vicinity are cumulatively affected by existing traffic, existing residential and commercial uses, agricultural activities, timber harvest, and infrastructure maintenance projects. Because there are noise sensitive receptors at Marys Peak and because the current ambient noise level is low, there would be moderate temporary noise impacts from construction under all alternatives. However, because construction noise impacts would be temporary and localized, they would not contribute to long-term cumulative noise impacts in the project vicinity.

Alternative 2A and Alternative 4 **Implementation of any of the Project alternatives** would result in permanent noise impacts due to operational noise above current ambient conditions from the installation of a new HVAC system. Due to the presence of sensitive noise receptors at Marys Peak, this would contribute to long-term cumulative noise impacts near the Marys Peak communications site, a **moderate** cumulative impact. Because there are few or no sensitive noise receptors near West Point Spur, the installation of the HVAC system would have a **low** cumulative impact on noise.

Air Quality and Greenhouse Gases

Sources of air pollutants that have and would continue to emit pollutants in the area include vehicles and equipment used during construction, transportation, utility infrastructure maintenance, agricultural activities and timber harvest, and particulate matter from burning of agricultural areas and forest fires occurring outside the study area.

The minor increases in emissions from the implementation of any of the action alternatives are not anticipated to cause a violation of the EPA's established national ambient air quality standards (NAAQS). Project dust generation would be in addition to other sources of dust throughout the study area. However, with appropriate mitigation measures to control dust during Project implementation, the increase in dust levels would result in overall low cumulative contributions to particulate levels in the study area. Because of the overall low impact on air quality, the incremental contribution of the selected action alternative, when combined with the impacts of other past, present, and reasonably foreseeable future actions, would result in **low** cumulative impacts on air quality.

Project construction under all action alternatives would result in GHG emissions, primarily in the form of CO₂, N₂O, and CH₄ from the use of vehicles and heavy equipment. Under all action alternatives, less than 1 acre of trees would be topped or removed and Project construction would disturb less than 0.5 acre of other vegetation and soil, most of which would be revegetated. For these reasons, the permanent impacts on global GHG concentrations by all Project alternatives would be low. All levels of GHG emissions are significant in that they contribute to global GHG concentrations and **climate change**. However, because of the low amount of emissions of GHGs, the incremental contribution of any of the action alternatives to cumulative impacts on global GHG concentrations would be low.

The effects of climate change could increase the long-term impacts of the Project. Because land use and recreation and socioeconomics would not incur permanent impacts as a result of the Project, climate change would not have the potential to further increase permanent impacts on these resources in the future. And while there would be some permanent impacts from the Project to visual quality, cultural resources, public health and safety, and air quality, it is not expected that climate change would have the potential to further increase these types of impacts in the future.

There would be permanent impacts from the Project on geology and soils, vegetation, wildlife, and noise levels. Climate change would have the potential to further increase the Project's impacts on these resources. However, because of the small area affected by the Project for each of these resources and because mitigation measures are expected to reduce the impacts to geology and soils, vegetation, wildlife, and noise, the effects of climate change on these resources is not expected to be significant.

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Chapter 4 Environmental Consultation, Review, and Permit Requirements

This chapter addresses statutes, implementing regulations, and executive orders potentially applicable to the Project. BPA is providing this environmental assessment (EA) to federal and state agencies, consulting Tribes, and local governments as part of the consultation and coordination processes for the Project. Persons, Tribes, agencies, and governmental entities consulted or notified are listed in Chapter 5 of this EA.

4.1 National Environmental Policy Act

This EA was prepared pursuant to regulations implementing the National Environmental Policy Act (NEPA; 42 USC 4321 et seq.), which requires federal agencies to assess the impacts that their actions may have on the environment.⁵ NEPA requires preparation of an environmental impact statement (EIS) for major federal actions significantly affecting the quality of the human environment. BPA prepared this EA to determine if the Project would create any significant environmental impacts that would warrant preparing an EIS, or if a Finding of No Significant Impact (FONSI) is justified. BPA made this EA available for public comment and will consider the potential impacts and public comments when making decisions regarding the Project.

BPA is the lead agency responsible for preparing this EA under NEPA. As explained in Section 1.5.1, BLM and USFS are cooperating agencies for this EA. Both agencies have special expertise and jurisdiction by law on the lands they manage that could be affected by the Project.

As cooperating agencies, the roles of BLM and USFS are to provide information, comments, and technical expertise to BPA regarding the lands they manage in the Project area and to provide data and analyses for use in the EA. Both agencies may also need to make realty decisions that would require permits. Although BPA is the lead agency with responsibility for the completion of the EA, BPA, BLM, and USFS will each complete their own FONSI statements, if warranted.

USFS will have an administrative review process (a “45 day objection period”) after the combined release of the final EA and USFS draft Decision Notice. The objection period is available to those who submitted comments during the scoping periods or during the draft EA comment period. The Forest Service reviewing official can respond to objectors on their objection points as they relate to the Project, particularly regarding Siuslaw Forest Plan concerns.

4.2 Wildlife and Vegetation

4.2.1 Federal Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 USC 1536), as amended in 1988, establishes a national program for the conservation of threatened and endangered fish, wildlife, and plant species, and the ecosystems on which they depend. The ESA is administered by the U.S. Fish and Wildlife Service (USFWS) for terrestrial wildlife, plants, and freshwater species and by the National Oceanic and

⁵ As discussed in the introduction to Chapter 3 of this EA, shortly before ~~this~~ *the* Draft EA was issued for public review, CEQ published a final rule updating its NEPA implementing regulations. Because the EA for the Marys Peak BPA Communications Site Project was begun before the effective date of the new CEQ NEPA regulations, this EA was prepared consistent with the pre-revision NEPA regulations.

Atmospheric Administration National Marine Fisheries Service (NMFS) for anadromous fish and marine species.

Section 7(a) of the ESA requires federal agencies to ensure that the actions they authorize, fund, and carry out do not jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. Section 7(c) of the ESA and other federal regulations require that federal agencies prepare a biological assessment (BA) addressing the potential effects of their actions on listed and proposed endangered species and designated critical habitat (DCH).

BPA used the following resources to determine which ESA-listed and proposed species could occur in the Project area and if ESA-DCH occurs in the Project area:

- USFWS lists of ESA-listed, proposed and candidate animal and plant species that could occur in Benton, Linn, and Marion counties and DCH that occurs in those counties (USFWS 2015, 2016, 2017, 2019)
- Oregon Biodiversity Information Center (ORBIC) database records of known occurrences of ESA-listed, proposed, and candidate species within 1 mile of Project components

Both the BPA Marys Peak communications site and the West Point Spur CPI communications site are located in Benton County. Federally-listed animal species on the USFWS list for Benton County include the federally endangered Fender's blue butterfly and Taylor's checkerspot butterfly, and the federally threatened northern spotted owl, marbled murrelet, streaked horned lark, and yellow-billed cuckoo. The North Oregon Coast DPS of the red tree vole is currently a Federal Species of Concern; however, it was a candidate species in Benton County, prior to December 2019. The only known occurrences of any of these species within a 1-mile radius of the Marys Peak communications site at Marys Peak and 1 mile of West Point Spur, are for the northern spotted owl (ORBIC 2018). During Marys Peak and West Point Spur wildlife field surveys between 2018 and 2020, none of these species were observed, as discussed in Section 3.6, Wildlife, of this EA.

DCH for the northern spotted owl and the marbled murrelet is located in Benton County (USFWS 2015, 2016, 2017, 2019). The only Project work area within northern spotted owl DCH under any of the action alternatives is the BLM tree-cutting area at Marys Peak. Project work areas within marbled murrelet DCH include the Marys Peak communications site, staging areas, and USFS portions of the unpaved access roads at Marys Peak and West Point Spur.

The BPA Albany Substation is located in Linn County and the BPA Prospect Hill communications site is in Marion County. USFWS lists for these two counties include the same federally-listed animal species: the federally endangered Fender's blue butterfly and Taylor's checkerspot butterfly; the federally threatened northern spotted owl, marbled murrelet, streaked horned lark, and yellow-billed cuckoo. DCH under the ESA for these animal species does not occur within 1 mile of the BPA Albany Substation or the Prospect Hill communications site. There are no known occurrences of these species within 1 mile of both sites (ORBIC 2018). During field surveys of these Project components in 2018, these species were not observed.

Federally-listed plant species identified by the USFWS with the potential to occur at Project components are federally-endangered Bradshaw's desert-parsley and Willamette daisy, and federally-threatened golden paintbrush, Kincaid's lupine, Nelson's checker-mallow, water howellia, and Willamette daisy (USFWS 2015, 2016, 2017, 2019). DCH under the ESA for these plant species does not occur within 1 mile of Project work areas. There are no known occurrences of federally-listed plant species within 1 mile of all Project components (ORBIC 2018). During field surveys of Project areas in 2017 and 2018, ESA-listed plant species were not observed, as discussed in Section 3.5, Vegetation, of this EA.

USFWS Consultation

BPA entered into pre-consultation with USFWS concerning potential impacts from the Project on federally-listed species. BPA, USFS, and BLM participated in the following pre-consultation activities:

- USFWS provided BPA an example Biological Opinion and a marbled murrelet disruption table as guidance for this Project (Tuerler pers. comm. 2016).
- BPA and USFWS participated in a conference call to discuss the Project and the species that would need to be included in consultation (pers. comm., March 25, 2016).
- USFWS, USFS, and BLM staff members were provided draft wildlife and plant survey plans for review and comment on November 21, 2017, and USFWS staff concurred with the methods in the draft survey plans (Tuerler pers. comm. 2017).
- USFWS, USFS, and BLM staff members were provided an updated draft wildlife survey plan on January 16, 2018; USFWS staff provided feedback on methods outlined in the survey plan (Livingston pers. comm. 2018; Tuerler pers. comm. 2018a).
- A revised survey plan that included the West Point Spur portion of the study area was submitted to USFWS on June 8, 2018; USFWS staff indicated that they had no additional comments on the draft survey plan (Tuerler pers. comm. 2018b).
- BPA provided the USFWS information on the survey buffer areas for the red tree vole on September 11, 2018.
- BPA provided the USFWS, USFS, and BLM the 2018 draft BPA Marys Peak Communications Project Wildlife Resources Report on February 14, 2019; USFWS responded that the agency had no additional comments at that time (Tuerler pers. comm. 2019a).
- BPA sent emails to USFWS staff members on August 21, 2019, to inform them that no marbled murrelets, northern spotted owls, or red tree voles were detected during the 2018 and 2019 surveys in the study area and, after discussions with BPA, USFWS responded that a Not Likely to Adversely Affect (NLAA) determination seemed appropriate for the northern spotted owl DCH habitat (Tuerler pers. comm. 2019b).
- The final Wildlife Report (2018 and 2019 survey data) was sent to USFWS, USFS, BLM, ODFW and the City of Corvallis on December 17, 2019.
- The final 2020 Wildlife Report summarizing the results of that year's northern spotted owl surveys was sent to was sent to USFWS, USFS, BLM, ODFW, and the City of Corvallis on August 11, 2020.
- ***The final 2021 Wildlife Report summarizing the results of that year's northern spotted owl surveys was sent to USFWS, USFS, BLM, ODFW, and the City of Corvallis on August 2, 2021.***

Based on existing information and discussions with USFWS, BPA determined there would be no effect from the Project on the following listed species because no suitable habitat for these species occurs in the study area: fisher, streaked horned lark, yellow-billed cuckoo, Fender's blue butterfly, and Taylor's checkerspot butterfly. BPA also determined there would be no effect on listed plant species because they are not present in Project work areas. Because marbled murrelet were not observed at Marys Peak and West Point Spur during the first two years of field surveys following species-specific standard protocols (Turnstone 2019), it is assumed they are not present and there would be no effect on this species. Because northern spotted owl were not observed at West Point Spur during standard 2018 and 2019 surveys, nor were they observed during the 2020 **or 2021** "spot-check surveys", it is assumed that they are not present and there would be no effect on this species. ~~Spot-check~~ **Additional protocol** surveys are currently planned for **2022, and potentially also for 2023, spring 2021** to justify the "not present" determination. Additional marbled murrelet surveys and red tree vole surveys are not needed

because the two year survey data is valid for five years and construction is expected to occur within this five-year period (Turnstone, pers. comm. Dec. 18, 2019). Should construction not begin prior to five years after the initial surveys for marbled murrelet or northern spotted owl, protocol surveys may need to resume.

BPA would likely need to consult on northern spotted owl DCH habitat if Alternative 2A or Alternative 3C is selected due to the proposed tree cutting within the DCH. Under Alternative 4, BPA would not need to consult on northern spotted owl DCH because the tree-cutting area is not within the DCH and the Marys Peak communications site at the summit could be reduced in size due to co-location with CPI, rather than expansion into existing DCH areas.

BPA would not need to consult on potential impacts to marbled murrelet DCH under any of the action alternatives. Because tree cutting would not occur within marbled murrelet DCH under any of the action alternatives, marbled murrelet DCH would not be adversely affected by the Project.

The USFWS list for Benton County includes the Federal species of concern (formerly a candidate species) the North Oregon Coast DPS of the red tree vole. Potential habitat for the red tree vole occurs in the West Point Spur portion of the study area. Surveys were conducted for red tree vole nests during the spring of 2019, but it was determined that the red tree vole was not using the habitat. Therefore, red tree vole is assumed to not be using this habitat.

NMFS Consultation

Because there are no waterways that would be affected directly or indirectly by the Project, there would be no impacts on fish species and fish habitat. Therefore, BPA did not consult with NMFS on ESA-listed anadromous fish species.

4.2.2 State Endangered Species Act

In 1987, the Oregon Legislature enacted the Oregon Endangered Species Act (Oregon ESA), implemented by Oregon administrative rules for threatened and endangered species (OAR 635-100-0100 to 0130). In accordance with these rules, species can be classified as "threatened" (any native species likely to become endangered within the foreseeable future throughout any significant part of its range within the state) or "endangered" (any native species determined to be in danger of extinction). The Oregon Department of Fish and Wildlife (ODFW) oversees the conservation and management of Oregon's endangered and threatened animal species. The Oregon Department of Agriculture's (ODA) Native Plant Conservation Program oversees the conservation and management of Oregon's endangered and threatened plant species.

Field surveys were conducted for state-listed animals and plants that could be directly or indirectly affected by implementation of Project action alternatives. The USFS Restoration Services Team conducted field surveys for state-listed plants at Marys Peak and West Point Spur, but none were found in the study area. Rare plant field surveys were not required at BPA Albany Substation and Prospect Hill due to lack of rare plant habitat in construction work areas. Turnstone Environmental conducted wildlife surveys for the two state-listed wildlife species with the potential to occur in the study area, the marbled murrelet and the northern spotted owl, but none were detected.

4.2.3 Fish and Wildlife Conservation and Coordination Acts

The Fish and Wildlife Conservation Act of 1980 (16 USC 2901 et seq.) encourages federal agencies to conserve and promote conservation of non-game fish and wildlife and their habitats. The Fish and Wildlife Coordination Act (16 USC 661 et seq.) requires federal agencies with projects affecting water resources to consult with USFWS and the state agency responsible for fish and wildlife resources. The analysis in Section 3.6, Wildlife, indicates that all of the action alternatives would have impacts on

wildlife, which would be minimized but not completely avoided with implementation of appropriate mitigation.

BPA coordinated with the ODFW wildlife biologist concerning Project activities with the potential to affect wildlife. BPA contacted ODFW District Wildlife Biologist Nancy Taylor on December 5, 2018, and sent project information on the same day. On January 23, 2019, ODFW expressed interest in the Project and requested a copy of the draft wildlife resources report when it becomes available (Taylor, N. pers. comm. January 23, 2019). ODFW contacted BPA (Taylor, N., pers. comm. February 21, 2019) regarding wildlife species and habitat in the study area, and to discuss the types of field surveys in the study area. During that call, ODFW concurred with the special-status species list for the Project (Taylor, N., pers. comm. February 21, 2019). BPA sent a draft wildlife survey report summarizing the 2018 survey efforts to ODFW on February 14, 2019, and USFS and BLM on February 15, 2019, for review.

ODFW, USFWS, USFS, and BLM wildlife biologists provided valuable input concerning the presence of wildlife species and potential effects of the Project throughout the environmental review process. Mitigation measures designed to conserve wildlife and their habitats are listed in Sections 3.5, Vegetation, and 3.6, Wildlife. BPA is consulting with agency wildlife staff regarding the potential effects on wildlife species, including special-status species and migratory birds.

4.2.4 Essential Fish Habitat

Public Law 104–297, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Fishery Conservation and Management Act. Under Section 305(b)(4) of the act, BPA is required to consult with NMFS for actions that adversely affect essential fish habitat (EFH). BPA determined that the Project does not have the potential to adversely affect EFH because there is no in-stream work proposed in fish-bearing waters and Project work areas are far enough from waterways that there would be no impacts on fish or fish habitat.

4.2.5 Migratory Bird Treaty Act

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and other countries, including Canada, Japan, Mexico, and the former Soviet Union, for the protection of migratory birds (16 USC 703–712, July 3, 1918, as amended in 1936, 1960, 1968, 1969, 1974, 1978, 1986, 1989). Under the act, taking, killing, or possessing migratory birds, or their eggs or nests, is unlawful. The act classifies most species of birds as migratory, except for upland and non-native birds such as ring-necked pheasant, chukar, gray partridge, house sparrow, European starling, and rock dove. In addition, Executive Order 13186 directs federal agencies whose actions may negatively affect migratory bird populations to work with USFWS to develop an agreement to conserve migratory birds.

The U.S. Department of Energy (DOE) and USFWS signed a Memorandum of Understanding (MOU), now in the process of being renewed, that addresses migratory bird conservation in accordance with Executive Order 13186 (USDOE and USFWS 2013). The MOU addresses how both agencies can work cooperatively to address migratory bird conservation and includes specific measures to consider applying during project planning and implementation. BPA continues to follow this MOU to minimize potential impacts on migratory birds and would follow this MOU for this Project.

Field studies were conducted to determine the bird habitats present in the study area. Based on this information, all of the action alternatives could affect migratory birds through the loss or degradation of a small amount of habitat and the potential for collisions with the communications structure and construction equipment. Potential effects to avian species and their habitats are discussed in Section 3.6, Wildlife.

Mitigation would be implemented to avoid or minimize impacts to birds, as discussed in Section 3.6, Wildlife. Trees would only be cut between August 15 and March 1 to minimize displacement of nesting

birds. Active bird nests in construction work areas would be identified and avoided during construction, if possible, or BPA would obtain the appropriate permits from USFWS if the nest could not be avoided. Trees that would be cut would be left as snags, if possible, to continue providing habitat.

4.2.6 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668–668d, June 8, 1940, as amended in 1959, 1962, 1972, and 1978) addresses take of eagles, which includes both the disturbance of eagles or killing eagles. There are no known golden eagle nests within 5 miles of any of the Project components (Isaacs 2019).

Although there are documented occurrences of bald eagles within the Siuslaw National Forest and the Salem BLM District, there are no documented occurrences of bald eagles within 5 miles of the Marys Peak or West Point Spur Project components (ORBIC 2018). Because there are no large water bodies within 1 mile of these communications sites, the bald eagle is not likely to occur within the Marys Peak or West Point Spur portions of the study area.

Several bald eagle nest trees are documented along the Willamette River within 5 miles of the BPA Albany Substation, with the closest located approximately 2.5 miles away (ORBIC 2018, ODFW 2011). The Calapooia River, which is about 200 feet southwest of the substation’s fence, is known to support only two bald eagle nesting sites along its entire length of 80 miles. Both of these bald eagle nests are greater than 5 miles from the BPA Albany Substation. The bald eagle has a low likelihood of using the cottonwood trees along the Calapooia River near the BPA Albany Substation as nesting, roosting, and foraging habitat.

Seven bald eagle nest trees are documented along the Willamette River within 5 miles of the BPA Prospect Hill communications site (ORBIC 2018). Because there are no documented nest trees or large water bodies within 1 mile of Prospect Hill, the bald eagle is not likely to occur within the disturbance distance (0.25 mile) of the Prospect Hill component.

Under the Bald and Golden Eagle Protection Act, “whoever . . . shall knowingly, or with wanton disregard for the consequences of his act take, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import” bald or golden eagles or their parts, nest, or eggs without a permit will be subject to criminal and/or civil sanctions (16 USC 668a). There are no known occurrences of eagle collisions with the communications facilities at the various Project components. Because the Project would not involve knowing take or other acts in wanton disregard of bald or golden eagles, implementation of the Project would not violate the provisions of the Bald Eagle and Golden Eagle Protection Act.

4.3 Federal Land Managing Agency Requirements and Policy Consistency

This section describes the regulatory and management framework applicable to federal lands within the Project area by summarizing land management standards that apply to the Project. BPA is required to follow federal land managing agency requirements when building and maintaining facilities on their lands. As cooperating agencies, BLM and USFS have worked closely and regularly with BPA, providing information, comments, and technical expertise regarding the lands they manage in the Project area and to provide data and analyses for use in this EA. Impacts that could be expected from Project alternatives on public lands at Marys Peak and West Point Spur were evaluated to determine consistency of the Project with these federal land management standards.

4.3.1 Federal Land Policy Management Act

The Federal Land Policy and Management Act of 1976 (FLPMA) governs the way in which public lands are administered by federal agencies, including BLM and USFS (BLM 2001). The act directs these agencies to manage public lands on the basis of multiple use and sustained yield to “best meet the present and future needs of the American people.” Under the act, USFS and BLM must balance a variety of uses on public lands, while preserving resources found on the lands they manage.

To ensure that actions are compliant with FLPMA, USFS and BLM require a Special Use Authorization permit for requests to conduct activities on the lands they manage. The application process for this permit begins by submitting a SF-299 form, with information on the proposed use. The permit application is reviewed by agency subject matter experts and the agency works with the permit applicant to ensure the Project is compliant with its requirements and avoids or minimizes impacts on resources. *Per 36 CFR 251.54(g)(5)(ii)*, Special Use Authorization permits are valid for **30** ~~50~~ years **and would be subject to renewal at that time.**

To implement any of the action alternatives, BPA would acquire a Special Use Authorization permit from USFS. BPA currently has a Land Use Grant Instrument with USFS for the existing communications site that would be converted to a Special Use Authorization permit. BPA began the conversion process by submitting a SF-299 in January 2016 expressing interest in exploring alternatives for this Project. In response to a request from USFS, BPA submitted a revised SF-299 to USFS on July 29, 2016, that included a more detailed preliminary Project description. BPA will need to revise the SF-299 if an action alternative is selected and once design is complete. This revised SF-299 will include more detailed information on resources based on the information acquired, studies conducted, and public input received during the environmental review process for the Project. The potential effect of each action alternative on federal resources, including vegetation, wildlife, recreation, visual, and cultural resources are discussed in the relevant sections in Chapter 3.

If either Alternative 2A or Alternative 3C is selected, BPA would acquire a Special Use Authorization permit from BLM for BPA use of BLM’s portion of the existing access road to the summit of Marys Peak. Because Alternative 4 does not include any BLM lands, no BLM permit would be required for this alternative. The BLM permit process would be the same as that described above for USFS except that BPA has not yet submitted a preliminary SF-299 to BLM.

4.4 U.S. Forest Service

4.4.1 Siuslaw National Forest Land and Resource Management Plan

Marys Peak and West Point Spur Project components that would be affected under all action alternatives are located on lands managed by USFS as part of the Siuslaw National Forest (SNF). The Project must be consistent with the SNF Forest Land and Resource Management Plan (LRMP), as amended by the Northwest Forest Plan (1994), or an amendment would be required to the plan.

The LRMP serves as the single land management plan for all of the SNF. All other land management plans, including the Management Direction for the Marys Peak Scenic Botanical Special Interest Area (SBSIA Management Plan 1989), are incorporated into the LRMP. The LRMP establishes multiple-use goals, resource objectives, standards and guidelines for natural resource management activities, and monitoring and evaluation guidelines. In addition, it provides both forest-wide standards and guidelines and additional standards and guidelines for specific management areas. The management direction provided by the plan comprises the framework within which site-specific project planning and activities take place. Consistency of the Project with the plan will be considered during USFS review of the SF-299, which discloses potential impacts on resources.

4.4.2 USFS Scenic Botanical Special Interest Area

USFS designated 924 acres of the SNF around Marys Peak and West Point Spur as a SBSIA “in recognition of the unique scenic, botanical and recreational values of Marys Peak” (36 CFR § 294.1(a)). In 1989, USFS approved the SBSIA Management Plan to establish management actions necessary to protect the unusual and outstanding characteristics of the area while fostering public use, understanding, and enjoyment of these characteristics. The SBSIA management guidelines are relied upon where there is no discrepancies between SNF LRMP (USFS 1990). The 1990 Forest Plan is the outcome of the Siuslaw LRMP Final Environmental Impact Statement and Record of Decision, and was developed in accordance with Secretary of Agriculture regulations (36 CFR 219) and implementation regulations for NEPA (40 CFR 1500). The SNF LRMP overrides previous plans, unless specifically specified, and guides all natural resource management activities and established management standards and guidelines.

The SNF LRMP sets one of the goals of the SBSIA as “Utilize the high quality electronic capabilities of Marys Peak” (IV-76) and also states that “Electronic facilities on Marys Peak to minimize adverse effects on scenery and other resources of the SIA (IV-79).” The SBSIA Management Plan includes direction on the use of Marys Peak and West Point Spur for special uses, stating that special-use permits may be issued when the activity is compatible with the management goals for the SBSIA. Use of USFS land on the summit of Marys Peak for electronic communications is limited to government and public service agencies.

The SBSIA Management Plan indicates that all facilities and permittee use will be managed so as to not adversely impact vegetation, with particular emphasis on unique or sensitive areas (e.g., the rock garden below the summit). Disturbance to vegetation will be minimized except where it has been determined that vegetative manipulation (e.g., weed management, planting of native species, or rehabilitation of compacted soils) will enhance or perpetuate the areas unique botanical, biological, or scenic characteristics. The SBSIA Management Plan also mandates monitoring and assessment of vegetative conditions prior to Project implementation to prevent unacceptable levels of disturbance and/or change. Mitigation is required to minimize or eliminate the effects of Project activities that are found to be incompatible with SBSIA guidelines. The SBSIA Management Plan allows removal of noble fir trees within the SBSIA only to protect or enhance botanical and scenic values, protect established facilities, or provide for public safety.

Alternative 2A and Alternative 3C would require construction at the Marys Peak communications site within the SBSIA. Under Alternative 2A, the communications facilities at the summit would not be consolidated, as directed by the SBSIA Management Plan, while Alternative 3C would enable consolidation of the communications buildings, but not the consolidation of the steel-lattice communications structures. To consolidate structures, the steel-lattice structure would need to be 20 to 40 feet taller than the proposed structure height to support all the microwave dishes and associated equipment that would be mounted on the structure.

Because the CPI communications site is located on a 60-acre parcel owned by the City of Corvallis, Alternative 4 would not involve construction within the SBSIA, except for the removal of the existing BPA communications site on Marys Peak. Although the SBSIA Management Plan does not cover lands owned by the City of Corvallis, USFS and the City have a memorandum of agreement to manage the city’s lands in a manner compatible with USFS guidelines (USFS 1989). The City retains the responsibility for lease issuance and fee collection for their electronics lessees, but confers with USFS prior to acting on lease applications in an effort to avoid management conflicts.

The impacts assessments in Chapter 3 of this EA were used to determine conformance of each of the action alternatives with the resource requirements of the SNF LRMP 1990 and the supporting SBSIA Management Plan. Each of the action alternatives would conform to the SNF LRMP and the SBSIA

Management Plan's vegetation requirements contingent on implementation of the mitigation measures listed in Section 3.5, Vegetation.

4.4.3 USFS Scenic Resources Compliance

USFS manages scenic resources through the Visual Management System established in *The National Forest Management Handbook, Volume 2, Agricultural Handbook 462* (USFS 1974) to inventory, classify, and manage lands for scenic resource values. Scenic resources are managed through Visual Quality Objectives (VQOs) designed to provide measurable standards or objectives that direct varying degrees of acceptable change to national forest landscapes (USFS 1974). The VQOs establish minimum acceptable thresholds for landscape alterations and are defined in Section 3.7.1. of this EA.

In 1995, USFS scenic resource management guidelines and monitoring techniques evolved into the Scenery Management System (SMS) (USFS 1995). Conceptually, the SMS differs from the Visual Management System in that it emphasizes and increases the role of the public throughout the inventory and planning process, and it borrows from and is integrated with the concepts of ecosystem management. Instead of management objectives prescribed as VQOs, they are established as Scenic Integrity Objectives (SIOs). A VQO of Partial Retention correlates to an SIO of Moderate (M), with the associated management standard defined as: *"Valued landscape character appears slightly altered. Noticeable deviations remain visually subordinate to the landscape character"* (USFS 1995).

The Marys Peak SBSIA Management Plan specifies that, with the exception of facilities needed for recreation and electronics facilities, the Marys Peak SBSIA is managed to meet the VQO of "Retention" (USFS 1989). The plan indicates that through, ". . . creative design of location, materials, forms, colors, and textures, necessary recreation and electronic facilities will be kept as inconspicuous as possible, and will meet the VQO of retention where practicable, but in no case being more dominant than the VQO of modification. Partial retention-foreground and partial retention-middleground VQOs are applied along the Marys Peak Road" (USFS 1989). Based on these requirements, the Marys Peak SBSIA is managed to meet the VQO of Retention; however, electronic facilities may achieve a Modification VQO standard where retention is not practical (USFS 1989). The SNF LRMP specifies management of Marys Peak Road (viewshed) as partial retention-foreground and middle ground-modification (USFS 1990).

The impacts assessment in Section 3.7, Visual Quality, of this EA was used to determine conformance with the visual requirements in the LRMP and the supporting SBSIA Management Plan. Each applicable VQO was considered to be met if the change in scenic integrity and visual dominance that would result from implementation of an alternative would not exceed the requirements of that VQO. The plan conformance determination would require implementation of the mitigation measures listed in Section 3.7.4.

Implementation of Alternative 2A would meet the VQO of modification because operation of the Project on Marys Peak would visually dominate the original characteristic landscape, particularly when viewed from locations at close proximity. This meets the VQO requirement of the SBSIA Management Plan. Alternative 2A would meet the required VQOs of partial retention-foreground and partial retention-middleground for locations along Marys Peak Road. Tree cutting would be in conformance with the visual standards provided in the LRMP (USFS 1990).

While the implementation of Alternative 2A would not meet the SBSIA Management Plan requirement that "The electronic equipment will be consolidated into a single structure to reduce visual impacts" (USFS 1989), the overriding 1990 SNF LRMP standards and guidelines for the concentration of electronic facilities on Marys Peak to minimize adverse effects on scenery and other resources of the SBSIA would be met. As this project is consistent with the Forest Plan, no Forest Plan amendment is necessary (pers. comm., K. Isacksen, Forest Environmental Coordinator, SNF, August 2020).

Implementation of Alternative 3C would meet the VQOs required in the SBSIA Management Plan and the SNF LRMP because of the removal of the existing BPA communications site and the consolidation of equipment within the USFS building. Although an additional steel-lattice structure would be constructed that would be 20 feet taller than the structure proposed under Alternative 2A, it would still meet the VQO of modification (See Section 3.7).

Implementation of Alternative 4 would meet the VQOs required in the SBSIA Management Plan and the LRMP of modification because it would remove the existing monopole and communications building at Marys Peak and would not introduce a new steel-lattice structure to the landscape. It would also meet the required VQOs of partial retention-foreground and partial retention-middleground for locations along Marys Peak Road. Tree cutting under Alternative 4 could be visually evident from Marys Peak Road, but it would be subordinate to the characteristic landscape.

4.4.4 Siuslaw National Forest Special-status Species

Regional Forester's Special Status Species List

Animal and plant species that were either “suspected” or “documented” to occur in the SNF, per the most recent Regional Forester's Special Status Species List (USFS 2019a) were considered when developing the Project's species lists.

The two animal species on the USFS Sensitive Species List considered to have the potential to occur in the Project study area are the purple martin and the red tree vole. Neither of these species was detected during 2018 or 2019 wildlife field surveys, as discussed in Section 3.6.2 of this EA.

The plant and fungi species on the USFS Sensitive Species List considered to have the potential to occur in the Project study area are listed in Appendix A of this EA. None of the USFS Sensitive plant species were observed during 2018 or 2019 vegetation field surveys. Eight sensitive fungi species were assumed to be present in suitable habitat in the BLM parcel where trees would be cut, as discussed in Section 3.5.4 of this EA. Although these eight fungi species are assumed to be present, they were not observed during the survey and are not previously documented in the area.

Management Indicator Species

Ten Management Indicator Species (MIS) were considered likely to occur within the Marys Peak and West Point Spur study areas (Appendix C). One of the MIS species is a mammal and nine are birds. Five MIS species were observed (or signs of their presence observed) during Project wildlife surveys at either Marys Peak or West Point Spur. The following species were observed at both Marys Peak and West Point Spur: northern flicker, red-breasted nuthatch, and the pileated woodpecker. The hairy woodpecker was only observed in the Marys Peak study area. The four MIS bird species observed within the study area are cavity-nesting species associated with coniferous and mixed conifer-hardwood forest that breed between March and July. Suitable habitat occurs in the study area and it is likely that they occur year round. Elk scat was also observed throughout the Marys Peak and West Point Spur study areas.

Forest Plan Survey and Manage Species

Three Survey and Manage species were considered likely to occur within the Marys Peak and West Point Spur study areas: the red tree vole and the great gray owl (*Strix nebulosi*) (Category A species) and the keeled jumping-slug (*Hemphillia burringtoni*) (Category D). The red tree vole and the keeled jumping-slug were not observed during surveys. However, a great gray owl was detected in the West Point Spur study area on City of Corvallis land. This species does not regularly occur in Benton County or the Coast Range and is not known to be nesting in the study area (ORBIC 2018). Due to the high mobility of this

species, it is expected that the great gray owl would only temporarily use the forested habitat in the study area for dispersal or foraging. Additional information can be found in Section 3.6.2 of this EA.

4.5 Bureau of Land Management

4.5.1 BLM Northwestern and Coastal Oregon Resource Management Plan

A small portion of the Project is located on lands administered by the BLM's Northwest Oregon District. BLM lands, which would only be affected under Alternative 2A and Alternative 3C, include about 0.18 miles (948 feet) of the access road leading from the public parking lot to the Marys Peak communications site and about 0.53 acres where up to 14 noble fir trees would be cut to create an unobstructed beam path.

BLM designated its parcel near the summit of Marys Peak as an Area of Critical Environmental Concern (ACEC). An ACEC is an area where special management attention is required to protect or prevent irreparable damage to important historic, cultural, scenic, and/or natural resources. In recognition of the unique scenic, botanical, and recreational values of the area and its proximity to the SBSIA, BLM designated its Marys Peak parcel an Outstanding Natural Area (ONA), a specific type of ACEC (BLM 1997).

The Northwestern and Coastal Oregon Resource Management Plan (RMP) guides management of the Marys Peak ACEC/ONA (BLM 2016). The RMP includes a management objective to "maintain or restore relevant and important values in Areas of Critical Environmental Concern, including Outstanding Natural Areas" (BLM 2016). Management of the ONA is similar to USFS management actions in the SBSIA, as documented in a MOU between BLM and USFS. Specifically, BLM management direction for Marys Peak ACEC stipulates that vegetation be managed to enhance scenic, botanical, and wildlife habitat values, while allowing for removal of hazard trees to maintain access to roads and facilities (BLM 2016). Given that the BLM parcel is managed in a manner similar to and consistent with SBSIA guidelines (as discussed above), Alternatives 2A and Alternative 3C would conform with guidelines in the RMP.

Visual resources on BLM-administered lands are managed according to the Visual Resource Management (VRM) System (BLM 1986). The VRM system provides the framework for managing visual values by classifying all BLM-administered lands as belonging to one of four VRM classes:

- **Class I:** Preserve the existing landscape character. This objective is assigned to areas with special designations such as national wilderness areas and the wild sections of national wild and scenic rivers.
- **Class II:** Retain the existing landscape character. The level of change to the existing landscape should be low.
- **Class III:** Partially retain the existing landscape character. The level of change to the characteristic landscape should be moderate.
- **Class IV:** Allow major modification of the existing landscape character that minimizes visual impacts to the extent possible.

The RMP specifies BLM-administered lands on Marys Peak (adjacent to the SBSIA) be managed per VRM Class IV. Class IV allows the most modification to scenic resources. Based on the analysis in Section 3.7, Visuals, of this EA, tree cutting under Alternative 2A and Alternative 3C would have a low impact on scenic resources and be in conformance with the VRM Class IV class. There would be no impacts on scenic resources on BLM lands from Alternative 4.

4.5.2 BLM Special-status Species

Oregon/Washington State Director's Special-status Species List

Animal and plant species that were either “suspected” or “documented” to occur in the Northwest Oregon District of the BLM, per the most recent State Director’s Special Status Species List (BLM 2019) were considered when developing the Project’s species lists.

Forty-four animal species were on the BLM Sensitive list, but only two species, the purple martin and the red tree vole, had the potential to occur in the study area. Neither of these species was detected during 2018 or 2019 surveys, as discussed in Section 3.6.2 of this EA.

The two invertebrate species listed as BLM Sensitive species that could occur in the study area, although a low likelihood, are the Suckley cuckoo bumble bee and the Siskiyou short-horned grasshopper. One species flies while the other flies for short distances or hops. As such, the area inhabited by the grasshopper invertebrate species could be relatively small, while for bumble bee, it could be relatively large since they could travel throughout the study area and beyond.

The plant and fungi species on the BLM Sensitive species list considered to have the potential to occur in the Project study area are listed in Appendix A of this EA. None of the BLM Sensitive plant species was observed during 2018 or 2019 vegetation field surveys. Eight BLM Sensitive fungi species were assumed to be present in suitable habitat in the BLM parcel where trees would be cut under Alternatives 2A and Alternative 3C. These eight fungi species were not observed during the survey and are not previously documented in the area, as discussed in Section 3.5.4 of this EA.

SNF botanists conducted a Biological Evaluation (BE) to assess potential impacts on the eight sensitive fungi species that are assumed to occur in the BLM parcel where trees would be cut under Alternative 2A and Alternative 3C. Vascular plant species were not included in the BE because they do not occur in the Project survey areas. Potential impacts on sensitive fungi include host tree removal, woody debris removal, and disturbing soil and duff layers. The SNF botanists made the determination that if the identified trees were cut on the BLM parcel, it could impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. The BLM concurred with the determination (pers. comm. with Heidi Christensen, Botanist, BLM, July 2, 2020).

Forest Plan Survey and Manage Species

The Survey and Manage species for the BLM are the same as for the USFS because they both come from the Northwest Forest Plan. See Section 3.6.2 (Wildlife Affected Environment) and Section 4.4.6. for a description of baseline conditions for Survey and Manage species for the BLM Northwest Oregon District.

4.6 State, Area-wide, and Local Plan and Program Consistency

BPA is a federal agency subject to state regulation only if there has been a waiver of federal sovereign immunity through federal law, consistent with the supremacy clause of the U.S. Constitution. The Federal Land Policy Management Act (FLPMA), 43 USC §1701 et seq., provides a limited waiver of federal sovereign immunity, such that federal agencies including BPA are required to comply with specific substantive provisions for environmental protection that may be identified by states for portions of the federal agency’s activities that would be located on federal lands.

BPA is committed to planning its projects to be consistent or compatible, to the extent practicable, with state plans and programs, as well as any substantive standards that these plans and programs may contain, even when not required by federal law. To work towards this goal, BPA typically provides Project information relevant to state permitting processes to state entities with a potential interest in

the project. In designing and carrying out its proposed projects, BPA strives to meet or exceed the substantive standards and policies of state regulations. In Oregon, land use planning is carried out at the local level, where cities and counties adopt and implement a comprehensive plan and zoning code consistent with statewide planning goals. The following local land use plans and classifications guide development in the area affected by the proposed Project.

4.6.1 Benton County Comprehensive Plan

The Marys Peak and West Point Spur Project components are located in Benton County, Oregon. The Marys Peak component is located on lands owned by USFS and BLM, and the West Point Spur component is located on land owned by USFS and City of Corvallis. The Benton County Comprehensive Plan was adopted in 1985 and updated in 2007.

The Marys Peak and West Point Spur Project components have a “Forest Conservation” zoning designation under Chapter 60 of the Benton County Code (BCC). Such a designation is intended to “conserve forest lands, promote the management and growing of trees, support the harvesting of trees and primary processing of wood products, and protect the air, water, and wildlife resources in the zone.” Microwave communications facilities are allowable in a “Forest Conservation” zone provided that a conditional use permit is approved by the Benton County Planning Commission based on compliance with the following criteria (BCC 60.215).

The project:

- Will not force a significant change in, or significantly increase the cost of, accepted farming or forest practices on agriculture or forest lands (BCC 60.220)
- Will not significantly increase fire hazards, fire suppression costs, or risks to fire suppression personnel (BCC 60.220)
- Does not seriously interfere with uses on adjacent property, with the character of the area, or with the purpose of the zone (BCC 53.215)
- Does not impose an undue burden on any public improvements, facilities, utilities, or services available to the area (BCC 53.215)

None of the Project action alternatives would affect agriculture or forestry, increase fire hazards or the burden of fire suppression, or seriously interfere with adjacent land uses. In addition, the Project would not be expected to impose any additional burden on public improvements, facilities, utilities, or services available to the area. As such, the Project action alternatives would be consistent with the land use plans of Benton County.

4.6.2 City of Albany Comprehensive Plan

The BPA Albany Substation is on BPA-owned property located in the City of Albany, Linn County, Oregon. The City of Albany Comprehensive Plan, which was adopted in December 1980 and was last amended in October 2017, outlines a policy to facilitate the continued provision of high-quality utility services and to encourage coordination from federal agencies in all land use activities.

The BPA Albany Substation is in an area zoned as a “Residential Single Family District (RS-6.5),” which Article 3 of the Albany Development Code (ADC) indicates is primarily intended for low-density single-family residential development. The ADC states, “Public and Commercial Communication Facilities are not allowed in residential zoning districts, except when the applicant can provide supportive documentation or evidence, to the satisfaction of the Community Development Director, that, if such a facility is not allowed, there will be a gap in service that denies service to an area within the community.”

Although BPA has not been using the BPA Albany Substation as a communications facility for the last decade, an existing communications building and steel-lattice communications structure remain on-site from previous BPA communications operations. The Project entails installing communications equipment, which constitutes only minor changes to the steel-lattice structure. Because the Project does not constitute a change in land use, Alternative 2A and Alternative 3C would both be consistent with the land use plans of the City of Albany.

4.6.3 Marion County Comprehensive Plan

The BPA Prospect Hill Communications Site is a BPA-owned property located in Marion County, Oregon. The Marion County Comprehensive Plan was most recently updated in December 2018. Marion County desires coordination from federal agencies and compliance with its comprehensive plan in the development and administration of federally owned lands.

The BPA Prospect Hill Communications Site is zoned as “Public,” meaning it is subject to regulations governing the development of individual parcels shown to be appropriate for specific public and semi-public uses, to ensure their compatibility with adjacent uses. Wireless communications facilities are a permitted use in public zones, although these facilities may be subject to development standards. BPA has already developed and currently operates a communications facility at the site, and proposed Project activities are minimal and associated with routine maintenance and upgrades. As such, Alternative 4 would be consistent with the land use plans of Marion County.

4.7 Cultural and Historical Resources

Preserving cultural resources allows Americans to have an understanding and appreciation of their origins and history. A cultural resource is an object, structure, building, site, or district that provides irreplaceable evidence of natural or human history of national, state, or local significance. Historic properties include national landmarks, prehistoric sites, historic sites, properties of traditional religious and cultural importance to a Native American tribe (also known as Traditional Cultural Properties), and other properties listed (or eligible for listing) on the National Register of Historic Places (NRHP). American Indian tribes have rights under specific laws, as well as the opportunity to voice concerns about issues under these laws, when their aboriginal territory falls within a proposed project area.

Cultural resource laws, regulations, and other directives include:

- Antiquities Act of 1906 (16 USC 431–433)
- Historic Sites Act of 1935 (16 USC 461–467)
- Section 106 of National Historic Preservation Act (16 USC 470 et seq.), as amended
- Archaeological Data Preservation Act of 1974 (16 USC 469 a-c)
- Archaeological Resources Protection Act of 1979 (16 USC 470 et seq.), as amended
- Native American Graves Protection and Repatriation Act (25 USC 3001 et seq.)
- Executive Order 13007 Indian Sacred Sites
- Oregon state law (ORS 97.740–97.760, 358.905–358.955, and 390.235) defines state regulation of archaeological and historic sites
- ORS 390.235 contains information on permits and conditions for excavation or removal of archaeological or historic materials
- ORS 97.740–97.760 prohibits disturbance of Indian burials

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effects of their actions on historic properties. The NHPA provides a process, known as the Section 106 process, that requires agencies to consult with states, interested and affected Tribes, and other parties

on various aspects of the process. It also requires agencies to identify and evaluate historic properties, and assess impacts to historic properties. Agencies then consult on ways to avoid, minimize, and mitigate for these impacts.

Through the Section 106 process and consultation, BPA is providing information about the Project to consulting parties, including the Oregon State Historic Preservation Office (SHPO), Oregon state archaeologist, USFS archaeologist, BLM archaeologist, and the following consulting tribes:

- Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians
- Confederated Tribes of the Grande Ronde Community of Oregon

BPA requested input on the level and type of proposed identification and evaluation efforts from the consulting parties. BPA also asked for information on cultural resources in the study area.

Background research within the project area identified the presence of historic resources and ethnographic resources that are or may be eligible for the NRHP. Field surveys were conducted in 2015 and in 2019 to identify cultural sites that could be impacted if they could not be avoided. Survey results were submitted to the consulting Tribes, SHPO, USFS, and BLM for review and comment.

The potential effects of each action alternative on cultural resources are discussed in Section 3.8, Cultural Resources, and summarized below.

All action alternatives would unavoidably affect the BPA Marys Peak communications site, which is eligible for the NRHP. Work conducted at the existing site under Alternative 2A would result in a loss of integrity and design, resulting in an adverse effect. Under Alternative 3C and Alternative 4, the BPA Marys Peak communications site building would be dismantled and removed. The site would be restored to natural vegetation and there would be no evidence of the existing site. Because the BPA Marys Peak communications site is eligible for the NRHP, removal of the building and monopole would be an adverse effect. If an action alternative is selected, BPA would work with consulting parties to determine appropriate mitigation for this adverse effect.

Alternative 2A and Alternative 3C would also affect The BPA Albany Substation, which is also eligible for the NRHP. However, the addition of equipment to the control house and to the existing steel-lattice structure would not affect the characteristics that make The BPA Albany Substation eligible for listing in the NRHP or the function of the substation and, therefore, would not affect eligibility for the NRHP.

Under Alternative 3C, an addition would be added to the USFS communications building on Marys Peak and a steel-lattice structure would be constructed near the USFS building. BPA would become a tenant in the new addition. Because the USFS communications site has not been evaluated for NRHP eligibility, effects to the resource have not yet been determined. If Alternative 3C is selected, an evaluation will be conducted and determination made, in concurrence with the SHPO.

Under Alternative 4, at the West Point Spur CPI communications site, improvements would be made to the site to enable BPA to occupy a portion of the existing building as a tenant. BPA would also install equipment and an ice bridge on the existing steel-lattice communications structure. Because the CPI communications site has not been evaluated for NRHP eligibility, effects to the resource from this work have not yet been determined. If Alternative 4 is selected, an evaluation will be conducted and determination made, in concurrence with the SHPO.

Under Alternative 4, the work at the Prospect Hill communications site would not affect cultural resources. There would be no effect to historic resources because the site is not considered eligible for the NRHP. There would be no effect to archaeological resources because work would take place in the graveled yard within the fence and there would be no ground disturbance that could affect subsurface resources.

Under all action alternatives, there is potential to adversely affect TCPs at Marys Peak and West Point Spur. Effects will be assessed by BPA and consulting parties, depending on the selected alternative.

If any cultural sites cannot be avoided, BPA will consult with the SHPO, consulting Tribes, and affected federal land managing agencies to determine if those cultural sites are eligible for listing on the NRHP. If they are, effects will be evaluated in consultation and appropriate mitigation agreed upon with consulting parties. If, during construction, previously unidentified cultural resources are found that would be adversely affected by the project, BPA would follow all required procedures and reinstate consultation.

4.8 Air Quality

The federal *Clean Air Act* (CAA), as revised in 1990 (Public Law [PL] 101–542 (42 USC 7401)), requires EPA and individual states to carry out a wide range of regulatory programs intended to assure attainment of National Ambient Air Quality Standards (NAAQS). In Oregon, EPA has delegated authority to the Oregon Department of Environmental Quality (ODEQ). Because Project activities would occur in areas that are currently in attainment for meeting the NAAQS and because no stationary sources of air emissions would occur, construction activities associated with the Project are exempted from state regulation. The potential effects of the Project on air quality are discussed in Section 3.11, Air Quality.

4.9 Greenhouse Gas Emissions

Gases that absorb radiation and prevent heat loss to space are called greenhouse gases (GHGs). Models predict that atmospheric concentrations of all GHGs will increase over the next century, but the extent and rate of change is difficult to predict, especially on a global scale. As a response to concerns over the predicted increase of global GHG levels, various federal and state mandates address the need to reduce GHG emissions, including the following:

- The Clean Air Act establishes regulations to control emissions from large generation sources such as power plants. Limited regulation of GHG emissions occurs through New Source Review requirements.
- In Oregon, House Bill 3543, from 2007 (ORS 468A.205), directs state and local governments, businesses, nonprofit organizations and individual residents to reduce GHG emissions by 2010. By 2020, the state is directed to achieve GHG levels that are 10 percent below 1990 levels. By 2050, the state is directed to achieve GHG levels that are at least 75 percent below 1990 levels.

GHG emissions for all action alternatives would be produced mainly from direct emissions resulting from the operation of vehicles and equipment during construction. GHG emissions for all action alternatives would be below EPA’s mandatory reporting threshold. The impact of any of the action alternatives on GHG concentrations would be low, as discussed in Section 3.11 of this EA.

4.10 Hazardous Materials

The application of several regulations that could pertain to the management and use of hazardous materials during the Project are summarized below.

4.10.1 The Spill Prevention Control and Counter-measures Act

The federal Spill Prevention Control and Counter-measures Act is intended to prevent discharges of oil and oil-related materials from reaching navigable waters and adjoining shorelines. It applies to facilities with total aboveground oil storage capacity (not actual gallons on site) of greater than 1,320 gallons and facilities with underground storage capacity of 42,000 gallons. However, no on-site storage of oil or oil-related materials is proposed as part of the Project.

4.10.2 Title III of the Superfund Amendments Act

Title III of the Superfund Amendments and Reauthorization Act provides funding for hazardous materials training in emergency planning, preparedness, mitigation implementation, response, and recovery. Eligible individuals include public officials, emergency service providers, medical personnel, and other tribal response and planning personnel. If the Project is implemented, BPA would notify the appropriate agencies if any hazardous materials are found during construction.

4.10.3 Uniform Fire Code

Development of a hazardous materials management plan may be required by local fire districts in accordance with the Uniform Fire Code. BPA would develop and implement such a plan, if required.

4.10.4 Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act registers and regulates pesticides and herbicides used during building maintenance and vegetation management. Herbicides are used within the fence at communications sites to control vegetation, including noxious weeds, when needed. Rodenticides could be used in the communications buildings if rodents are problematic. When BPA uses herbicides, the date, volume, concentration, and chemicals used are recorded and reported to state government officials. Herbicide containers are disposed of according to Resource Conservation and Recovery Act (RCRA) standards.

4.10.5 Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), as amended, is designed to provide a program for managing and controlling hazardous waste by imposing requirements on generators and transporters of this waste and on owners and operators of treatment, storage, and disposal facilities. Each facility owner or operator is required to have a permit issued by EPA or the state. Typical communications site projects, in BPA's experience, have generated small amounts of these hazardous wastes: solvents, pesticides, paint products, motor and lubricating oils, and cleaners. Small amounts of hazardous wastes may be generated by the Project. These materials would be disposed according to state law and RCRA.

If hazardous material, toxic substance, or petroleum products are discovered that could pose an immediate threat to human health or the environment, BPA requires that the contractor notify the appropriate BPA staff immediately. Other conditions such as large dump sites, drums of unknown substances, suspicious odors, and stained soil must also be reported immediately to BPA. In addition, the contractor would not be allowed to disturb such conditions until the BPA and the appropriate authorities have given the notice to proceed.

4.11 Executive Order on Environmental Justice

In February 1994, Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, was released to federal agencies. The order states that federal agencies shall identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

Guidelines provided by the Council on Environmental Quality (CEQ 1997) and EPA (1998) state that a minority community may be defined where either the minority population comprises more than 50 percent of the total population, or the minority population of the affected area is meaningfully greater than the minority population in the general population of an appropriate benchmark region used for comparison. Minority communities may consist of a group of individuals living in geographic proximity to one another or a geographically dispersed set of individuals who experience common conditions of an environmental effect. Further, a minority population exists if there is "more than one

minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds” (CEQ 1997). There would be no potential impacts on environmental justice populations from the Project because minority and low-income populations would not be affected by the Project.

4.12 Noise

The Federal Noise Control Act of 1972 (42 USC 4901 et seq.) requires that federal entities, such as BPA, comply with state and local noise requirements. Environmental noise is regulated by the state of Oregon, which establishes limits on levels and duration of noise. Temporary construction is exempted from state and local regulation. Allowable noise levels under state law, potential noise impacts from the project, and proposed mitigation are described in Section 3.10, Noise. The environmental analysis in that section indicates that the action alternatives would have low to moderate noise impacts with implementation of appropriate mitigation.

4.13 Transportation

According to the Oregon Revised Statutes Chapter 818 (Vehicle Limits), oversize or overweight vehicles need transportation permits to travel on highways and local public roads in the state. The construction contractor for the Project would consult with the Oregon Department of Transportation, Benton County Public Works Department, and Benton County Public Works Department County to secure necessary transportation permits for oversize or overweight vehicles used for Project construction.

4.14 Notice to the Federal Aviation Administration

The Federal Aviation Administration (FAA) requires BPA to submit its structure designs for FAA approval if a proposed structure is taller than 200 feet from the ground or water surface where the line crosses a body of water or if any part of the proposed structure is within a prescribed distance of an airport (FAR 49 CFR Part 77.13). The final communications structure design under Alternative 2A and Alternative 3C would not be submitted to the FAA for the Project because the communications structures would not be taller than 200 feet above ground, and would be located outside the prescribed distances of airports listed in the FAA airport directory. Under Alternative 4, no new structures are proposed.

Chapter 5 Persons, Tribes, and Agencies Receiving this EA

5.1 Introduction

BPA provided Project information to Tribes; local, state, and Federal agencies; public officials; public interest groups; businesses; libraries; media; and others who expressed an interest in the Project. BPA also provided information to landowners within 1 mile of Project components (BPA Marys Peak communications site, West Point Spur CPI communications site, BPA Albany Substation, and the BPA Prospect Hill communications site). These groups of stakeholders were provided opportunities to provide scoping comments and to comment on the draft Environmental Assessment (EA). They will be provided a copy of the final EA and agency decisions.

Specific individuals were contacted to gather information and data about the Project vicinity and applicable requirements, as part of consultation, or for permit applications. Specific entities who received Project information are listed below. Landowners and other private citizens are not listed due to privacy concerns.

5.2 Federal Agencies

The following federal agencies and representatives were contacted:

- U.S. Department of Agriculture
 - Animal and Plant Health Inspection Service
 - Forest Service, Central Coast Ranger District, Siuslaw National Forest
- U.S. Department of the Interior, Bureau of Indian Affairs
- U.S. Department of the Interior, Bureau of Land Management, Northwest Oregon District
- U.S. Department of the Interior, Fish and Wildlife Service
 - Portland and Newport Field Offices
 - Finley National Wildlife Refuge
- U.S. Department of Transportation, Federal Aviation Administration
- U.S. representatives and senators for districts encompassing the Project area
 - U.S. House of Representatives, House District 4 Eugene Office, Honorable Peter Defazio
 - U.S. House of Representatives, Oregon City District Office, Honorable Kurt Schrader
 - U.S. Senate, Honorable Jeff Merkley
 - U.S. Senate, Eugene Office, Honorable Ron Wyden

5.3 Tribes

The following Indian tribes were contacted:

- Confederated Tribes of Grand Ronde
- Confederated Tribes of Siletz
- Confederated Tribes of Coos Lower Umpqua and Siuslaw Indians
- Coquille Indian Tribe

5.4 State Agencies and Officials

The following state agencies and state officials were contacted:

- State of Oregon
 - Department of Agriculture, Native Plant Conservation Program
 - Department of Land Conservation and Development
 - Department of Forestry
 - Department of Environmental Quality
 - Oregon Military Department
 - Department of Fish and Wildlife, Salem Headquarters and South Willamette Watershed District Offices
 - Department of Transportation
 - Police, Fish and Wildlife Division
 - Watershed Enhancement Board
- Oregon State University
 - Department of Botany and Plant Pathology
 - Department of Forestry
 - Department of Fish and Wildlife
 - Oregon Flora Project
- Office of Governor
- Office of the Governor, Natural Resource Office
- State Senate District 12, Honorable Brian Boquist
- House of Representatives District 23, Honorable Mike Nearman

5.5 Local Government

The following local governments and their officials were contacted:

- City of Corvallis – City Manager, Communications Engineer, Department of Public Works, Corvallis Municipal Airport, and Corvallis Fire Department
- City of Philomath – Councilors, Public Works, City Planner, Manager, and Mayor
- County of Benton – Soil and Water Conservation District, Environmental Issues Committee/Weed Board, Sheriff’s Office, Board of Commissioners, and Natural Areas and Parks

5.6 Businesses and Public Interest Groups

The following businesses and public interest groups were contacted:

- Alsea River Cable
- Alsea Watershed Council
- American Forest Resource Council
- American Lands Alliance
- Association of O & C Counties
- Association of NW Steelheaders
- Associated Oregon Loggers, Inc.

- Audubon Society: Corvallis Chapter
- Audubon Society: Lincoln City Chapter
- Audubon Society: Salem Chapter
- Bateman Forest Management
- Benton County Amateur Radio Emergency Service
- Bio-Surveys, LLC. Corvallis Area Chamber of Commerce
- Cascade Pacific Resource Conversation and Development
- Cascadia Wildlands Project
- Center for Biological Diversity
- Chemeketans
- Coast Range Association
- Consumers Power Inc.
- Corvallis Environmental Center
- Corvallis to Sea Trail Partnership
- Eugene Museum of Natural History and Cultural History
- Eugene Natural History Society
- Ferris Nursery
- Forest Service Employees for Environmental Ethics
- Friends of Camp Cone
- Friends of Marys Peak
- Gates Tree Farm Company
- Green Diamond Resources
- Hampton Tree Farms Inc.
- Hancock Forest Management
- Institute for Applied Ecology
- Integrated Resource Management
- Klamath Fast Trekkers
- League of Women Voters of Oregon
- Marys Peak Alliance
- Marys Peak Sierra Club
- Marys Peak Stewardship Group
- Marys River Watershed Council
- Mid Coast Watershed Council
- Native Plant Society of Oregon, Corvallis Chapter and Willamette Valley Chapter
- Nature Conservancy Oregon Willamette Valley Conservation Program and Main Office
- NW Environmental Defense Center
- NW Forestry Association
- Obsidians
- Oregon Chapter Sierra Club, Marys Peak Group
- Oregon Environmental Council
- Oregon Natural Resources Council
- Oregon Society of American Foresters

- Oregon Wild
- Pacific Rivers
- Rocky Mountain Elk Foundation
- Silke Communications
- Siuslaw Collaborative Watershed Restoration Program
- Starker Forests Inc.
- Thompson Timber Company
- Thompson Tree Farm Inc.
- Union Pacific Corporation
- U.S. Hang Gliding and Paragliding Association
- Wilderness Society
- Xerces Society

5.7 Libraries

The following libraries were contacted:

- Oregon State Library, Regional Federal Depository
- Alsea Library
- Corvallis-Benton County Public Library
- Philomath Community Library

5.8 Media

The following media outlets were contacted:

- Albany Democrat Herald
- Corvallis Gazette Times

Chapter 6 Glossary

Access road – A road or road spur that provides access to BPA facilities, including communications sites, during construction and operation and maintenance.

Ambient noise – Background noise generated by existing noise sources typically present in the surrounding area.

Area of potential effect (APE) – Area where cultural resources must be studied and identified according to the National Historic Preservation Act.

A-weighted decibel (dBA) – A logarithmic unit of sound measurement based on an A-weighted scale commonly used for measuring environmental and industrial noise levels.

Basalt – Lava with a composition that is relatively high in iron and manganese.

Beam path – A line-of-sight path between two relay stations, using a directional antenna that transmits microwaves, forming a fixed radio connection between the two points.

Bedrock – Solid rock at the surface, or underlying other surface materials, of relatively great thickness and extent in its native location, as distinguished from boulders.

Best management practices (BMPs) – Measures that are taken to ensure any activity is conducted in an environmentally responsible manner that protects sensitive resources, such as water, air, and vegetation.

Biodiversity – The variety of life and its processes, including the variety in genes, species, ecosystems, and the ecological processes that connect everything in ecosystems; as used in this EA, this definition specifically excludes diversity contributed by non-native species; also see non-native species.

Buffer (vegetative) – A strip of permanent vegetation between waterways and human land uses.

Candidate species – Species identified by the U.S. Fish and Wildlife Service or NOAA Fisheries (federal) or the Oregon Department of Fish and Wildlife (state), which have sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act (federal) or Oregon Endangered Species Act (state), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.

Clean Air Act (CAA) – A 1963 Federal law, amended several times since, giving the Federal government powers to limit air pollution; also a term loosely applied to the Air Quality Act of 1967, which gave the Federal government a stronger regulatory role; an especially important effect was the development of standards based on concentrations of pollutants in air.

Climate change – Term used to refer to all forms of climatic inconsistency, but especially to significant change from one prevailing climatic condition to another; in some cases, “climate change” has been used synonymously with the term “global warming”; scientists, however, tend to use the term climate change in a wider sense inclusive of natural changes in climate, including climatic cooling.

Colluvium – Loose rock or sediment usually found at the bottom of a hillslope due natural downslope slide or from water.

Criteria pollutants – Air pollutants having National Ambient Air Quality Standards.

Critical habitat – As defined in the federal Endangered Species Act, designated areas within the geographic area occupied by a listed species at the time of listing, on which are found physical or biological features essential to the conservation of the species and which may require special management considerations for protection.

Cultural resources – Physical remains, objects, places, historic records, and traditional cultural practices or beliefs that connect people to their past.

dba – The first two letters (dB) are an abbreviation for decibel, the unit in which sound is most commonly measured (see decibel); the last letter (A) is an abbreviation for the scale (A scale) on which the sound measurements are made.

Diameter at breast height (dbh) – A standard method of expressing the diameter of a trunk of a standing tree

Distinct population segment (DPS) – A subgroup of a vertebrate species that is treated as a separate species for the purposes of listing under the federal Endangered Species Act (ESA); it is required that the subgroup be separable from the remainder of and significant to the species to which it belongs; used for some fish species in the Pacific Northwest.

Easement – A grant of the right to use land in a manner granted under a formal agreement between two parties; utilities generally acquire easements for transmission lines and other facilities, beam paths, and access roads to obtain the right to use the land for access, construction and improvements, and operation and maintenance.

Ecosystem – Interacting system of elements in a biological community, together with interactions with the surrounding environment.

Electromagnetic field (EMF) – Fields of force caused by electric voltage and current around the electric wire or conductor when an electric transmission line or any electrical wiring is in operation; magnetic fields exist only when current is flowing; electric fields are present in electrical appliances and cords whenever they are plugged in.

Electromagnetic radiation (EMR) – Radiation is the propagation of energy through space that can take the form of either waves or particles. The propagation of electromagnetic energy is one type of radiation.

Endangered species (federal) – Those plant and animal species officially designated (listed endangered) by the U.S. Fish and Wildlife Service or NOAA Fisheries under the federal Endangered Species Act as being in danger of extinction throughout all or a significant portion of their range because its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors.

Endangered Species Act (ESA) – The ESA of 1973 (16 USC 1536), as amended in 1988, is a federal act that establishes a national program for the conservation of threatened and endangered species of fish, wildlife and plants, and the preservation of the ecosystems on which they depend; administered by the U.S. Fish and Wildlife Service for wildlife and freshwater species and by the National Marine Fisheries Service, also known as NOAA Fisheries, for marine and anadromous species; these agencies decide whether to list species as threatened or endangered; federal agencies must avoid jeopardy to and aid the recovery of listed species; similar responsibilities apply to non-federal entities.

Environmental assessment (EA) – A document that provides one means of complying with the National Environmental Policy Act and defined at 40 CFR 1508.9; an EA evaluates the possible environmental effects of a Federal agency's proposed action and provides sufficient evidence to determine whether an environmental impact statement or a finding of no significant impact is warranted.

Erosion – The wearing away of the land surface by wind or water that occurs naturally from weather or runoff but can be intensified by land-clearing practices related to such activities as farming, residential or industrial development, road building, or timber-cutting; a material wear mechanism resulting from suspended particles in a flow stream of water or other fluid.

Extirpated – A species that was once present in an area but is now locally extinct.

Federal Columbia River Transmission System (FCRTS) – The electric transmission system in the Pacific Northwest built and operated by BPA; often referred to as the Federal transmission grid, or the BPA grid.

Federally listed – Species listed as threatened or endangered under the federal Endangered Species Act by the U.S. Fish and Wildlife Service or NOAA Fisheries.

Finding of no significant impact – A document by a federal agency to comply with the National Environmental Policy Act that presents the reasons why an action will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared, as defined at 40 CFR 1508.13.

Forb – An herbaceous flowering plant species that is not a graminoid (grass or grass-like species such as sedges or rushes).

Fugitive dust – Any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly, as a result of human activities.

Grasslands – Extensive meadows dominated by grasses and herbaceous native plants.

Greenhouse gases (GHGs) – Chemical compounds in the form of gases found in the earth's atmosphere that absorb and trap infrared radiation, or heat, that is reradiated from the surface of the earth; includes carbon dioxide (CO₂), methane (CH₄), nitrogen oxides (NO_x), nitrous oxide (NO₂), and water vapor (H₂O) that contribute to the greenhouse effect.

Habitat – The combination of biotic (living) and abiotic (non-living) components that provides the ecological support system for plant or animal populations.

Heating, ventilation and air conditioning (HVAC) – The system used to provide heating and cooling services to a building.

Herbaceous – Plants that possess little or no woody tissue; does not include shrubs and trees.

Herbicide – A chemical substance used to kill, slow, or suppress the growth of plants.

High-voltage – An electrical potential large enough to cause injury or damage. In electric power transmission engineering, high voltage is usually considered any voltage over approximately 35,000 volts. However, OSHA classifies any use of electrical service over 600 volts as high voltage.

Ice bridge – A metal structure constructed about 8 to 10 feet above the ground that runs between a steel-lattice structure and building. The ice bridge provides protection from ice and snow loading that could potentially damage communications and power cables.

Loamy residuum – Residuum is soil that results from the long weathering and disintegration of rocks. Loamy residuum is residual soil composed mostly of loam, defined as soil with roughly equal proportions of sand, silt, and clay.

Low-income population – A portion of the population that is below the current poverty line that could be disproportionately disadvantaged because of their limited financial resources.

Microwave – Meaning "small wave," a microwave is a radio signal in the frequency range from 300 MHz to 300 GHz or from 1 to 300 GHz, depending on the rating system. Except for AM and FM radio, shortwave radio and over-the-air TV, almost all other communications systems transmit microwaves, including satellites, cellular systems, wireless LANs and line-of-sight between buildings and across vast distances.

Minority population – Any readily identifiable group of minority persons who will be similarly affected by a proposed program, policy, or activity; a minority population is considered to be present if the

minority population percentage of the affected area is greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

Mitigation – Steps or measures taken to lessen the potential impacts or effects on a specific resource as the result of an action; mitigation could result in avoiding the impact completely, reducing or minimizing the impact, or compensating for the impact.

National Environmental Policy Act (NEPA) – 1970 law which requires Federal agencies to assess the environmental impacts of their actions before making decisions (42 UC § 4321 et seq.).

Native – A species, plant community type, or habitat whose presence in an area is due to natural processes and not as a result of direct human manipulation; native species originated in a given ecological area; native biotic elements and natural processes contribute to biological diversity.

Nonattainment area – The status of an air basin when it is not in compliance with applicable air quality standards for a specific pollutant.

Non-native – A species, plant community type, or habitat that has been introduced or modified as a result of human actions; non-native species may compete for space and nutrients with more desirable native species; non-native species are also referred to as introduced or exotic species.

Non-vascular – Species of plants that lack a developed system for transport of water and are small, thin plants, including mosses, liverworts, and lichens.

North American Electric Reliability Corporation (NERC) – A council consisting of nine Regional Reliability Councils/Corporations, encompassing virtually all of the power systems in the U.S. and Canada; formed by the electric utility industry in 1968 and incorporated in 1975 to promote reliable and adequate supplies of bulk electric power.

Noxious weeds – Invasive, nonnative plants that have been introduced into an environment outside their native range; identified by state law, they cause environmental and economic harm to some degree by negatively affecting public health, recreation, silviculture, crops, livestock, wildlife habitat, native plant communities, and other resources.

Particulate matter (PM) – Airborne particles including dust, smoke, fumes, mist, spray, and aerosols.

Perennial – When this term refers to plants, it means species that live for several years.

Power outage – A short- or long-term interruption in the delivery of electrical power to an area when the electrical provider removes a piece of equipment or a portion or all of a line from service; may be planned, such as during maintenance, or inadvertent, resulting from system or equipment damage or failure.

Prehistoric – Refers to cultural resources that predate European settlement in North America.

Project – In this EA, a specific BPA undertaking including BPA-assisted activities, which may include design, construction, and operation of an individual facility; research, development, demonstration, and testing for a process or product; funding for a facility, process, or product; or similar activities, as discussed at 40 CFR 1508.18(b)(4).

Propagules – Parts of plants that serve as means of vegetation reproduction, such as seeds, corms, tubers, offsets and runners.

Raptor – A bird of prey that hunts and kills other animals for food, including small birds, fish, mammals, lizards and insects; raptors are powerful flyers that hunt with their large, strong talons and sharply hooked bills; there are many species of raptors, including bird families such as eagles, hawks, falcons and owls.

Reliability – The measure of the ability of a power system to provide uninterrupted service, even while that system is under stress.

Revegetate – Reestablishing vegetation on a disturbed site.

Restoration – Renewing or repairing of a natural system so that its functions and qualities are comparable to its original, unaltered state.

Riparian – Habitat or areas, usually adjacent to rivers, streams, or lakes, where the vegetation and microclimate are heavily influenced by water.

Scenic byway – A road that is distinctive and recognized for its scenic, recreational, natural, historic, cultural, and archeological qualities.

Scoping – The process described at 40 CFR 1501.7; “public scoping process” refers to that portion of the scoping process where the public is invited to participate and where significant issues are identified for detailed analysis, as described at 40 CFR 1501.7 (a)(1) and (b)(4).

Sedimentation – Any finely divided organic and/or mineral matter deposited by air or water in nonturbulent areas

Seral – A seral community is the name given to each group of plants within a succession. A primary succession or pioneer community describes those plant communities occupying a site that has not previously been vegetated. Plants communities change as succession continues until reaching a relatively stable state, often called a late seral or climax community

Sheet erosion – The removal of a uniform, thin layer of soil by raindrops and overland flow on bare soil, particularly on sloping land.

Shrublands – Areas with 25 percent or greater cover of shrubs and no or very little tree cover.

Silt – Fine-grained portion of soil that is nonplastic, or only very slightly plastic, and that exhibits little or no strength when air-dry

Snag – A standing dead or dying tree that is created naturally when the tree top breaks or purposefully created by cutting off the top of the tree; snags provide unique wildlife habitat (for species that nest in tree cavities) and a food source (insects) for wildlife. For this Project, snags would be created by cutting the tree at about 20 feet above ground.

Species – A group of interbreeding individuals that does not interbreed with another such group. Similar and related species are grouped into a genus. Section 3 of the Endangered Species Act (ESA) defines species as including any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which breeds when mature.

Species of concern – Species considered by the US Fish and Wildlife Service to potentially be in jeopardy, but for which sufficient information does not exist to support listing on the federal threatened or endangered species lists

Stability – The attribute that enables a dynamic system to develop restoring forces equal to or greater than disturbing forces so as to maintain a state of equilibrium. In the context of BPA’s communications system, this means maintaining operations of BPA’s communications sites and equipment with minimal disruptions.

Stand – A contiguous community of **trees** relatively similar in characteristics like age, structure, distribution and spatial arrangement, condition, or structure that distinguish it from adjacent communities.

Structure (Communications) – As used in this EA, lattice-steel structures on which communications equipment, such as microwave dishes, are installed.

Substation – A non-generating electrical power station that serves to transform voltages to higher or lower levels, and serves as a delivery point to individual customers such as utilities or large industries; the BPA grid has more than 400 substations.

Talus – Sloping accumulation of rock debris.

Terrane – A distinctive geologic formation or group of rocks or the area in which such features occur.

Threatened species (federal) – A species officially designated by the U.S. Fish and Wildlife Service or NOAA Fisheries that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range, as defined in Section 3 of the Endangered Species Act (ESA).

Traditional Cultural Property (TCP) – Site that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that are rooted in that community's history, and are important in maintaining the continuing cultural identity of the community.

Transmission lines – The structures, insulators, conductors, and other equipment used to transmit electrical power at high voltage to electrical distribution facilities (substations).

Ultra High Frequency (UHF) - the band of electromagnetic radiation with a radio frequency range between 300 MHz and 3 GHz (3000 MHz). This band is also known as the decimeter band, with a wavelength ranging from 1 m to 1 dm. The UHF radiations are least affected by environmental factors, that is why they are most commonly used for TV and radio transmission and channel broadcasting. They have strong directivity, but, at the same time, the receiving error increases.

Vascular – Plant species which includes trees, shrubs, and most herbaceous species, as well as flowering plants and ferns.

Very High Frequency (VHF) – The radio frequency electromagnetic waves ranging from 30 to 300 MHz with corresponding wavelengths ranging from 1 m to tens of meters. VHF is widely used for FM broadcasting, television broadcasting, military and local mobile radio transmissions, traffic control long communications, radars, radio modems, as well as in marine and air navigation systems.

Visual quality objectives (VSOs) – Established goals that guide forest management activities on a landscape.

Water bar – A road construction feature that consists of a diagonal channel across the road that prevents erosion by diverting surface water (that would otherwise flow down the whole length of the road) off the road and into a stable drain way; without water bars, road wash-outs and accelerated road degradation can occur.

Western Electricity Coordinating Council (WECC) – The organization responsible for coordinating and promoting bulk electric system reliability of transmission operators within the western interconnection; WECC provides a forum for resolving transmission access disputes, and facilitates coordination of operating and planning activities among its members.

Whip antenna – An antenna that is a single, straight rod or wire that is flexible to prevent damage or breaking when disturbed. An example is the type of antenna found on many car models, although whip antennas can be larger.

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Appendices

Appendix A – Special-status Plant and Fungi Species Survey List

Appendix B – Plant and Fungi Species Observed during Vegetation Surveys

Appendix C – Special-status Wildlife Species Survey List

Appendix D – Wildlife Species Observed during Wildlife Surveys

Appendix E – Scenic Resources Analysis Photographs and Simulations

Appendix F – Public Comments and Agency Responses to the Draft Environmental Assessment

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Appendix A. Special-status Plant and Fungi Species Survey List

The following vascular and non-vascular special-status plant species and fungi species were considered as having the potential to occur at the Marys Peak (MP) and West Point Spur (WPS) study areas and were the focus of vegetation surveys. The following special-status rankings are used in the following table:

- **Federal ESA (USFWS) designations:**
 - F-E = Federally-listed Endangered Species
 - F-T = Federally-listed Threatened Species
 - F-SOC = Federally-listed Species of Concern

- **State: Oregon ESA and ODA:**
 - SC = state candidate
 - ST = state threatened
 - SE = state endangered
 - S1 = critically imperiled
 - S2 = imperiled
 - S3 = rare and uncommon, vulnerable
 - S4 = not rare and apparently secure
 - Note: Two “S” rankings (e.g., “S2S3”) are used when the ranking is likely in that range.

- **Oregon Biodiversity Information Center (ORBIC)**
 - List 1 = threatened or endangered throughout range
 - List 1-ex = extirpated in Oregon; threatened or endangered throughout the rest of its range
 - List 1-X = presumed extinct
 - List 2 = threatened, endangered or extirpated in Oregon, but secure or abundant elsewhere
 - List 2-ex = extirpated in Oregon; threatened or endangered throughout the rest of its range
 - List 3 = review, taxa for which more information is needed
 - List 4 = watch, taxa of conservation concern but are not currently threatened or endangered

- **Federal Special-Status (USFS and BLM) designations:**
 - S&M-A = Survey and Manage Species; rare, pre-disturbance surveys are practical
 - S&M-C = Survey and Manage Species; recommended to be protected from grazing
 - FS-S = U.S. Forest Service Sensitive Species
 - BLM-S = Bureau of Land Management Sensitive Species

Table A-1. Special-status Plant and Fungi Species Survey List

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
VASCULAR PLANT SPECIES					
Club-moss	<i>Lycopodiella inundata</i> bog club-moss	--	--	List 2	S
Club-moss	<i>Lycopodium complanatum</i> = <i>Diphasiastrum complanatum</i> ground cedar	--	--	List 2	S
Forb	<i>Abronia umbellata</i> ssp. <i>breviflora</i> pink sand-verbena	SOC	SE	List 1	S
Forb	<i>Anemone oregana</i> var. <i>felix</i> bog anemone	--	--	List 2	S
Forb	<i>Artemisia pycnocephala</i> coastal sagewort	--	--	List 2	S
Forb	<i>Atriplex gmelinii</i> Gmelin's saltbush	--	--	List 2	S
Forb	<i>Brodiaea terrestris</i> dwarf brodiaea	--	--	List 2	S
Forb	<i>Cardamine pattersonii</i> Saddle Mountain bittercress	--	SC	List 1	S
Forb	<i>Castilleja chambersii</i> Chamber's paintbrush	SOC	--	List 1	S
Forb	<i>Castilleja levisecta</i> golden paintbrush	FT	SE	List 1-ex	S
Forb	<i>Cicendia quadrangularis</i> timwort	--	--	List 2	S
Forb	<i>Coptis trifolia</i> three-leaf goldthread	--	--	List 2	S
Forb	<i>Corydalis aquae-gelidae</i> cold-water corydalis	--	SC	List 1	S
Forb	<i>Cypropedium montanum</i> = <i>Cypripedium montanum</i> mountain lady's slipper	--	S3S4	List 4	S
Forb	<i>Delphinium leucophaeum</i> white rock larkspur	SOC	SE	List 1	S
Forb	<i>Delphinium nuttallii</i> Nuttall's larkspur	--	--	List 2	S
Forb	<i>Delphinium oregonum</i> Willamette Valley larkspur	SOC	SC	List 1	S
Forb	<i>Delphinium pavonaceum</i> peacock larkspur	SOC	SE	List 1	S
Forb	<i>Diplacus tricolor</i> (<i>Mimulus tricolor</i>) three-colored monkeyflower	--	--	List 2	S
Forb	<i>Dodecatheon austrofrigidum</i> frigid shootingstar	SOC	--	List 1	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Forb	<i>Douglasia laevigata</i> smooth-leaved douglasia	--	--	List 3	S
Forb	<i>Elatine brachysperma</i> short seeded waterwort	--	--	List 2	S
Forb	<i>Enemion stipitatum</i> Siskiyou false rue (dwarf isopyrum)	--	S3	List 4	S
Forb	<i>Erigeron decumbens</i> var. <i>decumbens</i> Willamette Valley daisy	FE	SE	List 1	S
Forb	<i>Erigeron howellii</i> Howell's daisy	--	SC	List 1	S
Forb	<i>Erigeron peregrinus</i> var. <i>peregrinus</i> wandering daisy	--	--	List 2	S
Forb	<i>Erythronium elegans</i> Coast Range fawn-lily	SOC	ST	List 1	S
Forb	<i>Eucephalus gormanii</i> Gorman's aster	--	--	List 1	S
Forb	<i>Filipendula occidentalis</i> queen-of-the-forest	--	SC	List 1	S
Forb	<i>Fritillaria camschatcensis</i> black lily (Indian rice)	--	--	List 2	S
Forb	<i>Geum triflorum</i> var. <i>campanulatum</i> old man's whiskers	--	--	--	S
Forb	<i>Gilia millefoliata</i> seaside gilia	SOC	--	List 1	S
Forb	<i>Horkelia congesta</i> ssp. <i>congesta</i> shaggy horkelia	SOC	SC	List 1	S
Forb	<i>Howellia aquatilis</i> water howellia (howellia)	FT	ST	List 1	S
Forb	<i>Huperzia miyoshiana</i> Pacific fir-moss	--	--	List 2	S
Forb	<i>Hydrocotyle verticillata</i> whorled marsh-pennywort	--	--	List 2	S
Forb	<i>Impatiens ecornuta</i> spurless jewelweed (spurless touch-me-not)	--	--	List 2	S
Forb	<i>Iris tenax</i> var. <i>gormanii</i> Gorman's iris	--	--	List 1	S
Forb	<i>Lathyrus holochlorus</i> thin-leaved peavine	SOC	--	List 1	S
Forb	<i>Lewisia columbiana</i> var. <i>columbiana</i> Columbia lewisia	--	--	List 2	S
Forb	<i>Lewisia columbiana</i> var. <i>rupicola</i> rosy lewisia	--	--	List 2	S
Forb	<i>Lilium occidentale</i> western lily	FE	SE	List 1	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Forb	<i>Limonium californicum</i> western marsh-rosemary	--	--	List 2	S
Forb	<i>Lipocarpha micrantha</i> small-flowered lipocarpha	--	--	List 2	S
Forb	<i>Lomatium bradshawii</i> Bradshaw's desert parsley (Bradshaw's lomatium)	FE	SE	-List 1	S
Forb	<i>Lupinus oreganus</i> Kincaid's lupine	FT	ST/S2	List 1	S
Forb	<i>Micranthes hitchcockiana</i> Saddle Mt. saxifrage	SOC	SC	List 1	S
Forb	<i>Microseris bigelovii</i> coast microseris	--	--	List 2	S
Forb	<i>Navarretia williamettensis</i> Willamette navarretia	SOC	--	List 1	S
Forb	<i>Ophioglossum pusillum</i> Adder's-tongue	--	--	List 2	S
Forb	<i>Packera flettii</i> Flett's groundsel	--	--	List 2	S
Forb	<i>Phacelia argentea</i> silvery phacelia	SOC	ST	List 1	S
Forb	<i>Plantago macrocarpa</i> North Pacific plantain (Alaska plantain)	--	--	List 2	S
Forb	<i>Pyrrocoma racemosa</i> var. <i>racemosa</i> racemose pyrrocoma	--	--	List 2	S
Forb	<i>Romanzoffia thompsonii</i> Thompson's mistmaiden	--	--	List 1	S
Forb	<i>Rotala ramosior</i> lowland toothcup	--	--	List 2	S
Forb	<i>Scheuchzeria palustris</i> ssp. <i>americana</i> Scheuchzeria	--	--	List 2	S
Forb	<i>Sclerolinen digynum</i> Northwestern yellow flax	--	--	List 2	S
Forb	<i>Sericocarpus rigidus</i> white-topped aster	SOC	ST	List 1	S
Forb	<i>Sidalcea hendersonii</i> Henderson's sidalcea (checkermallow)	--	--	List 1	S
Forb	<i>Sidalcea hirtipes</i> bristly-stemmed sidalcea	--	SC	List 1	S
Forb	<i>Sidalcea nelsoniana</i> Nelson's checker-mallow (Nelson's sidalcea)	FT	ST	List 1	S
Forb	<i>Silene douglasii</i> var. <i>oraria</i> Cascade Head catchfly	SOC	ST	List 1	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Forb	<i>Sisyrinchium hitchcockii</i> Hitchcock's blue eyed grass	SOC	S1	List 1	S
Forb	<i>Sisyrinchium sarmentosum</i> pale blue-eyed grass	SOC	SC	List 1	S
Forb	<i>Stellaria humifusa</i> creeping chickweed (starwort)	--	--	List 2	S
Forb	<i>Streptopus streptopoides</i> kruhsea	--	--	List 2	S
Forb	<i>Sullivantia oregana</i> Oregon sullivantia	SOC	SC	List 1	S
Forb	<i>Taraxia ovata</i> golden eggs (suncup)	--	--	List 2	S
Forb	<i>Utricularia gibba</i> humped bladderwort	--	--	List 2	S
Forb	<i>Utricularia minor</i> lesser bladderwort	--	--	List 2	S
Forb	<i>Utricularia ochroleuca</i> northern bladderwort	--	--	List 2	S
Forb	<i>Viola praemorsa ssp. praemorsa</i> canary violet (upland canary violet)	--	--	List 3	S
Forb	<i>Wolffia borealis</i> dotted water-meal	--	--	List 2	S
Forb	<i>Wolffia columbiana</i> Columbia water-meal	--	--	List 2	S
Gram	<i>Agrostis howellii</i> Howell's bentgrass	--	SC	List 1	S
Gram	<i>Calamagrostis breweri</i> Brewer's reedgrass	--	--	List 2	S
Gram	<i>Carex brevicaulis</i> = <i>Carex zikae</i> short stemmed sedge	--	--	List 2	S
Gram	<i>Carex comosa</i> bristly sedge (bottlebrush sedge)	--	--	List 2	S
Gram	<i>Carex livida</i> pale sedge	--	--	List 2	S
Gram	<i>Carex macrocephala</i> bighead sedge	--	--	List 2	S
Gram	<i>Carex macrochaeta</i> large-awn sedge (Alaska long-awned sedge)	--	--	List 2	S
Gram	<i>Carex pluriflora</i> many-flowered sedge	--	--	List 2	S
Gram	<i>Chloropyron maritimum ssp. palustre</i> Pt. Reyes bird's-beak	SOC	SE	List 1	S
Gram	<i>Cyperus acuminatus</i> short-pointed cyperus	--	--	List 2	S
Gram	<i>Eriophorum chamissonis</i> russet cotton-grass	--	--	List 2	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Gram	<i>Juncus kelloggii</i> Kellogg's rush (Kellogg's dwarf rush)	--	--	List 2	S
Gram	<i>Myrica gale</i> sweet bayberry (sweet gale)	--	--	List 3	S
Gram	<i>Poa laxiflora</i> loose-flowered bluegrass	--	S3	List 4	S
Gram	<i>Poa unilateralis ssp. pachypholis</i> ocean bluff bluegrass (ocean bluff grass)	--	--	List 1	S
Gram	<i>Polystichum californicum</i> California sword-fern	--	--	List 2	S
Gram	<i>Rhynchospora alba</i> white beakrush	--	--	List 2	S
Gram	<i>Schoenoplectus subterminalis</i> water clubrush	--	--	List 2	S
Gram	<i>Scirpus pendulus</i> drooping bulrush	--	--	List 2	S
NON-VASCULAR PLANT SPECIES					
Bryophyte	<i>Andreaea nivalis</i> Schofield's andreaea moss (snow rock moss)	--	--	List 3	S
Bryophyte	<i>Andreaea schofieldiana</i> moss	--	--	List 2	S
Bryophyte	<i>Anomobryum julaceum</i> anomobryum moss (slender silver moss)	--	--	List 3	S
Bryophyte	<i>Anthelia julacea</i> alpine silverwort (liverwort)	--	--	--	S
Bryophyte	<i>Barbilophozia barbata</i> liverwort (bearded pawwort)	--	--	List 2	S
Bryophyte	<i>Blepharostoma arachnoideum</i> liverwort	--	S2	List 2	S
Bryophyte	<i>Bruchia bolanderi</i> Bolander's pygmy moss (Bolander's candle moss)	--	--	List 3	S
Bryophyte	<i>Bryum calobryoides</i> moss (beautiful bryum)	--	SC	List 2	S
Bryophyte	<i>Calypogeia sphagnicola</i> liverwort (bog pouchwort)	--	--	List 2	S
Bryophyte	<i>Campylopus schmidii</i> moss	--	--	List 4	S
Bryophyte	<i>Campylopus subulatus</i> awl-leaved swan-neck moss	--	--	List 3	S
Bryophyte	<i>Cephaloziella spinigera</i> liverwort (spiny threadwort)	--	--	List 2	S
Bryophyte	<i>Cynodontium jenneri</i> Jenner's dog-tooth moss	--	--	List 3	S
Bryophyte	<i>Encalypta brevicollis</i> extinguisher moss	--	--	List 2	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Bryophyte	<i>Encalypta brevipes</i> moss (candle snuffer moss)	--	--	List 2	S
Bryophyte	<i>Entosthodon fascicularis</i> moss (banded cord-moss)	--	--	List 2	S
Bryophyte	<i>Ephemerum serratum</i> serrated earth-moss	--	--	List 2	S
Bryophyte	<i>Fissidens fontanus</i> moss (water pocket moss)	--	--	List 4	S
Bryophyte	<i>Grimmia anomala</i> Grimmia dry rock moss	--	--	--	S
Bryophyte	<i>Grimmia lisae</i> Flett's dry rock moss	--	--	List 3	S
Bryophyte	<i>Gymnomitrium concinatum</i> liverwort (braided frostwort)	--	--	List 2	S
Bryophyte	<i>Haplomitrium hookeri</i> liverwort	--	--	List 2	S
Bryophyte	<i>Herbertus aduncus</i> ssp. <i>aduncus</i> = <i>Herbertus aduncus</i> liverwort (bent scissor-leaved liverwort)	--	--	List 2	S
Bryophyte	<i>Herbertus dicranus</i> Pacific scissorleaf liverwort	--	--	List 2	S
Bryophyte	<i>Hygrobiella laxifolia</i> liverwort (lax notchwort)	--	--	List 3	S
Bryophyte	<i>Iwatsukiella leucotricha</i> moss	--	--	List 2	S
Bryophyte	<i>Kurzia makinoana</i> liverwort	--	--	List 2	S
Bryophyte	<i>Limbella fryei</i> moss (Frye's limbella moss)	SOC	SC	List 1	S
Bryophyte	<i>Lophozia gillmanii</i> Gillman's pawwort (liverwort)	--	--	--	S
Bryophyte	<i>Lophozia laxa</i> stream ladderwort	--	--	--	S
Bryophyte	<i>Marsupella emarginata</i> var. <i>aquatica</i> (robust rustwort; liverwort)	--	--	List 2	S
Bryophyte	<i>Metzgeria violacea</i> liverwort	--	--	List 4	S
Bryophyte	<i>Micromitrium synoicum</i> micromitrium moss	--	--	List 2	S
Bryophyte	<i>Physcomitrella patens</i> physcomitrella moss (spreading-leaved earth moss)	--	--	List 2	S
Bryophyte	<i>Physcomitrium immersum</i> immersed bladder-moss	--	--	List 3	S
Bryophyte	<i>Plagiochila semidecurrens</i> var. <i>alaskana</i> liverwort	--	--	--	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Bryophyte	<i>Plagiothecium cavifolium</i> moss (round silk moss)	--	--	List 3	S
Bryophyte	<i>Plagiothecium piliferum</i> moss (hair silk moss)	--	S3	List 3	--
Bryophyte	<i>Pohlia bolanderi</i> Bolander's thread-moss (Bolander's pohlia moss)	--	--	List 3	S
Bryophyte	<i>Pohlia ludwigii</i> Ludwig's thread-moss (Ludwig's nodding moss)	--	--	List 3	S
Bryophyte	<i>Polytrichastrum sexangulare</i> var. <i>sexangulare</i> northern haircap moss	--	--	List 3	S
Bryophyte	<i>Polytrichum strictum</i> moss (hummock haircap moss)	--	--	List 2	S
Bryophyte	<i>Porella vernicosa</i> ssp. <i>fauriei</i> Pacific scalemoss (liverwort)	--	--	--	S
Bryophyte	<i>Preissia quadrata</i> blister ribbon (narrow mushroom- headed liverwort)	--	--	List 2	S
Bryophyte	<i>Racomitrium brevipes</i> moss	--	--	List 3	--
Bryophyte	<i>Racomitrium ryszardii</i> moss	--	--	List 3	S
Bryophyte	<i>Radula brunnea</i> brown flatwort (liverwort)	--	--	List 2	S
Bryophyte	<i>Rhytidiadelphus subpinnatus</i> moss (subpinnate gooseneck moss)	--	--	List 3	S
Bryophyte	<i>Rhytidium rugosum</i> crumpled-leaf moss (golden glade-moss)	--	--	List 2	S
Bryophyte	<i>Rosulabryum gemmascens</i> moss	--	--	List 3	S
Bryophyte	<i>Scapania gymnostomophila</i> liverwort (narrow-leaved earwort)	--	SC	List 2	S
Bryophyte	<i>Schistostega pennata</i> schistostega moss	--	--	--	S, S&M-A
Bryophyte	<i>Scouleria marginata</i> moss (margined streamside moss)	--	--	List 3	S
Bryophyte	<i>Sphaerocarpos hians</i> liverwort	--	ST	List 1	S
Bryophyte	<i>Sphagnum oregonense</i> moss	--	--	List 3	S
Bryophyte	<i>Tetraphis geniculata</i> moss (geniculate four-tooth moss)	--	--	List 2	S, S&M-A
Bryophyte	<i>Tetraplodon mnioides</i> moss (entire-leaved nitrogen moss)	--	S3	List 3	--
Bryophyte	<i>Thamnobryum neckeroides</i>	--	--	List 3	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
	moss				
Bryophyte	<i>Tortella fragilis</i> moss (fragile twisted moss)	--	--	List 3	S
Bryophyte	<i>Trichostomum tenuirostre</i> var. <i>tenuirostre</i> moss	--	--	List 3	S
Bryophyte	<i>Triquetrella californica</i> three-ranked knob moss (California triquetrella moss)	--	ST	List 1	S
Bryophyte	<i>Tritomaria quinquedentata</i> liverwort (large notchwort)	--	--	List 2	S
Fungus	<i>Acanthophysium farlowii</i> = <i>Aleurodiscus</i> <i>farlowii</i>	--	--	List 3	S
Fungus	<i>Albatrellus avellaneus</i>	--	--	List 1	S
Fungus	<i>Albatrellus caeruleoporus</i> = <i>Neoalbatrellus caeruleoporus</i>	--	--	List 3	S
Fungus	<i>Albatrellus dispansus</i>	--	--	List 3	S
Fungus	<i>Albatrellus skamanius</i>	--	--	List 3	S
Fungus	<i>Amanita novinupta</i>	--	--	List 2	S
Fungus	<i>Balsamia nigrans</i>	--	S2	List 3	S
Fungus	<i>Boletus regius</i>	--	S2	List 3	S
Fungus	<i>Brauniellula albipes</i>	--	--	List 3	S
Fungus	<i>Bridgeoporus nobilissimus</i> noble polypore	--	--	List 3	S&M-A
Fungus	<i>Chamonixia caespitosa</i>	--	--	List 2	S
Fungus	<i>Choiromyces alveolatus</i>	--	--	List 3	S
Fungus	<i>Chrysomphalina grossula</i>	--	--	List 3	S
Fungus	<i>Clavariadelphus subfastigiatus</i>	--	S2	List 3	S
Fungus	<i>Clavulina castaneopes</i> var. <i>lignicola</i>	--	--	List 3	S
Fungus	<i>Clitocybe senilis</i>	--	S3	List 3	--
Fungus	<i>Clitocybe subditopoda</i>	--	--	List 3	S
Fungus	<i>Conocybe subnuda</i>	--	--	List 3	S
Fungus	<i>Cortinarius barlowensis</i>	--	--	List 2	S
Fungus	<i>Cortinarius cyanites</i>	--	S2	List 2	S
Fungus	<i>Cortinarius depauperatus</i>	--	--	List 3	S
Fungus	<i>Cortinarius pavelekii</i>	--	--	List 1	S
Fungus	<i>Russula idahoense</i> (<i>Cystangium</i> <i>idahoensis</i> or <i>Martellia idahoensis</i>)	--	S1	List 1	S
Fungus	<i>Dendrocollybia racemosa</i>	--	--	--	S
Fungus	<i>Elaphomyces asperulus</i>	--	--	List 3	S
Fungus	<i>Elaphomyces decipiens</i>	--	S1	List 3	S
Fungus	<i>Elaphomyces reticulatus</i>	--	--	List 3	S
Fungus	<i>Elaphomyces subviscidus</i>	--	S1S2	List 3	S
Fungus	<i>Endogone oregonensis</i>	--	S2	List 3	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Fungus	<i>Fevansia aurantiaca</i>	--	--	List 3	S
Fungus	<i>Gastroboletus imbellus</i>	--	--	List 1-X	S
Fungus	<i>Gastroboletus ruber</i>	--	S3	List 4	S
Fungus	<i>Lactarius s silviae (Gastrolactarius camphoratus)</i>	--	--	--	S
Fungus	<i>Gastrolactarius crassus</i>	--	--	--	S
Fungus	<i>Genea compacta</i>	--	--	List 3	S
Fungus	<i>Glomus pubescens</i>	--	--	List 3	S
Fungus	<i>Gymnomyces monosporus</i>	--	S1	List 3	--
Fungus	<i>Gymnomyces nondistincta</i>	--	--	List 1	S
Fungus	<i>Hebeloma occidentale</i>	--	--	List 1-X	S
Fungus	<i>Hydnotrya inordinata</i>	--	--	List 3	S
Fungus	<i>Hydopus marginellus</i>	--	--	List 2	S
Fungus	<i>Hygrophorus albicarneus</i>	--	--	List 3	S
Fungus	<i>Hygrophorus albiflavus</i>	--	--	List 2-ex	S
Fungus	<i>Leptonia caesiocincta</i>	--	--	List 3	S
Fungus	<i>Leptonia occidentalis var. occidentalis</i>	--	S1	List 1	--
Fungus	<i>Leptonia subeuchroa</i>	--	--	List 2-ex	S
Fungus	<i>Leptonia violaceonigra</i>	--	--	List 3	S
Fungus	<i>Leucogaster microsporus</i>	--	S3	List 4	--
Fungus	<i>Leucogaster odoratus</i>	--	--	List 3	S
Fungus	<i>Lyophyllum acutipes</i>	--	--	List 1-X	S
Fungus	<i>Lyophyllum furfurellum</i>	--	--	List 2-ex	S
Fungus	<i>Lyophyllum lubricum</i>	--	--	List 1-X	S
Fungus	<i>Lyophyllum pallidum</i>	--	--	List 1-X	S
Fungus	<i>Lyophyllum solidipes</i>	--	--	List 1-X	S
Fungus	<i>Macowanites chlorinosmus</i>	--	--	List 3	S
Fungus	<i>Martellia medlockii</i>	--	--	List 3	S
Fungus	<i>Melanogaster natsii</i>	--	--	List 3	S
Fungus	<i>Mycena gaultheri</i>	--	--	List 3	S
Fungus	<i>Mycena quinaultensis</i>	--	--	List 3	S
Fungus	<i>Mycena tenax</i>	--	S2S3	List 3	S
Fungus	<i>Mythicomyces corneipes</i>	--	--	List 2	S
Fungus	<i>Octaviania macrospora</i>	--	--	List 1-X	S
Fungus	<i>Omphalina isabellina</i>	--	--	List 3	S
Fungus	<i>Otidea smithii</i>	--	S2	List 2	S
Fungus	<i>Phaeocollybia dissiliens</i>	--	S3	List 1	
Fungus	<i>Phaeocollybia gregaria</i>	--	S1S2	List 1	S
Fungus	<i>Phaeocollybia lilacifolia</i>	--	--	List 3	S
Fungus	<i>Phaeocollybia oregonensis</i>	--	--	List 1	S
Fungus	<i>Phaeocollybia pseudofestiva</i>	--	S3	List 3	S
Fungus	<i>Phaeocollybia radicata</i>	--	S3	List 3	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Fungus	<i>Phaeocollybia sipei</i>	--	--	--	S
Fungus	<i>Phaeocollybia spadicea</i>	--	--	--	S
Fungus	<i>Podostroma alutaceum</i> = <i>Trichoderma alutaceum</i>	--	S2	List 3	S
Fungus	<i>Pseudaleuria quinaultiana</i>	--	SE	List 3	S
Fungus	<i>Pseudorhizina californica</i> = <i>Gyromitra californica</i>	--	SC	List 4	S
Fungus	<i>Radiigera bushnellii</i>	--	--	List 3	S
Fungus	<i>Ramaria abietina</i> = <i>Phaeoclavulina abietina</i> green-straining coral mushroom	--	S2	List 2	S
Fungus	<i>Ramaria amyloidea</i>	--	--	List 3	S
Fungus	<i>Ramaria aurantiiscescens</i>	--	S3	List 4	--
Fungus	<i>Ramaria conjunctipes</i> var. <i>sparsiramosa</i>	--	--	List 4	S
Fungus	<i>Ramaria gelatiniaurantia</i>	--	S2	List 3	S
Fungus	<i>Ramaria gracilis</i>	--	S2	List 2	S
Fungus	<i>Ramaria largentii</i>	--	S2	List 3	S
Fungus	<i>Ramaria maculatipes</i>	--	S2	List 3	S
Fungus	<i>Ramaria rainierensis</i>	--	--	List 1	S
Fungus	<i>Ramaria rubella</i> forma <i>blanda</i>	--	SE	List 2	S
Fungus	<i>Ramaria rubribrunnescens</i>	--	SE/S2	List 3	S
Fungus	<i>Ramaria suecica</i>	--	S1S3	List 3	S
Fungus	<i>Rhizopogon abietis</i>	--	--	--	S
Fungus	<i>Rhizopogon alexsmithii</i>	--	SC	List 1	S
Fungus	<i>Rhizopogon atroviolaceus</i>	--	--	--	S
Fungus	<i>Rhizopogon brunneiniger</i>	--	SE/S2	List 3	S
Fungus	<i>Rhizopogon clavitisporus</i>	--	--	List 2	S
Fungus	<i>Rhizopogon ellipsosporus</i>	--	SC	List 1	S
Fungus	<i>Rhizopogon exiguus</i>	--	SE/S1S2	List 2	S
Fungus	<i>Rhizopogon inquinatus</i>	--	--	List 1	S
Fungus	<i>Rhizopogon masoniae</i>	--	--	List 1	S
Fungus	<i>Rhizopogon rogersii</i>	--	--	List 3	S
Fungus	<i>Rhizopogon semireticulatus</i>	--	--	List 3	S
Fungus	<i>Rhizopogon subcinnamomeus</i>	--	SE/S1	List 3	S
Fungus	<i>Rhizopogon subradicatus</i>	--	SC	List 2-ex	S
Fungus	<i>Rickenella swartzii</i>	--	--	List 3	S
Fungus	<i>Sarcodon fuscoindicus</i> violet hedgehog	--	--	List 2	S
Fungus	<i>Squamanita paradoxa</i>	--	--	List 2-ex	S
Fungus	<i>Stagnicola perplexa</i>	--	SC	List 2	S
Fungus	<i>Stephensia bynumii</i>	--	--	List 3	S
Fungus	<i>Stropharia albivelata</i>	--	S3	List 3	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Fungus	<i>Tricholomopsis fulvescens</i>	--	--	List 1-x	S
Fungus	<i>Tuber asa</i>	--	SC/S1	List 1	S
Fungus	<i>Tuber pacificum</i>	--	ST	List 1	S
Fungus	<i>Urnula craterium</i>	--	SC	List 2-ex	S
Fungus	<i>Vibrissea truncorum</i>	--	--	List 3	S
Lichen	<i>Anaptychia crinalis</i> hanging fringe lichen	--	--	List 3	S
Lichen	<i>Bryoria bicolor</i> electrified horsehair lichen	--	--	List 3	S
Lichen	<i>Bryoria pseudocapillaris</i> (formerly <i>B. spiralifera</i>) horse hair lichen	--	--	--	S
Lichen	<i>Bryoria subcana</i>	--	--	--	S
Lichen	<i>Buellia oidalea</i> disc lichen	--	--	List 3	S
Lichen	<i>Calicium abietinum</i>	--	S3	List 4	--
Lichen	<i>Calicium adpersum</i>	--	S1	List 2	S
Lichen	<i>Calicium quercinum</i>	--	--	List 3	S
Lichen	<i>Caloplaca stantonii</i> = <i>Gyalolechia stantonii</i> Stanton's orange lichen	--	--	List 3	S
Lichen	<i>Cladidium bolanderi</i>	--	--	List 2	S
Lichen	<i>Ephebe solida</i> Rockshag lichen	--	--	List 3	S
Lichen	<i>Heterodermia japonica</i> Japanese centipede lichen	--	--	List 2	S
Lichen	<i>Heterodermia leucomelos</i> chin strap lichen	--	--	--	S
Lichen	<i>Heterodermia sitchensis</i> seaside centipede lichen	--	--	List 2	S
Lichen	<i>Hypogymnia duplicata</i>	--	--	--	S, S&M-C
Lichen	<i>Hypogymnia pulverata</i> tube lichen	--	--	List 2	S
Lichen	<i>Hypogymnia subphysodes</i> Austral bone lichen	--	--	List 2	S
Lichen	<i>Hypotrachyna riparia</i> riparian loop lichen	--	--	List 1	S
Lichen	<i>Lecanora caesiorubella</i> ssp. <i>merrillii</i> Merrill's rim lichen	--	--	List 3	S
Lichen	<i>Leioderma soledatum</i> Treepelt lichen	--	--	List 2	S
Lichen	<i>Leptogium burnetiae</i> Burnet's skin lichen	--	--	--	S
Lichen	<i>Leptogium cyanescens</i> blue jellyskin	--	--	List 2	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Lichen	<i>Leptogium platynum</i> skin lichen (batwing vinyl lichen)	--	--	List 3	S
Lichen	<i>Lobaria linita</i> cabbage lung lichen	--	--	List 2	S
Lichen	<i>Lobaria linita var. tenuoir</i>	--	--	--	S, S&M-A
Lichen	<i>Melanelia commixta</i> intermingled camouflage lichen	--	--	List 3	S
Lichen	<i>Microcalicium arenarium</i> rock broom (sandwort microcalicium lichen)	--	--	List 2	S
Lichen	<i>Niebla cephalota</i> powdery fog lichen	--	--	List 2	S
Lichen	<i>Ochrolechia subplicans ssp. subplicans</i> crabseye lichen	--	--	List 3	S
Lichen	<i>Pannaria rubiginella</i> shingle lichen	--	--	List 2	S
Lichen	<i>Pannaria rubiginosa</i> brown-eyed shingle lichen	--	--	List 2	S
Lichen	<i>Pilophorus nigricaulis</i> charred matchstick lichen	--	--	List 2	S
Lichen	<i>Pseudocyphellaria hawaiiensis</i> gilded specklebelly lichen	--	S3	List 3	--
Lichen	<i>Pseudocyphellaria mallota</i>	--	S3	List 2	S
Lichen	<i>Pseudocyphellaria rainierensis</i> oldgrowth specklebelly lichen	--	--	List 4	S, S&M-A
Lichen	<i>Ramalina pollinaria = Ramalina labiosorediata</i> powdery twig lichen	--	--	List 2	S
Lichen	<i>Schaereria dolodes</i> tricky lecidea lichen	--	S2	List 3	S
Lichen	<i>Sclerophora peronella</i>	--	--	--	S
Lichen	<i>Sigridea californica</i> California dirina lichen	--	--	List 3	S
Lichen	<i>Stereocaulon spathuliferum</i> chalk foam lichen (snow lichen)	--	--	List 2	S
Lichen	<i>Sticta arctica</i> Arctic moon lichen	--	--	List 2	S
Lichen	<i>Sticta weigeli</i>	--	ST	List 4	S
Lichen	<i>Teloschistes flavicans</i> golden-hair lichen	--	--	List 2	S
Lichen	<i>Thelomma mammosum</i> rock nipple lichen (doll's eye)	--	--	List 3	S
Lichen	<i>Tholurna dissimilis</i> arboreal urn lichen	--	--	List 2	S
Lichen	<i>Umbilicaria rigida</i> rigid naval lichen (roughened rocktripe lichen)	--	ST	List 3	S

Life Form	Scientific and Common Name	Status			
		Federal	State	ORBIC	SNF/BLM
Lichen	<i>Usnea lambii</i> zebra beard (banded beard lichen)	--	--	List 3	S
Lichen	<i>Usnea nidulans</i> nested beard lichen	--	--	List 2	S

Appendix B. Plant and Fungi Species Observed during Vegetation Surveys

The following vascular and non-vascular plant species were found at Marys Peak (MP) and West Point Spur (WPS) during field surveys in 2017 and 2018, respectively. Species were observed on land owned by the U.S. Forest Service (USFS), the Bureau of Land Management (BLM), and/or the City of Corvallis (City).

Legend: Species found at both MP and WPS
 Species found at MP site only
 Species found at WPS site only

Table B-1. Plant and Fungi Species Observed during Surveys

Life form	Family	Scientific and Common name (N-native; NN-non-native)	MP Fenced Area	MP Access Road	MP Tree Removal	CPI Site	WPS Access Road	Marys Peak Land Ownership	WPS Land Ownership
VASCULAR PLANT SPECIES									
Forb	Apiaceae	<i>Lomatium martindalei</i> -N Cascade desert parsley	X	X		X	X	USFS	USFS/City
Forb	Apiaceae	<i>Lomatium utriculatum</i> -N common lomatium	X	X				USFS	
Forb	Apiaceae	<i>Osmorhiza purpurea</i> -N purple sweetroot		X		X	X	USFS	USFS/City
Forb	Apocynaceae	<i>Apocynum androsaemifolium</i> -N spreading dogbane	X	X				USFS	
Forb	Aristolochiaceae	<i>Asarum caudatum</i> -N British Columbia wildginger					X		USFS
Forb	Asteraceae	<i>Achillea millefolium</i> -N common yarrow	X	X		X	X	USFS	USFS/City
Forb	Asteraceae	<i>Adenocaulon bicolor</i> -N American trailplant				X	X		City
Forb	Asteraceae	<i>Agoseris grandiflora</i> -N bigflower agoseris				X	X		USFS/City
Forb	Asteraceae	<i>Anaphalis margaritacea</i> -N western pearly everlasting	X	X		X	X	USFS	USFS/City
Forb	Asteraceae	<i>Bellis perennis</i> -NN English lawndaisy	X	X				USFS	
Forb	Asteraceae	<i>Cirsium edule</i> -N edible thistle				X			City
Forb	Asteraceae	<i>Hieracium albiflorum</i> -N white hawkweed	X	X				USFS	
Forb	Asteraceae	<i>Leucanthemum vulgare</i> -NN oxeye daisy	X	X		X	X	USFS	USFS/City
Forb	Asteraceae	<i>Matricaria discoidea</i> -NN disc mayweed	X	X			X	USFS	City

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Forb	Asteraceae	<i>Mycelis muralis</i> -NN wall-lettuce					X		USFS/City
Forb	Asteraceae	<i>Senecio jacobaea</i> -NN stinking willie		X			X	USFS	USFS/City
Forb	Asteraceae	<i>Senecio triangularis</i> -N arrowleaf ragwort	X	X		X	X	USFS	USFS/City
Forb	Asteraceae	<i>Taraxacum officinale</i> -NN common dandelion	X	X				USFS	
Forb	Berberidaceae	<i>Achlys triphylla</i> -N vanilla leaf		X	X	X	X	USFS/BLM	USFS/City
Forb	Berberidaceae	<i>Berberis nervosa</i> -N Cascade barberry		X		X	X	USFS	City
Forb	Berberidaceae	<i>Vancouveria hexandra</i> -N white insideout flower				X	X		City
Forb	Blechnaceae	<i>Blechnum spicant</i> -N deer fern		X	X			USFS/BLM	
Forb	Boraginaceae	<i>Myosotis arvensis</i> -NN field forget-me-not	X					USFS	
Forb	Brassicaceae	<i>Draba verna</i> -NN spring draba	X	X				USFS	
Forb	Brassicaceae	<i>Erysimum capitatum</i> var. <i>capitatum</i> -N sanddune wallflower		X				USFS	
Forb	Brassicaceae	<i>Turritis glabra</i> -N tower rockcress	X	X				USFS	
Forb	Caryophyllaceae	<i>Cerastium arvense</i> ssp. <i>strictum</i> -NN field chickweed	X	X				USFS	
Forb	Caryophyllaceae	<i>Dianthus armeria</i> ssp. <i>armeria</i> -NN Deptford pink	X					USFS	
Forb	Caryophyllaceae	<i>Silene douglasii</i> -N Douglas's catchfly	X	X				USFS	
Forb	Caryophyllaceae	<i>Stellaria crista</i> -N curled starwort		X				USFS	
Forb	Clusiaceae	<i>Hypericum perforatum</i> -NN common St. Johnswort	X	X		X	X	USFS	USFS/City
Forb	Cucurbitaceae	<i>Marah oreganus</i> -N wild cucumber					X		USFS
Forb	Dennstaedtiaceae	<i>Pteridium aquilinum</i> -N western brackenfern		X	X	X	X	USFS/BLM	USFS/City
Forb	Dryopteridaceae	<i>Polystichum munitum</i> -N western swordfern		X		X	X	USFS	USFS/City
Forb	Fabaceae	<i>Lotus parviflorus</i> -N smallflower bird's-foot trefoil					X		City

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Forb	Fabaceae	<i>Lupinus polyphyllus</i> -N bigleaf lupine					X		USFS
Forb	Fabaceae	<i>Lupinus rivularis</i> -N riverbank lupine		X	X	X	X	USFS/BLM	USFS/City
Forb	Fabaceae	<i>Lupinus sellulus</i> ssp. <i>lobbii</i> var. <i>sellulus</i> -N Donner Lake lupine	X	X				USFS	
Forb	Fabaceae	<i>Trifolium repens</i> -NN white clover	X	X		X	X	USFS	USFS/City
Forb	Fabaceae	<i>Vicia americana</i> var. <i>americana</i> -N American vetch		X				USFS	
Forb	Fabaceae	<i>Vicia sativa</i> -NN garden vetch				X	X		City
Forb	Fumariaceae	<i>Dicentra formosa</i> -N Pacific bleeding heart				X	X		USFS/City
Forb	Hydrophyllaceae	<i>Phacelia heterophylla</i> -N varileaf phacelia					X		USFS
Forb	Iridaceae	<i>Iris tenax</i> -N toughleaf iris				X	X		USFS/City
Forb	Liliaceae	<i>Allium crenulatum</i> -N Olympic onion		X				USFS	
Forb	Liliaceae	<i>Calochortus tolmiei</i> -N Tolmi star-tulip				X	X		City
Forb	Liliaceae	<i>Clintonia uniflora</i> -N bride's bonnet			X	X		BLM	City
Forb	Liliaceae	<i>Lilium columbianum</i> -N Columbia lily	X	X		X	X	USFS	City
Forb	Liliaceae	<i>Maianthemum racemosum</i> -N feathery false lily of the valley				X	X		USFS/City
Forb	Liliaceae	<i>Maianthemum stellatum</i> -N starry false lily of the valley			X	X	X	BLM	USFS/City
Forb	Liliaceae	<i>Prosartes smithii</i> -N largeflower fairybells				X			City
Forb	Liliaceae	<i>Streptopus amplexifolius</i> -N claspleaf twistedstalk				X			City
Forb	Liliaceae	<i>Trillium ovatum</i> -N Pacific trillium				X	X		USFS/City
Forb	Onagraceae	<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i> -N; fireweed		X		X	X	USFS	USFS/City
Forb	Orchidaceae	<i>Listera caurina</i> -N northwestern twayblade		X			X	USFS	USFS/City

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Forb	Oxalidaceae	<i>Oxalis trilliifolia</i> -N threeleaf woodsorrel				X			City
Forb	Plantaginaceae	<i>Plantago lanceolata</i> -NN narrowleaf plantain	X	X		X	X	USFS	USFS/City
Forb	Plantaginaceae	<i>Plantago major</i> -NN common plantain		X			X	USFS	City
Forb	Polemoniaceae	<i>Microsteris gracilis</i> -N slender phlox				X	X		USFS/City
Forb	Polemoniaceae	<i>Phlox diffusa</i> -N spreading phlox	X	X				USFS	
Forb	Polygonaceae	<i>Rumex acetosella</i> -NN common sheep sorrel	X	X	X	X	X	USFS/BLM	USFS/City
Forb	Portulacaceae	<i>Claytonia sibirica</i> -N Siberian springbeauty		X		X	X	USFS	USFS/City
Forb	Primulaceae	<i>Trientalis latifolia</i> -N broadleaf starflower				X			City
Forb	Ranunculaceae	<i>Anemone deltoidea</i> -N Columbian windflower				X			City
Forb	Ranunculaceae	<i>Anemone lyallii</i> -N Little Mountain thimbleweed		X	X			USFS/BLM	
Forb	Ranunculaceae	<i>Anemone oregana</i> var. <i>oregana</i> -N blue windflower			X			BLM	
Forb	Ranunculaceae	<i>Aquilegia formosa</i> -N western columbine					X		USFS
Forb	Ranunculaceae	<i>Coptis laciniata</i> -N Oregon goldenthread					X		USFS
Forb	Ranunculaceae	<i>Delphinium menziesii</i> -N Menzies' larkspur	X	X				USFS	
Forb	Ranunculaceae	<i>Delphinium nuttallii</i> -N upland larkspur				X	X		City
Forb	Ranunculaceae	<i>Ranunculus uncinatus</i> -N woodland buttercup	X	X				USFS	
Forb	Rosaceae	<i>Fragaria vesca</i> ssp. <i>bracteata</i> -N woodland strawberry	X					USFS	
Forb	Rosaceae	<i>Fragaria virginiana</i> -N Virginia strawberry		X		X	X	USFS	USFS/City
Forb	Rosaceae	<i>Rubus parviflorus</i> -N thimbleberry					X		USFS/City
Forb	Rubiaceae	<i>Galium trifidum</i> -N threepetal bedstraw					X		City
Forb	Rubiaceae	<i>Galium triflorum</i> -N fragrant bedstraw				X	X		USFS/City

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Forb	Saxifragaceae	<i>Heuchera chlorantha</i> -N tall alumroot					X		USFS
Forb	Scrophulariaceae	<i>Castilleja hispida</i> -N harsh Indian paintbrush	X	X			X	USFS	USFS
Forb	Scrophulariaceae	<i>Collinsia parviflora</i> -N blue eyed Mary	X	X			X	USFS	USFS
Forb	Scrophulariaceae	<i>Digitalis purpurea</i> -NN purple foxglove				X	X		USFS/City
Forb	Scrophulariaceae	<i>Scrophularia oregana</i> -N Oregon figwort					X		USFS/City
Forb	Scrophulariaceae	<i>Penstemon cardwellii</i> -N Cardwell's beardtongue	X	X	X	X	X	USFS/BLM	USFS/City
Forb	Violaceae	<i>Viola adunca</i> -N dog violet		X	X	X	X	USFS/BLM	City
Forb	Violaceae	<i>Viola glabella</i> -N pioneer violet	X	X	X	X	X	USFS/BLM	USFS/City
Gram	Cyperaceae	<i>Carex aquatilis</i> var. <i>dives</i> -N water sedge		X				USFS	
Gram	Cyperaceae	<i>Carex californica</i> -N California sedge		X		X	X	USFS	USFS/City
Gram	Cyperaceae	<i>Carex fracta</i> -N fragile sheath sedge	X	X	X			USFS/BLM	
Gram	Cyperaceae	<i>Carex hoodia</i> -N Hood's sedge				X			City
Gram	Cyperaceae	<i>Carex rossii</i> -N Ross' sedge	X	X	X			USFS/BLM	
Gram	Juncaceae	<i>Luzula comosa</i> ssp <i>comosa</i> -N Pacific woodrush				X	X		USFS/City
Gram	Juncaceae	<i>Luzula parviflor</i> -N smallflowered woodrush				X			City
Gram	Poaceae	<i>Agrostis exarata</i> -N spike bentgrass				X	X		USFS/City
Gram	Poaceae	<i>Agrostis pallens</i> -N seashore bentgrass	X	X				USFS	
Gram	Poaceae	<i>Aira caryophyllea</i> -NN silver hairgrass	X	X			X	USFS	USFS/City
Gram	Poaceae	<i>Bromus sitchensis</i> -N Alaska brome	X	X		X	X	USFS	USFS/City
Gram	Poaceae	<i>Bromus inermis</i> -NN smooth brome	X					USFS	
Gram	Poaceae	<i>Bromus</i> spp. bromus species				X			City

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Gram	Poaceae	<i>Cynosurus echinatus</i> -NN bristly dogstail grass	X	X			X	USFS	City
Gram	Poaceae	<i>Dactylis glomerata</i> -N orchardgrass				X			City
Gram	Poaceae	<i>Danthonia californica</i> -N California oatgrass		X			X	USFS	City
Gram	Poaceae	<i>Elymus glaucus</i> ssp. <i>glaucus</i> -N blue wildrye		X			X	USFS	City
Gram	Poaceae	<i>Festuca idahoensis</i> -N Idaho fescue				X	X		USFS/City
Gram	Poaceae	<i>Festuca idahoensis</i> ssp. <i>Roemeri</i> -N Roemer's fescue	X	X				USFS	
Gram	Poaceae	<i>Festuca rubra</i> ssp. <i>commutata</i> -N,NN red fescue	X			X	X	USFS	City
Gram	Poaceae	<i>Lolium perenne</i> ssp <i>perenne</i> -NN perennial ryegrass					X		City
Gram	Poaceae	<i>Poa annua</i> -NN annual bluegrass	X					USFS	
Gram	Poaceae	<i>Poa pratensis</i> -NN Kentucky bluegrass	X	X		X	X	USFS	USFS/City
Gram	Poaceae	<i>Poa secunda</i> -N Sandberg bluegrass					X		City
Shrub	Aceraceae	<i>Acer circinatum</i> -N vine maple		X			X	USFS	USFS/City
Shrub	Berberidaceae	<i>Mahonia aquifolium</i> -N hollyleaved barberry					X		USFS
Shrub	Betulaceae	<i>Corylus cornuta</i> -N beaked hazelnut					X		USFS
Shrub	Celastraceae	<i>Paxistima myrsinites</i> -N Oregon boxwood				X			City
Shrub	Ericaceae	<i>Vaccinium parvifolium</i> -N red huckleberry				X	X		USFS/City
Shrub	Fagaceae	<i>Chrysolepis chrysophylla</i> -N giant chinquapin				X			City
Shrub	Grossulariaceae	<i>Ribes lacustre</i> -N prickly currant				X			City
Shrub	Grossulariaceae	<i>Ribes sanguineum</i> -N redflower current					X		City
Shrub	Rosaceae	<i>Holodiscus discolor</i> -N oceanspray	X	X		X	X	USFS	USFS/City
Shrub	Rosaceae	<i>Prunus emarginata</i> -N bitter cherry					X		City

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Shrub	Rosaceae	<i>Rosa gymnocarpa</i> -N dwarf rose				X	X		USFS/City
Shrub	Rosaceae	<i>Rubus ursinus</i> -N California blackberry		X		X	X	USFS	USFS/City
Tree	Aceraceae	<i>Acer macrophyllum</i> -N bigleaf maple					X		USFS
Tree	Betulaceae	<i>Alnus rubra</i> -N red alder					X		USFS
Tree	Pinaceae	<i>Abies amabilis</i> -N Pacific silver fir				X			City
Tree	Pinaceae	<i>Abies grandis</i> -N grand fir		X	X	X	X	USFS/	USFS/City
Tree	Pinaceae	<i>Abies procera</i> -N noble fir		X	X	X	X	USFS/BLM	USFS/City
Tree	Pinaceae	<i>Pseudotsuga menziesii</i> -N Douglas-fir				X	X		USFS/City
Tree	Pinaceae	<i>Tsuga heterophylla</i> -N western hemlock				X	X		USFS/City
Tree	Rosaceae	<i>Malus</i> spp.-NN commercial apple species					X		USFS
NON-VASCULAR PLANT SPECIES									
Bryophyte	Andreaeaceae	<i>Andreaea rothii</i> -N andreaea moss	X	X				USFS	
Bryophyte	Aneuraceae	<i>Riccardia latifrons</i> -N				X			City
Bryophyte	Brachytheciaceae	<i>Brachythecium frigidum</i> -N cold brachythecium moss				X			City
Bryophyte	Brachytheciaceae	<i>Eurhynchium oregonum</i> -N Oregon eurhynchium moss				X	X		USFS/City
Bryophyte	Brachytheciaceae	<i>Isothecium myosuroides</i> -N isothecium moss			X	X	X	BLM	USFS/City
Bryophyte	Cephaloziellaceae	<i>Cephalozia bicuspidate</i> -N cephalozia liverwort				X			City
Bryophyte	Cephaloziellaceae	<i>Cephaloziella divaricate</i> -N cephalozia liverwort	X	X			X	USFS	USFS/City
Bryophyte	Cephaloziellaceae	<i>Cephalozia lacinulata</i> -N cephalozia liverwort				X			City
Bryophyte	Dicranaceae	<i>Dicranum fuscescens</i> -N dicranum moss			X		X	BLM	USFS
Bryophyte	Dicranaceae	<i>Dicranum howellii</i> -N Howell's dicranum moss				X	X		USFS/City
Bryophyte	Ditrichaceae	<i>Ceratodon purpureus</i> -N ceratodon moss	X	X	X	X	X	USFS/BLM	USFS/City

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Bryophyte	Grimmiaceae	<i>Grimmia anodon</i> -N grimmia dry rock moss		X				USFS	
Bryophyte	Grimmiaceae	<i>Grimmia longirostris</i> -N grimmia dry rock moss		X				USFS	
Bryophyte	Grimmiaceae	<i>Grimmia leibergii</i> -N grimmia dry rock moss		X				USFS	
Bryophyte	Grimmiaceae	<i>Grimmia sp</i> -N grimmia dry rock moss		X		X	X	USFS	USFS/City
Bryophyte	Grimmiaceae	<i>Grimmia trichophylla</i> -N grimmia dry rock moss				X			City
Bryophyte	Grimmiaceae	<i>Racomitrium affine</i> -N racomitrium moss	X	X	X			USFS/BLM	
Bryophyte	Grimmiaceae	<i>Racomitrium elongatum</i> -N elongate racomitrium moss					X		USFS/City
Bryophyte	Grimmiaceae	<i>Racomitrium heterostichum</i> -N racomitrium moss	X	X				USFS	
Bryophyte	Grimmiaceae	<i>Racomitrium varium</i> -N racomitrium moss	X	X	X	X	X	USFS/BLM	USFS/City
Bryophyte	Hylocomiaceae	<i>Rhytidiadelphus triquetrus</i> -N rough goose neck moss				X	X		USFS/City
Bryophyte	Hypnaceae	<i>Hypnum circinale</i> -N hypnum moss			X	X	X	BLM	USFS/City
Bryophyte	Hypnaceae	<i>Pseudotaxiphyllum elegans</i> -N elegant pseudotaxiphyllum moss				X	X		USFS/City
Bryophyte	Jubulaceae	<i>Frullania sp</i> -N					X		USFS
Bryophyte	Leskeaceae	<i>Claopodium bolanderi</i> -N Bolander's claopodium moss			X	X	X	BLM	USFS/City
Bryophyte	Leucodontaceae	<i>Antitrichia curtispindula</i> -N antitrichia moss				X	X		USFS/City
Bryophyte	Mniaceae	<i>Mnium spinulosum</i> -N largetooth calcareous moss				X			City
Bryophyte	Mniaceae	<i>Plagiomnium insigne</i> -N plagiomnium moss				X			City
Bryophyte	Mniaceae	<i>Rhizomnium nudum</i> -N naked rhizomnium moss				X			City
Bryophyte	Neckeraceae	<i>Metaneckera menziesii</i> -N Menzies' metaneckera moss				X	X		USFS/City
Bryophyte	Neckeraceae	<i>Neckera douglasii</i> -N Douglas' neckera moss				X	X		USFS/City
Bryophyte	Orthotrichaceae	<i>Orthotrichum speciosum</i> -N lanceolateleaf rock moss				X			City

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Bryophyte	Orthotrichaceae	<i>Ulota megalospora</i> -N largespore ulota moss			X		X	BLM	USFS
Bryophyte	Polytrichaceae	<i>Polytrichastrum alpinum</i> -N alpine polytrichastrum moss				X			City
Bryophyte	Polytrichaceae	<i>Polytrichum juniperinum</i> -N juniper polytrichum moss				X	X		USFS/City
Bryophyte	Polytrichaceae	<i>Polytrichum piliferum</i> -N polytrichum moss		X				USFS	
Bryophyte	Porellaceae	<i>Porella navicularis</i> -N porella liverwort			X	X	X	BLM	USFS/City
Bryophyte	Pottiaceae	<i>Tortula</i> sp-N tortula moss	X	X				USFS	
Bryophyte	Pottiaceae	<i>Tortula papillosissima</i> -N tortula moss	X	X				USFS	
Bryophyte	Ptilidiaceae	<i>Ptilidium californicum</i> -N ptilidium liverwort			X			BLM	
Bryophyte	Radulaceae	<i>Radula bolanderi</i> -N radula liverwort			X		X	BLM	USFS
Bryophyte	Scapaniaceae	<i>Douinia ovata</i> -N				X	X		USFS/City
Bryophyte	Scapaniaceae	<i>Scapania bolanderi</i> -N scapania liverwort			X	X	X	BLM	USFS/City
Fungus	Agaricaceae	<i>Cyathus stercoreus</i> -N					X		USFS/City
Fungus	Amanitaceae	<i>Amanita constricta</i> -N				X			City
Fungus	Amanitaceae	<i>Amanita gemmate</i> -N				X			City
Fungus	Amanitaceae	<i>Amanita silvicola</i> -N					X		USFS/City
Fungus	Boletaceae	<i>Boletus chrysenteron</i> -N					X		USFS/City
Fungus	Exidiaceae	<i>Phlogiotis helvelloides</i> -N					X		City
Fungus	Fomitopsidaceae	<i>Fomitopsis ochracea</i> -N				X			City
Fungus	Fomitopsidaceae	<i>Fomitopsis pinicola</i> -N				X			City
Fungus	Fomitopsidaceae	<i>Ischnoderma benzoinum</i> -N				X			City
Fungus	Hygrophoraceae	<i>Hygrocybe acutoconica</i> -N				X			City
Fungus	Hygrophoraceae	<i>Hygrocybe punicea</i> -N					X		USFS
Fungus	Inocybaceae	<i>Crepidotus applanatus</i> -N				X			City
Fungus	Inocybaceae	<i>Inocybe pyriodora</i> -N					X		USFS
Fungus	Mycenaceae	<i>Mycena flavoalba</i> -N				X			City
Fungus	Pluteaceae	<i>Pluteus cervinus</i> -N				X			City
Fungus	Polyporaceae	<i>Cryptoporus volvatus</i> -N				X			City

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Fungus	Polyporaceae	<i>Poria incrassate-N</i>					X		City
Fungus	Russulaceae	<i>Lactarius rubrilacteus-N</i>					X		USFS
Fungus	Russulaceae	<i>Russula cremoricolor-N</i>					X		USFS
Fungus	Russulaceae	<i>Russula placita-N</i>					X		USFS
Fungus	Russulaceae	<i>Russula rosea-N</i>					X		USFS
Fungus	Russulaceae	<i>Russula xerampelina-N</i>					X		USFS
Fungus	Strophariaceae	<i>Hebeloma crustuliniforme-N</i>				X	X		USFS/City
Fungus	Strophariaceae	<i>Naematoloma capnoides-N</i>				X			City
Fungus	Tremellaceae	<i>Tremella mesenterica-N</i>					X		City
Fungus	Tricholomataceae	<i>Pleurotus porrigens-N</i>					X		USFS
Lichen	Alectoriaceae	<i>Alectoria sarmentos-N</i> witch's hair lichen			X	X		BLM	City
Lichen	Bacidiaceae	<i>Japewia tornoensis-N</i> japewia lichen			X			BLM	
Lichen	Bacidiaceae	<i>Tephromela sp-N</i> tephromela lichen				X			City
Lichen	Baeomycetaceae	<i>Baeomyces rufus-N</i> cap lichen					X		USFS/City
Lichen	Cladoniaceae	<i>Cladonia coniocraea-N</i> cup lichen	X		X			USFS/BLM	
Lichen	Cladoniaceae	<i>Cladonia fimbriata-N</i> cup lichen	X	X				USFS	
Lichen	Cladoniaceae	<i>Cladonia macilenta var. bacillaris-N</i> cup lichen	X	X				USFS	
Lichen	Cladoniaceae	<i>Cladonia pyxidata-N</i> cup lichen	X	X		X	X	USFS	USFS/City
Lichen	Cladoniaceae	<i>Cladonia sp-N</i> cup lichen	X	X	X	X	X	USFS/BLM	USFS/City
Lichen	Cladoniaceae	<i>Cladonia transcendens-N</i> transcend cup lichen			X	X		BLM	City
Lichen	Lecanoraceae	<i>Lecanora symmicta-N</i> rim lichen			X	X		BLM	City
Lichen	Lecanoraceae	<i>Pyrrhospora cinnabarina-N</i> crust lichen			X			BLM	
Lichen	Lecideaceae	<i>Bryobilimbia sp-N</i>				X			City
Lichen	Lecideaceae	<i>Lecidea sp-N</i> crust lichen		X		X	X	USFS	City
Lichen	Lobariaceae	<i>Lobaria oregana-N</i> Oregon lung lichen					X		USFS

Life form	Family	Scientific and Common name (N-native; NN-non-native)	MP Fenced Area	MP Access Road	MP Tree Removal	CPI Site	WPS Access Road	Marys Peak Land Ownership	WPS Land Ownership
Lichen	Lobariaceae	<i>Lobaria pulmonaria</i> -N lung lichen					X		USFS
Lichen	Lobariaceae	<i>Pseudocyphellaria crocata</i> -N					X		USFS
Lichen	Lobariaceae	<i>Pseudocyphellaria anomala</i> -N					X		USFS
Lichen	Lobariaceae	<i>Sticta fuliginosa</i> -N spotted felt lichen					X		USFS
Lichen	Mycoblastaceae	<i>Mycoblastus sanguinarius</i> -N Blood lichen				X			City
Lichen	Nephromataceae	<i>Nephroma parile</i> -N kidney lichen					X		USFS
Lichen	Pannariaceae	<i>Fuscopannaria pacifica</i> -N				X	X		USFS/City
Lichen	Parmeliaceae	<i>Bryoria capillaris</i> -N horsehair lichen				X			City
Lichen	Parmeliaceae	<i>Bryoria pseudofuscescens</i> -N horsehair lichen			X	X		BLM	City
Lichen	Parmeliaceae	<i>Hypogymnia enteromorpha</i> -N tube lichen			X	X	X	BLM	USFS/City
Lichen	Parmeliaceae	<i>Hypogymnia inactive</i> -N inactive tube lichen			X	X	X	BLM	USFS/City
Lichen	Parmeliaceae	<i>Hypogymnia tubulosa</i> -N tube lichen			X			BLM	
Lichen	Bacidiaceae	<i>Japewia tornoensis</i> -N japewia lichen				X			City
Lichen	Parmeliaceae	<i>Menegazzia terebrata</i> -N honeycombed lichen					X		USFS/City
Lichen	Parmeliaceae	<i>Parmeliopsis hyperopta</i> -N bran lichen			X			BLM	
Lichen	Parmeliaceae	<i>Platismatia glauca</i> -N ragged lichen			X		X	BLM	USFS
Lichen	Parmeliaceae	<i>Platismatia herrei</i> -N Herre's ragged lichen			X	X	X	BLM	USFS/City
Lichen	Parmeliaceae	<i>Platismatia lacunose</i> -N ragged lichen				X	X		USFS/City
Lichen	Parmeliaceae	<i>Platismatia stenophylla</i> -N ragged lichen			X			BLM	
Lichen	Parmeliaceae	<i>Tuckermannopsis chlorophylla</i> -N greenleaf tuckermannopsis			X			BLM	
Lichen	Parmeliaceae	<i>Tuckermannopsis orbata</i> -N Tuckermannopsis lichen			X	X	X	BLM	USFS/City
Lichen	Parmeliaceae	<i>Usnea filipendula</i> -N beard lichen			X	X	X	BLM	USFS/City

Life form	Family	Scientific and Common name (N-native; NN-non-native)	MP Fenced Area	MP Access Road	MP Tree Removal	CPI Site	WPS Access Road	Marys Peak Land Ownership	WPS Land Ownership
Lichen	Parmeliaceae	<i>Usnea</i> sp-N beard lichen				X	X		USFS/City
Lichen	Pertusariaceae	<i>Loxosporopsis corallifera</i> -N				X	X		USFS/City
Lichen	Pertusariaceae	<i>Ochrolechia laevigata</i> -N crabseye lichen			X	X	X	BLM	USFS/City
Lichen	Pertusariaceae	<i>Ochrolechia oregonensis</i> -N Oregon crabseye lichen			X	X	X	BLM	USFS/City
Lichen	Parmeliaceae	<i>Parmelia hygrophila</i> -N shield lichen				X	X		USFS/City
Lichen	Parmeliaceae	<i>Parmelia sulcata</i> -N shield lichen				X	X		USFS/City
Lichen	Peltigeraceae	<i>Peltigera degenii</i> -N Degen's felt lichen					X		USFS
Lichen	Peltigeraceae	<i>Peltigera praetextata</i> -N felt lichen					X		USFS
Lichen	Pertusariaceae	<i>Pertusaria ophthalmiza</i> -N pore lichen				X	X		City
Lichen	Pertusariaceae	<i>Pertusaria</i> sp-N. crust lichen			X	X	X	BLM	USFS/City
Lichen	Pertusariaceae	<i>Pertusaria subambigens</i> -N pore lichen			X	X	X	BLM	City
Lichen	Pertusariaceae	<i>Placopsis gelida</i> -N bullseye lichen		X		X	X	USFS	USFS/City
Lichen	Physciaceae	<i>Diplotomma penichrum</i> -N diplotomma lichen			X			BLM	
Lichen	Porpidiaceae	<i>Porpidia</i> sp-N porpidia lichen				X			City
Lichen	Sphaerophoraceae	<i>Sphaerophorus globosus</i> var. <i>gracilis</i> -N globe ball lichen			X	X	X	BLM	USFS/City
Lichen	Stereocaulaceae	<i>Pilophorus acicularis</i> -N nail lichen				X	X		City
Lichen	Stereocaulaceae	<i>Pilophorus clavatus</i> -N nail lichen				X			City
Lichen	Stereocaulaceae	<i>Stereocaulon condensatum</i> -N condensed snow lichen	X	X				USFS	
Lichen	Teloschistaceae	<i>Caloplaca holocarpa</i> -N orange lichen				X			City
Lichen	Teloschistaceae	<i>Caloplaca</i> sp-N orange lichen		X				USFS	
Lichen	Umbilicariaceae	<i>Umbilicaria hyperborean</i> -N navel lichen		X				USFS	

Appendix C. Special-status Wildlife Species Survey List

The following wildlife special-status species were considered as having the potential to occur at the Marys Peak and West Point Spur study areas and were the focus of wildlife surveys.

The following special-status rankings are used in the following table:

- **Federal ESA (USFWS) designations:**
 - F-E = Federally-listed Endangered Species
 - F-T = Federally-listed Threatened Species
 - F-C = Federal Candidate
 - F-SOC = U.S. Fish and Wildlife Service Species of Concern
 - F-BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern
- **Federal Special-status (USFS[SNF] and/or BLM) designations:**
 - S&M = Survey and Manage Species
 - FS-MIS = U.S. Forest Service Management Indicator Species
 - FS-SEN = U.S. Forest Service Sensitive Species
 - FS-STR = U.S. Forest Service Strategic Species
 - BLM-SEN = Bureau of Land Management Sensitive Species
 - BLM-STR = Bureau of Land Management Strategic Species
- **State: Oregon ESA:**
 - OR-T = Oregon State-listed Threatened Species
 - OR-SC = Oregon State Sensitive-Critical Species
 - OR-SV = Oregon State Sensitive-Vulnerable Species
- **Oregon Biodiversity Information Center (ORBIC)**
 - List 1 = threatened or endangered throughout range
 - List 2 = threatened or endangered in Oregon but secure elsewhere
 - List 3 = review species, taxa for which more information is needed
 - List 4 = watch, taxa of conservation concern but are not currently threatened or endangered
- **Survey and Manage (S&M) Categories**
 - Category A = Rare, Pre-disturbance surveys are practical
 - Category D = Uncommon, Pre-disturbance surveys are not practical

Table C-1. Special-status Wildlife Species Survey List

Common Name Scientific Name	Status				
	Federal			State	
	USFWS	USFS (SNF)	BLM	Oregon	ORBIC
MAMMALS					
Red tree vole (North Oregon Coast DPS) <i>Arborimus longicaudus</i>	F-C	FS-SEN, S&M (Cat. A)	BLM-SEN	OR-SV	List 4
Roosevelt elk <i>Cervus elaphus roosevelti</i>		FS-MIS			
BIRDS					
Great blue heron <i>Ardea herodias</i>	F-BCC	FS-MIS			
Marbled murrelet <i>Brachyramphus marmoratus</i>	F-T			OR-T	List 2
Aleutian cackling goose <i>Banta Canadensis leucopenia</i>		FS-MIS			List 2
Northern flicker <i>Colaptes auratus</i>		FS-MIS			
Olive-sided flycatcher <i>Contopus cooperi</i>	F-SOC, F-BCC			OR-SV	List 4
Pileated woodpecker <i>Dryocopus pileatus</i>		FS-MIS			List 4
Western screech-owl <i>Megascops kennicottii kennicottii</i>	F-BCC				
Downy woodpecker <i>Picoides pubescens</i>		FS-MIS			
Hairy woodpecker <i>Picoides villosus</i>		FS-MIS			
Purple martin <i>Progne subis</i>	F-SOC	FS-SEN	BLM-SEN	OR-SC	List 2
Rufous hummingbird <i>Selasphorus rufus</i>	F-BCC				
Red-breasted nuthatch <i>Sitta canadensis</i>		FS-MIS			
Red-breasted sapsucker <i>Sphyrapicus ruber</i>		FS-MIS			
Great gray owl <i>Strix nebulosa</i>		S&M (Cat. A)			List 3
Northern spotted owl <i>Strix occidentalis caurina</i>	F-T	FS-MIS		OR-T	List 1
INVERTEBRATES					
Suckley cuckoo bumble bee <i>Bombus suckleyi</i>			BLM-SEN		1
Siskiyou short-horned grasshopper <i>Chloealtis aspasma</i>	SOC		BLM-SEN		1
Keeled jumping-slug <i>Hemphillia burringtoni</i>		S&M (Cat. D)			List 3

Appendix D. Wildlife Species Observed during Wildlife Surveys

The following wildlife species were found in the Marys Peak and/or West Point Spur study areas during field surveys in 2018 and 2019, and observed by BPA staff and identified by an experienced ornithologist during a site visit in November 2019. Species were observed on land owned by the U.S. Forest Service, the Bureau of Land Management, the City of Corvallis, and/or private lands.

No wildlife observations were made while surveying the Albany Substation study area. A dark-eyed junco (bird) and a black-tailed deer were observed outside of the Prospect Hill study area, neither of which have a special status designation.

Table D-1. General and Special-status Wildlife Species Observed during Surveys

Common Name <i>Scientific Name</i>	Status	Observed at Marys Peak	Observed at West Point Spur
Birds			
Ruffed grouse <i>Bonasa umbellus</i>		X	X
Wilson's warbler <i>Cardellina pusilla</i>		X	X
Turkey vulture <i>Cathartes aura</i>		X	X
Song sparrow <i>Catharus ustulatus</i>		X	X
Swainson's thrush <i>Catharus ustulatus</i>		X	X
Brown creeper <i>Certhia americana</i>		X	X
Northern harrier <i>Circus hudsonius</i>		X	X
Evening grosbeak <i>Coccothraustes vespertinus</i>		X	
Northern Flicker <i>Colaptes auratus</i>	FS-MIS	X	X
Olive-sided flycatcher <i>Contopus cooperi</i>			X
American crow <i>Corvus brachyrhynchos</i>		X	X
Steller's jay <i>Cyanocitta stelleri</i>		X	X
Pileated woodpecker <i>Dryocopus pileatus</i>	FS-MIS, ORBIC List 4	X	X
Pacific-slope flycatcher <i>Empidonax difficilis</i>		X	X
Dark-eyed junco <i>Junco hyemalis</i>		X	X
Song sparrow <i>Melospiza melodia</i>		X	X
Band-tailed pigeon <i>Patagioenas fasciata</i>		X	X
Gray jay <i>Perisoreus canadensis</i>		X	X

Common Name <i>Scientific Name</i>	Status	Observed at Marys Peak	Observed at West Point Spur
Black-headed grosbeak <i>Pheucticus melanocephalus</i>		X	X
Hairy woodpecker <i>Picoides villosus</i>	FS-MIS	X	
Snow bunting <i>Plectrophenax nivalis</i>		X	
Black-capped chickadee <i>Poecile atricapillus</i>		X	X
Chestnut-backed chickadee <i>Poecile rufescens</i>		X	X
Hermit warbler <i>Setophaga occidentalis</i>		X	X
Red-breasted nuthatch <i>Sitta canadensis</i>	FS-MIS	X	X
Great gray owl <i>Strix nebulosa</i>	S&M (Cat. A), ORBIC List 3		X
Barred owl <i>Strix varia</i>			X
Pacific wren <i>Troglodytes pacificus</i>		X	X
American robin <i>Turdus migratorius</i>		X	X
Mourning dove <i>Zenaida macroura</i>		X	X
Mammals			
Black-tailed deer <i>Odocoileus hemionus</i>		X	X
Townsend's chipmunk <i>Tamias townsendii</i>		X	X
Douglas squirrel <i>Tamiasciurus douglasii</i>		X	X
Roosevelt elk (sign observed) <i>Cervus canadensis roosevelti</i>	FS-MIS	X	X

**Appendix E: Scenic Resources Analysis Photographs
and Simulations**

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Key Viewing Area 1 – Existing vs. Alternative 2A



Marys Peak Road at Saddle Meadow Pullout

Existing Conditions



Marys Peak Road at Saddle Meadow Pullout

Alternative 2A Simulation

Key Viewing Area 1 – Existing vs. Alternative 3C



Marys Peak Road at Saddle Meadow Pullout

Existing Conditions



Marys Peak Road at Saddle Meadow Pullout

Alternative 3C Simulation

Key Viewing Area 3 – Existing vs. Alternative 2A and 3C



Parking Area at Marys Peak Road

Existing Conditions



Parking Area at Marys Peak Road

Alternative 2A and 3C Simulation

Key Viewing Area 3 – Existing vs. Alternative 4



Parking Area at Marys Peak Road

Existing Conditions



Parking Area at Marys Peak Road

Alternative 4 Simulation

Key Viewing Area 6 – Existing vs. Alternative 2A and 3C



Summit Trail (Lower Portion)

Existing Conditions



Summit Trail (Lower Portion)

Alternative 2A and 3C Simulation

Key Viewing Area 7 – Existing vs. Alternative 2A and 3C



Marys Peak Access Road (view directed West)

Existing Conditions



Marys Peak Access Road (view directed West)

Alternative 2A and 3C Simulation

Key Viewing Area 9 – Existing vs. Alternative 2A



Marys Peak Summit (View from Picnic Table)

Existing Conditions



Marys Peak Summit (View from Picnic Table)

Alternative 2A Simulation

Key Viewing Area 9 – Existing vs. Alternative 3C



Marys Peak Summit (View from Picnic Table)

Existing Conditions



Marys Peak Summit (View from Picnic Table)

Alternative 3C Simulation

Key Viewing Area 9 – Existing vs. Alternative 4



Marys Peak Summit (View from Picnic Table)

Existing Conditions



Marys Peak Summit (View from Picnic Table)

Alternative 4 Simulation

Key Viewing Area 12 – Existing vs. Alternative 2A



Summit Trail (Upper Portion)

Marys Peak Summit Trail and Meadowedge Trail Intersection

Existing Conditions



Summit Trail (Upper Portion)

Marys Peak Summit Trail and Meadowedge Trail Intersection

Alternative 2A Simulation

Key Viewing Area 12 – Existing vs. Alternative 3C



Summit Trail (Upper Portion)
Marys Peak Summit Trail and Meadowedge Trail Intersection

Existing Conditions



Summit Trail (Upper Portion)
Marys Peak Summit Trail and Meadowedge Trail Intersection

Alternative 3C Simulation

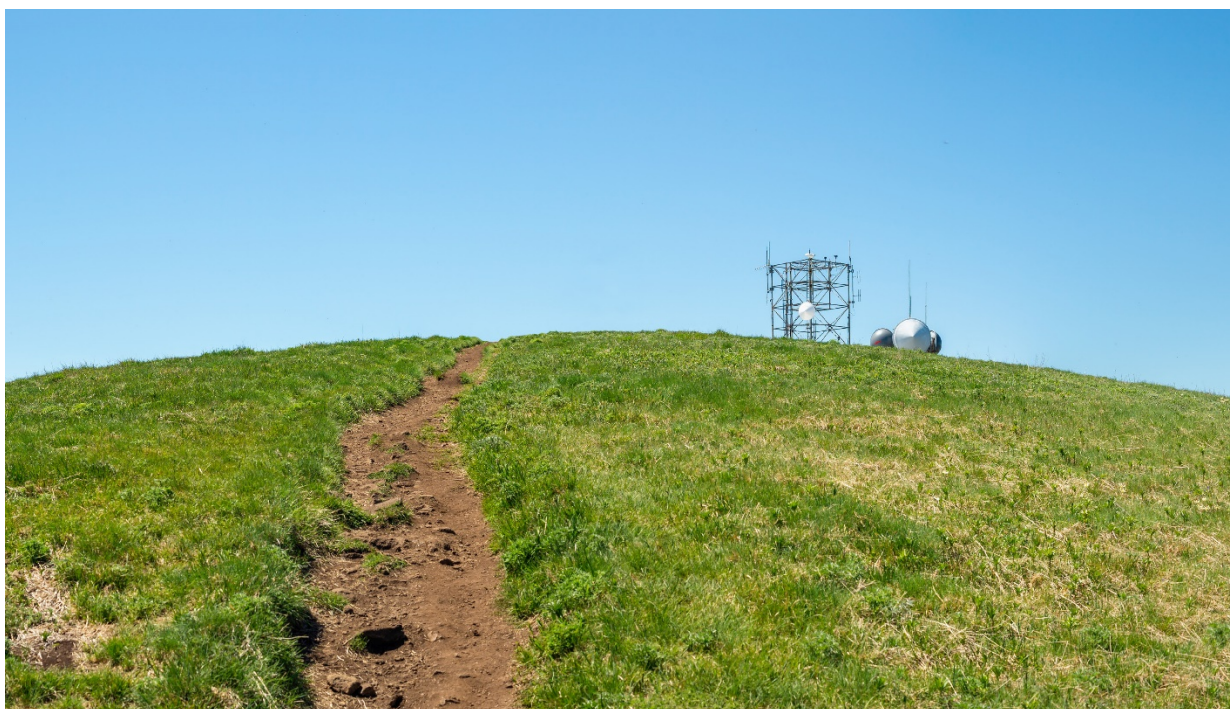
Key Viewing Area 12 – Existing vs. Alternative 4



Summit Trail (Upper Portion)

Marys Peak Summit Trail and Meadowedge Trail Intersection

Existing Conditions



Summit Trail (Upper Portion)

Marys Peak Summit Trail and Meadowedge Trail Intersection

Alternative 4 Simulation

Key Viewing Area 13 – Existing vs. Alternative 4



Meadowedge Trail (Upper Portion)

Existing Conditions



Meadowedge Trail (Upper Portion)

Alternative 4 Simulation

Key Viewing Area 14 – Existing vs. Alternative 2A



Orchard Lane

Existing Conditions



Orchard Lane

Alternative 2A Simulation

Key Viewing Area 14 – Existing vs. Alternative 3C



Orchard Lane

Existing Conditions



Orchard Lane

Alternative 3C Simulation

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Appendix F: Public Comments and Agency Responses to the Draft Environmental Assessment

This appendix to the final EA presents comments received on the draft EA and the responses of BPA, USFS, and BLM to these comments. Oral and written comments were provided during a virtual public meeting held on October 28, 2020. In addition to the comments provided during the public meeting, 37 comments were also submitted in writing through letters, comment forms, and email.

Each comment submittal was given an identifying number that corresponds to the order in which the submittal was received and logged in the official BPA comment file. Comment 01 and Comment 26 did not include content applicable to the Project. For example, Comment 01 was a general inquiry of BPA with no relation to this Project. Comment 07 is a compilation of the comments received during the October 2020 public meeting. The following comments were received:

- (There is no Comment 01)
- Comment 02: Workman
- Comment 03: Rapp
- Comment 04: Day/Corvallis Gazette Times
- Comment 05: Porch
- Comment 06: Rose
- Comment 07: Public meeting comments
- Comment 08: Tokuda
- Comment 09: Gile/Great Old Broads for the Wilderness
- Comment 10: Pitera
- Comment 11: Rossman
- Comment 12: Barron
- Comment 13: Yang
- Comment 14: Peterson
- Comment 15: Hackleman
- Comment 16: Roth
- Comment 17: Arrington/Marys Peak Group, Sierra Club
- Comment 18: Hays
- Comment 19: Pace
- Comment 20: Eckert/Marys Peak Alliance
- Comment 21: Berman
- Comment 22: Symthe
- Comment 23: Abels
- Comment 24: Stuart/Great Old Broads
- Comment 25: Fairchild/Audubon Society of Corvallis
- (There is no Comment 26)
- Comment 27: Ouellette
- Comment 28: Vander Heide
- Comment 29: Kearl
- Comment 30: Heiken/Oregon Wild
- Comment 31: Foster
- Comment 32: McEvoy/Corvallis Chapter – Native Plant Society of Oregon
- Comment 33: Wulff
- Comment 34: Smith
- Comment 35: Snelling
- Comment 36: Cafazzo
- Comment 37: Blanchard
- Comment 38: Aolenback
- Comment 39: Rudolph/Thompson Timber Company
- Comment 40: Thompson

Each comment submittal is reproduced in its entirety in this appendix. When a comment submittal includes comments on multiple topics, each topic is assigned a sequential two-digit number after the two-digit comment number (e.g. 02-01, 02-02, 02-03, etc.). A response is provided for each comment in [blue font](#).

BPA responded to the comments that were clearly directed to BPA and Project-related. The USFS and the BLM responded to comments that were clearly directed to them and were sometimes outside of the scope of this Project. When USFS or BLM provided responses to comments, they are introduced in the comment response by the phrase, “The USFS/BLM provided the following response.” Cooperating agencies reviewed all comments and responses prior to completing this final EA.

As a result of reviewing and responding to the comments received, some changes were made to the text of the EA. **Bolded, italicized and orange colored font** is used for new or added text and ~~striketrough font~~ is used for deleted text in those sections of the EA that were updated. Because this appendix is entirely new, bolded, italicized and orange colored font text was not used.

(There is no Comment 01)

Comment 02: Workman

I appreciate the time and energy taken to develop these various alternatives. I have a strong preference for Alternative 4, which would result in removing the current BPA building, antenna post and antenna form the top of Marys Peak and reduce the size of the fenced area at the remaining USFS site. I recognize the importance of the communication facilities, but I prefer to not increase the footprint or height of the towers on Marys Peak. Not only does this improve the experience for those at the peak, but all of Philomath that looks up at the peak.

Comment 02-01: Workman

I appreciate the time and energy taken to develop these various alternatives.

Response to Comment 02-01 – Comment acknowledged.

Comment 02-02: Workman

I have a strong preference for Alternative 4, which would result in removing the current BPA building, antenna post and antenna form the top of Marys Peak and reduce the size of the fenced area at the remaining USFS site.

Response to Comment 02-02 – The preference of the commenter is noted.

Comment 02-03: Workman

I recognize the importance of the communication facilities, but I prefer to not increase the footprint or height of the towers on Marys Peak.

Response to Comment 02-03 – Comment acknowledged.

Comment 02-04: Workman

Not only does this [Alternative 4] improve the experience for those at the peak, but all of Philomath that looks up at the peak.

Response to Comment 02-04 – The EA describes how the post-construction visual experience for those at the peak (i.e., Marys Peak Summit Picnic Table, KVA 9) would be improved under Alternative 4 due to the removal of BPA communications equipment and some segments of chain link fence from the summit. However, the views from the City of Philomath (KVA 4, Photograph 3-25), Wren Hill (KVA 5, Photograph 3-26), Highway 20 (KVA 10, Photograph 3-27), and the Community of Harlan (KVA 11, Photograph 3-28) would not be changed for any of the alternatives, including Alternative 4, because the communications structures at Marys Peak and West Point Spur are not clearly visible from those distances.

Comment 03: Rapp

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

MARYS PEAK BPA COMMUNICATIONS SITE PROJECT

"I'd like to tell you..."

Do you have comments on any of the proposed alternatives?
I am not familiar enough with Marys Peak to comment on what may be done there. I do live near the Albany Substation.

Do you have any comments on the description of the resources or analysis of potential impacts covered in the draft EA?
There is a new housing development just north of the Albany Substation - off of St. George Ave., 13th Ave, and Crittenden Street. Several new homes are built and occupied with more under way. The 6' disk would be facing them. Have they or the developer been notified?

Do you have ideas on other ways to lessen potential impacts to resources?
No, but I doubt the City of Corvallis will be agreeable to losing some of their trees under one of the proposals.

I have these other comments:
Personally I think the Albany substation in appearance is ugly, an eyesore. I would be happy if the whole thing were relocated somewhere else. That isn't likely but perhaps something could be done to make its appearance more aesthetically pleasing.
How about a contest for school students to do this. They may come up with some good ideas.

Name*: James Rapp
Address: [Redacted]
City: Albany State: OR Zip: [Redacted]


* If you provide your name, it will be posted on the project website with your comment; addresses will not be posted.

How to comment:

Mail: Bonneville Power Administration Public Affairs - DKE-7 P.O. Box 14428 Portland, OR 97291-4428	Toll-free: 800-622-4519 FAX: 503-230-4019 Online: www.bpa.gov/comment
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Please mention "Marys Peak BPA Communications Site Project" in your correspondence.
For Project information visit: www.bpa.gov/goto/maryspeak

The comment period ends November 12, 2020



Comment 03-01: Rapp

I am not familiar enough with Marys Peak to comment on what may be done there. I do live near the Albany Substation.

Response to Comment 03-01 – Comment acknowledged.

Comment 03-02: Rapp

There is a new housing development just north of the Albany Substation – off of St. George Ave., 13th Ave., and Crittenden Street. Several new homes are built and occupied with more underway. The 6’ disk would be facing them. Have they or the developer been notified?

Response to Comment 03-02 – Under Alternative 2A or Alternative 3C, the direction of the microwave dish at the BPA Albany Substation would be 68.83 degrees true azimuth (pointing southwest towards the Marys Peak summit). The new housing development is located to the north of the BPA Albany Substation, and is not in the microwave beam path between the Albany Substation and Marys Peak. Alternative 4 does not include the BPA Albany Substation because the beam path would be directed towards the BPA Prospect Hill Communications Site from West Point Spur (See Map 2-1 for visual reference).

The landowner mail list for the draft EA was created in April 2020; landowners within a 0.25-mile radius of the BPA Albany Substation were included in the mail list. A portion of the new housing development’s footprint is within 0.25 mile of the substation; landowners within that radius were sent the public letter (mailed on October 13, 2020) notifying them of the public comment period for the draft EA. The landowner mail list will be updated prior to the distribution of the final EA so that it will include any changes in land ownership since the last landowner mail list was created.

Comment 03-03: Rapp

No, but I doubt the City of Corvallis will be agreeable to losing some of their trees under one of the proposals.

Response to Comment 03-03 – BPA has been coordinating with the Franchise Utility/Rights-of-Way Specialist for the City of Corvallis since 2017 in support of the Project’s environmental review process. The City of Corvallis is aware of the proposed tree cutting under Alternative 4 that would occur on City of Corvallis property. BPA requested input from the Franchise Utility/Rights-of-Way Specialist in June 2019 to see if the City had a strong preference for topping the trees or felling them in place. In response, they stated, “Topping some of the trees for habitat would be fine.” They also stated that a portion of the trees (previously slated to be cut and felled in place) could be left as wildlife snag habitat instead, when feasible. To date, the City of Corvallis has not expressed concern over proposed Project activities under Alternative 4, including tree cutting or removal.

Comment 03-04: Rapp

Personally I think the Albany Substation in appearance is ugly, an eyesore. I would be happy if the whole thing were relocated somewhere else. That isn’t likely but perhaps some things could be done to make its appearance more aesthetic. How about a contest for school students to do this. They may come up with some good ideas.

Response to Comment 03-04 – The BPA Albany Substation was initially developed in 1942 as a temporary substation, and largely rebuilt as a permanent facility in 1954. At that time, there was very little nearby residential development. Currently, nearby residents or park users have views of the BPA Albany Substation. These viewers could experience low temporary impacts to scenic resources for a few days during construction, and moderate permanent impacts due to the addition of a new microwave dish on the existing steel-lattice structure (see EA Section 2.12).

Near the substation control house (across the street from the entrance to the Chase Orchards residential subdivision), trees and shrubs partially block the view of the substation from Queen Avenue (see Figure F-1 below). However, about 500 linear feet of fenceline that runs along the street southwest of the control house is relatively bare and the intervening strip of land contains only sparse grasses and weedy species (see Figure F-2 below). BPA considered planting vegetation along this chain link fence to mitigate potential scenic resource impacts that could result from Alternative 2A or Alternative 3C. However, because the grassy strip is narrow, quite dry, and close to a busy road, it was determined that any vegetation plantings in this area would likely not survive and it would be better to leave it as a grassy area.



Figure F-1 (left): Mature trees and shrubby vegetation partially block the view of the Albany Substation, as seen from Orchard Lane SW at the entrance of the Chase Orchards subdivision (looking northwest).

Figure F-2 (below): Looking north at the eastern chain link fence of BPA's Albany Substation; Queen Avenue in the forefront of the picture. Under Alternative 2A or 3C, new communications equipment would be installed on the steel-lattice structure in the red rectangle (same structure as pictured in Figure F-1).



Comment 04: Day/Corvallis Gazette-Times

What is the projected cost of the project and what will be the source of the funding?

Response to Comment 04 – The estimated cost for each action alternative is summarized in Table 2-6 of this EA; they range from about \$700,000 for Alternative 4, the least expensive alternative, to \$1,000,000 for Alternative 3C, the most expensive alternative. BPA implemented a Mobile Radio Essential Data Infrastructure program to upgrade the entire VHF system throughout the BPA service territory, which includes over 120 communications sites. Marys Peak is one of the communications sites in that program where improvements would be funded by BPA’s Capital Investment Program.

Comment 05: Porch

I am writing to support Option 4c [Alternative 4] for the following reasons: There will be no need for new construction which will raise the cost. If equipment is consolidated at the West point the cost will be less. Also, maintenance costs will be lower. This option will improve BPA employee safety. This option will improve visual quality and recreational resources. This option will allow restoration of sensitive land at the top peak.

Comment 05-01: Porch

I am writing to support Option 4c [Alternative 4] for the following reasons: There will be no need for new construction, which will raise the cost. If equipment is consolidated at the West Point the cost will be less. Also, maintenance costs will be lower.

Response to Comment 05-01 – Alternative 4 would have the lowest estimated construction cost of the three action alternatives, as summarized in Table 2-5 of this EA. Maintenance costs would likely be comparable for all action alternatives.

Comment 05-02: Porch

This option [Alternative 4] will improve BPA employee safety.

Response to Comment 05-02 – BPA is committed to the safety of workers. There are two main components to BPA staff safety in relation to this Project. They include the safety of the BPA staff who maintain the communications site and the safety of BPA linemen working on the transmission system, discussed below.

Safety of BPA communications site maintenance staff: Currently, the main reason BPA staff need to access the Marys Peak summit during the winter months is for emergency maintenance. The microwave dish mounted on the unstable wood pole sometimes shifts out of alignment due to high winds. Emergency maintenance during the winter months should not be needed as frequently, if at all, under all action alternatives because the new microwave dish and equipment would be mounted on a stable steel-lattice structure (as shown in Figure 2-1 for Alternative 2A or Alternative 3C, and Photograph 2-14 for Alternative 4).

West Point Spur is about 500 feet lower in elevation than the Marys Peak summit. About half of the unpaved access road (NF-112) leading to the CPI communications site at West Point Spur is located in forested habitat. The mature trees and vegetation lining the access road acts as a high-wind barrier. NF-112 is not as steep of a grade and receives less traffic than the unpaved access road leading to the Marys Peak summit. This allows for safer vehicle travel and equipment access during inclement weather conditions.

Therefore, it is likely that maintenance staff would encounter safer road conditions when accessing the CPI communications site under Alternative 4 during inclement winter weather conditions than accessing the Marys Peak summit. During the drier months of the year, BPA maintenance staff would likely encounter the same relatively safe access road conditions for all action alternatives.

Safety of BPA linemen working on the transmission system: The VHF communications system is necessary for real-time communications between BPA dispatchers and BPA linemen working on the transmission system. By relocating the BPA communications site to the CPI communications site at West Point Spur, there would be a reduction in the amount of area covered by the VHF communication system, compared to the VHF coverage area currently available with BPA's site at Marys Peak summit. Under Alternative 4, BPA linemen working on the transmission system may or may not be able to connect to other parts of the BPA Eugene Region's communications network in those reduced VHF coverage areas. Therefore, effective real-time communication between BPA staff may not be possible, which could present safety challenges and concerns, especially in emergency outage situations. Because the best communication signal would be available under Alternative 2A and Alternative 3C at the Marys Peak summit, compared to Alternative 4 at West Point Spur, the safest action alternatives for BPA linemen working on the transmission system would be Alternative 2A or Alternative 3C.

Comment 05-03: Porch

This option [Alternative 4] will improve visual quality and recreational resources.

Response to Comment 05-03 – As discussed in the EA, Alternative 4 would improve the visual quality at the Marys Peak summit with a moderate beneficial effect from removal of the existing BPA communications site and revegetation of the site (Table 2-6), as simulated in Appendix E, page E-9.

Alternative 4 would eventually increase the amount of area available for public access at the summit, after the BPA communications site is removed, the area is restored with native vegetation, and the chain link fence segments around the BPA communications site are removed. The USFS would need to approve the removal of the chain link fence segments prior to BPA funding the fence removal. The removal of the BPA Marys Peak communications site and 229 feet of fence segments would increase in the amount of land potentially available at the summit for public access (simulated in Appendix E, page E-9), resulting in a low beneficial effect on land use and recreation (Table 2-6). Additional information about removal of the chain link fence segments was added to Section 2.5.8 of this EA, along with a new map showing the chain link fence segments that BPA would fund to remove, after USFS approval.

USFS provided the following response – Under Alternative 4, after the BPA communications site is removed from the Marys Peak summit, the site is revegetated and the 229 feet of fence segments are removed, then recreation opportunities would be managed by the USFS to protect resources while still allowing people to enjoy the peak.

Comment 05-04: Porch

This option [Alternative 4] will allow restoration of sensitive land at the top peak.

Response to Comment 05-04 – Under Alternative 3C or Alternative 4, vegetation restoration would be conducted at the summit after removal of the existing BPA communications site. A Project Revegetation Plan is on the Project website (www.bpa.gov/goto/MarysPeak).

Comment 06: Rose

I advocate Alternative 4: Moving BPA facilities to the West Peak. This will decrease the visual effects of the [BPA] equipment on the main peak and decrease the impact on the special botanical area on the main peak. This move would make much practical sense as well, by making BPA equipment much more accessible during winter weather conditions.

Comment 06-01: Rose

I advocate Alternative 4: Moving BPA facilities to the West Peak.

Response to Comment 6-01 – Comment acknowledged.

Comment 06-02: Rose

This [Alternative 4] will decrease the visual effects of the [BPA] equipment on the main peak and decrease the impact on the special botanical area on the main peak.

Response to Comment 06-02 – As discussed in the EA, Alternative 4 would improve the visual quality at the Marys Peak summit with a moderate beneficial effect from removal of the existing BPA communications site and revegetation (Table 2-6) as simulated in Appendix E, page E-9.

Similarly, Alternative 4 would have a low beneficial effect on vegetation within the SBSIA compared to the No Action Alternative (Alternative 1). Alternative 4 would include two distinct construction work areas within the SBSIA. One work area within the SBSIA would be the existing Marys Peak BPA communications site at the Marys Peak summit (see Figure F-3, below). Removal of the BPA communications site would result in temporary low impacts to about 0.14 acre of vegetation within the fence at the summit. This area within the fence would be restored with native species after the removal of the BPA communications site. No access road improvements are proposed under Alternative 4 for the access road that leads to the Marys Peak summit.

Under Alternative 4, the second work area within the SBSIA would be the unpaved access road (NF-112) used to access the CPI communications site at West Point Spur. This unpaved access road (NF-112) is about 0.37 miles long. About half of its length is on SNF managed lands (about 1,000 feet) within the SBSIA, while the remainder of the unpaved access road (about 990 feet) is located on City of Corvallis land that is not within the SBSIA designated area (see Figure F-4, below).

Under Alternative 4, the access road work at West Point Spur within the SBSIA would include the installation of three new water bars and adding new spot rock in areas with pot holes. These access road improvements on NF-112 would temporarily impact about 1,500 square feet of vegetation and permanently impact about 300 square feet of vegetation (Section 2.5.2 of this EA) within the SBSIA.

While Alternative 4 would create two distinct areas of vegetation impact within the SBSIA (West Point Spur and Marys Peak summit), there would be a low beneficial effect on the vegetation at the Marys Peak summit within the SBSIA.

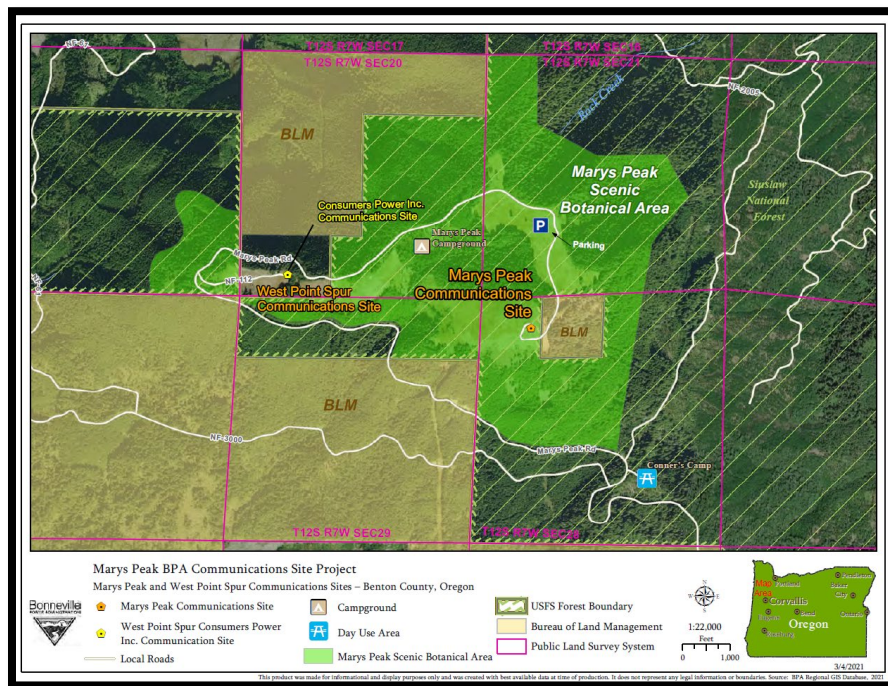


Figure F-3: The Marys Peak SBSIA (bright green) and surrounding land ownership at West Point Spur and Marys Peak (Figure F-3 is a portion of Map 1-1 from Chapter 1 of this EA).

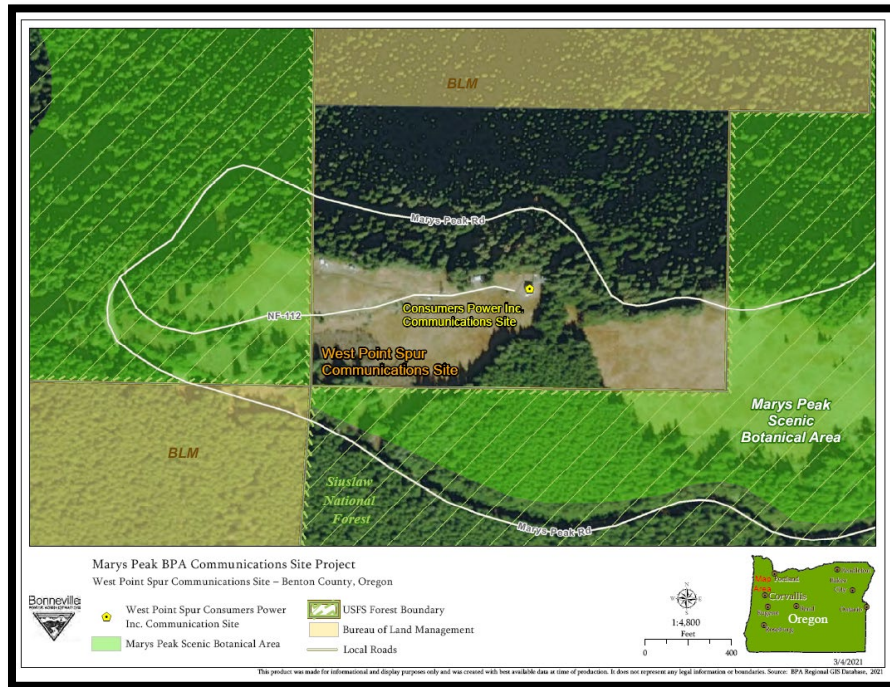


Figure F-4: About half of NF-112 is located on SNF managed property and is managed under the Marys Peak SBSIA (bright green), while the eastern half of NF-112 is on City of Corvallis property and is not within the SBSIA.

Comment 06-03: Rose

This move would make much practical sense as well, by making BPA equipment much more accessible during winter weather conditions.

Response to Comment 6-03 – See the portion of the response to Comment 05-02 that relates to the safety of BPA communications site maintenance staff.

Comment 07: Comments received during Public Meeting held October 28, 2020

Comment 07-01: Steed

All alternatives assume VHF radio communications. Have you considered dumping that technology and using SatComs? Voice sat phones are presumably expensive, but a text-based system like Garmin inReach might make sense.

Response to Comment 07-01 – Use of satellite phone for voice communications – BPA has experienced issues with loss of audio and dropped calls with this method in areas where the mobile radio system has good coverage. The communications protocol BPA dispatchers use to communicate with personnel working in the field requires real-time, three-part voice communication. This protocol ensures definitive confirmation from dispatch of a safe situation before a field crew member proceeds to work in a potentially dangerous high voltage situation. First, the sender speaks the message, then the receiver repeats the message, and then the sender responds. When repeaters are located at key locations such as Marys Peak, the VHF band can reach into valleys where BPA field crews drive and work, and it can penetrate vegetation to provide reliable communications in forested areas.

One type of satellite phone technology, Garmin InReach™, uses the Iridium satellite network with up/downlink frequencies 1616 to 1626.5 MHz in the L Band. BPA has done extensive testing of satellite phones using this network and experienced call drops in valleys and loss of signal under trees. This requires mobile radio system backup to provide adequate coverage. Satellite phones often have difficulties transmitting clear voice messages in thick vegetation, or in heavy rain or snow conditions, which would be problematic in a life-safety situation. For this reason, BPA uses satellite phones but not where the safety of its crews are at stake because they lack the reliability of the VHF system.

Use of satellite phones for texting messaging - BPA workers use mobile communications system while driving and outdoors in harsh weather conditions, unlike most mobile phone users. The BPA dispatch office does not use text messaging because it is illegal to text and drive, is impossible to text while wearing thick gloves, and texting is error prone.

For these reasons, BPA does not rely primarily on satellite phone technology. See Section 2.10.9 of the EA, where additional text was added to explain why satellite phones were considered but eliminated from further consideration in this EA.

Comment 07-02: McCain

Alternative 4 would add a dish and antennas. Future projects to reconnect the West Point meadow to the main Marys Peak meadow complex would expose facilities to views from the summit.

Response to Comment 07-02 – If a future meadow restoration project is proposed that includes removing encroaching trees from Marys Peak or West Point Spur, then the potential impacts to scenic resources would need to be analyzed at that time by the USFS, and is beyond the scope of this Marys Peak BPA Communications Site Project.

USFS provided the following response – While restoring meadows at Marys Peak is a broad goal of the USFS, there are no foreseeable projects at this time.

Comment 07-03: McCain

The additional equipment would impact visual quality if invading trees are removed.

Response to Comment 07-03 – BPA assumes the invading trees mentioned in this comment are the trees located west of Saddle Meadow and east of the CPI communications site at West Point Spur. The City of Corvallis stated they do not have any future plans to remove trees located between Saddle Meadow and the CPI communications site. Trees were removed from City of Corvallis property along the NF-112 access road during the fall of 2019 as part of the USFS Meadow Restoration Project. However, a representative from the City of Corvallis stated that the restoration project, as proposed on City of Corvallis land, is completed and they have no plans to remove the trees located west of Saddle Meadow and east of the CPI communications site (pers. comm. P. Vaughan, April 14, 2021).

The analysis on impacts to visual resources in Section 3.7.4 of this EA included the trees located west of Saddle Meadow and east of the CPI communications site. Because the City of Corvallis does not currently plan to remove those trees, no change were made to this section based on this comment.

Comment 07-04: Eckert

What will prevent you from using Option 4 [Alternative 4]?

Response to Comment 07-04 – All action alternatives, including Alternative 4, are being evaluated based on how well they meet the Project purposes (see Table 2-5 in Section 2.11). There is nothing in particular identified at this time that would necessarily prevent BPA from selecting Alternative 4.

Comment 07-05: Fowler

What precautions have been considered for rare plant species atop Marys Peak?

Response to Comment 07-05 – Vegetation surveys were conducted in 2017 at Marys Peak and in 2018 at West Point Spur to determine if species with special-status are present in areas that could be affected by construction. The term special-status species is used in this EA for species listed or proposed for listing under the federal and state Endangered Species Acts and for USFS and BLM sensitive species. The Vegetation Survey Reports that describe the results of special-status plant species surveys are available on the Project website (www.bpa.gov/goto/MarysPeak).

Other species that do not have a designated special-status can be considered rare, especially on Marys Peak where some species occur that are not found in other areas west of the Cascades. The complete list of all plant species encountered during Project vegetation surveys is in Appendix B of this EA.

To avoid or minimize impacts to vegetation, including rare species with or without special-status designation, an environmental monitor, hired directly by BPA and not the construction contractor, would be present during all outdoor construction activities to ensure that mitigation measures are properly implemented.

As a result of this and other comments received on this topic, the following existing mitigation measures in Section 3.5.5. (Vegetation) of this EA were revised as follows:

- *Install protective fencing to prevent equipment and personnel from trampling rock garden areas during construction.*
- The revised mitigation measure states: *Install temporary exclusion rope fencing and signage, prior to construction, along the access road to the Marys Peak summit in areas with rare native plant species and high quality plant communities, including the rock garden near the summit.*
- *Employ an on-site monitor during construction at Marys Peak to ensure all mitigation measures and BMPs are correctly implemented during construction and to ensure that construction equipment and personnel remain within designated construction areas*
- The revised mitigation measure states: *Employ an on-site environmental monitor (hired directly by BPA and not the construction contractor), during all outdoor construction activities at Marys Peak to ensure all mitigation measures and BMPs are correctly implemented during construction, construction equipment and personnel remain within designated construction areas, and public restricted access areas are in place for human health and safety purposes.*

The following mitigation measures were added to Section 3.5.5 (Vegetation) of this EA to minimize the impacts of access road work on adjacent native plants:

- *Mark water bar and rock apron locations in the field with flags prior to conducting access road work, and coordinate with a USFS botanist to inspect the area to determine if there are native plants to salvage, if so, then salvage and replant in the fall.*
- *Employ a professional botanist to monitor access road work at Marys Peak to ensure vegetation-related mitigation measures are correctly implemented.*
- *Begin access road work (including grading and water bar installation) at the top of Marys Peak (near the summit), with work progressing downhill towards the paved parking lot, when feasible.*
- *During road grading, do not side cast any graded materials; side cast materials must be either compacted on the road surface or removed from the site and disposed of at a USFS approved upland location.*

- *Remove access road rock that inadvertently lands in areas with native vegetation during the placement of rock and relocate it to the road's surface; the removal of rock would be done with care to avoid further damage to vegetation.*

A Project Revegetation Plan is on the Project website (www.bpa.gov/goto/MarysPeak) and BPA welcomed comments on the document to ensure that stakeholder concerns for rare plant species are considered.

Comment 07-06: Eckert

I would like to expand on my previous question about what would prevent you from using Option 4 [Alternative 4]. In thinking about this, even though I'm sure there's no question that the summit of Marys Peak is the most advantageous for a nice, clean signal going pretty much everywhere from the highest peak, there are a couple negatives to the summit. One is the extremely harsh weather that is in the top 200 feet. Since the summit is approximately 200 feet higher than West Point, there is really a marked difference in the wind, the precipitation, the snow – everything about it. The impacts over time that can happen and with climate change even get worse.

Response to Comment 07-06 – Comment acknowledged. By removing the BPA communications site from the Marys Peak summit, Alternative 4 would eliminate the need for any future maintenance activities during extreme weather at the Marys Peak summit.

To clarify, the Marys Peak summit is about 500 feet higher in elevation than West Point Spur. Because of this, Marys Peak summit does experience harsher winter weather conditions than lower elevations sites. Global climate change is likely to contribute to more extreme weather conditions on the Marys Peak summit over time, which could result in more emergency maintenance actions by BPA, if either Alternative 2A or Alternative 3C is implemented.

Comment 07-07: Eckert

I don't think about the individual plants, what I see this as [is] the plant communities, which are almost unique in the world. It would be hard-pressed to find some communities like this, and that's been covered many times in the literature. Every time there's some construction up there – and the last one was 2011, something like that, when the fence was put in – there were a lot of weeds brought up. The non-native gravels were brought up for the road and for the summit; they had a huge impact. I'm not even sure how you can restore that, to tell you the truth. It just seems that when it gets down to the subcontractor level, everything is lost. These great plans that come out with a lot of good people doing a lot of good research are lost once it gets to the subcontractors. The oversight is close to zero on the ground. We saw that in reams back in 2011, but it's happened before also. I really don't see how you can construct – do more construction up there, let alone deconstruction – without causing significant damage to the ecosystem because of the subcontractor issue.

Response to Comment 07-07 – If an action alternative is implemented, the mitigation measures that would be implemented during construction to help prevent the introduction and spread of weeds are identified in Section 3.5.5 of the EA. The following mitigation measure specifies vehicle and equipment cleaning: *Clean equipment and vehicles at air or water-wash stations at a location approved by USFS and BLM, including vacuuming vehicle interiors and floorboards, prior to entering Marys Peak Road and as soon as possible after leaving the work area, to minimize the introduction and spread of weeds during construction.*

The USFS would inspect all equipment prior to entry to verify they have been cleaned and are weed propagule-free. The USFS would deny entry to any equipment that is not deemed clean. This would apply to both the prime contractor and subcontractors.

USFS provided the following response – BPA would address the vegetation mitigation measures, including the presence of a BPA hired, onsite environmental monitor. Any activity runs a risk of spreading

invasive weeds. However, we have learned from past experiences and built our project design criteria to reduce adverse impacts. By following mitigation measures found in Section 3.5.5, the chance of introducing new weed propagules would be reduced. Within Section 3.5.5, it is specified that an on-site monitor would be employed during construction to ensure all mitigation measures and BMPs are correctly implemented.

The monitoring of disturbed sites outlined in the Project Revegetation Plan is designed to find and identify weed infestations and ameliorate the situation if new weeds are brought into the Project area. BPA and cooperating agencies provided the Project Revegetation Plan to interested stakeholders, including Marys Peak Alliance and the Native Plant Society of Oregon, to provide an opportunity for review and comment. The Project Revegetation Plan is posted on the Project website, at [www.bpa.gov/goto/Marys Peak](http://www.bpa.gov/goto/Marys%20Peak).

Comment 07-08: Eckert

Again, it just seems – since we have 100,000 people that come up there every year – you have your trucks coming up there regularly because of the weather and looking at it, that Option 4 [Alternative 4] would be by far the best to stay away from all the people, even if you have to spend a couple more bucks and have a little bit more complexities in the communication. I can go on for an hour on that, but I'll close with that, thank you.

Response to Comment 07-08 – The safety of the public during construction, maintenance, and operation would be a focus of BPA, but it is likely that Alternative 4 would be safer for the general public who visit Marys Peak and hike to the summit during maintenance and operation. Under Alternative 4, BPA would still need to access the summit for several months to remove the existing BPA communications site during the time of year when there is high visitation. Multiple vehicle trips to the summit over five years would also be required to conduct vegetation restoration after removal of the existing BPA communications site.

Comment 07-09: Vander Heide

Who chooses the preferred alternative?

Response to Comment 07-09 – The BPA, USFS, and BLM will continue to work together in a coordinated effort to select an alternative that meets the purpose and need of the Project as well as the agencies' requirements. For BPA, the BPA Project Manager, in consultation with BPA management, will make a decision on the alternative selected for this Project. For the USFS, the District Ranger for the Central Coast Ranger District-Oregon Dunes National Recreation Area for the Siuslaw National Forest will make a decision on the alternative selected for this Project. For the BLM, the Marys Peak Field Manager will make a decision on the alternative selected for this Project. The three agencies will come to a mutual agreement on the alternative that would be implemented.

Comment 07-10: Steed

Bird species tend to be at the true summit, like the snow bunting pair I saw today, and the peregrine family I saw a month ago. How do the plans impact them, if at all?

Response to Comment 07-10 – Wildlife surveys were conducted in the Project's study area in 2018 and 2019. Snow bunting were observed by the surveyors; however, they did not observe peregrine falcons during surveys. Potential impacts to wildlife species, including snow buntings and peregrine falcons, would be similar for the three action alternatives, as discussed in Section 3.6.4 of this EA.

Under Alternative 2A or Alternative 3C, birds could collide with the new steel-lattice structures, 20-foot tall whip antennas, and the new microwave dish. Temporary construction noise and human activity would result in low impacts due to temporary displacement of wildlife species and moderate impacts if noise and activity result in nest abandonment.

Under all action alternatives, areas disturbed by construction would be revegetated with native species, including the current BPA communications site. Overall, impacts on wildlife and wildlife habitat remaining

from construction of any action alternative would be low following the implementation of BMPs and mitigation, as described in Section 3.6.5 of the EA.

Comment 07-11: Briskey

Leveraging whatever Dave Eckert said: It would be good to specifically require that contractor vehicles be pressure-washed before arriving at the job site to reduce the impact of bringing seeds from unwanted species to the peak.

Response to Comment 07-11 – Contractor equipment and vehicles would be cleaned prior to entry, as stated in the following mitigation measure in Section 3.5.5 of this EA: *Clean equipment and vehicles at air or water-wash stations at a location approved by USFS and BLM, including vacuuming vehicle interiors and floorboards, prior to entering Marys Peak Road and as soon as possible after leaving the work area, to minimize the introduction and spread of weeds during construction.*

Comment 07-12: Vander Heide

What are the decision criteria for each of the three agencies involved in making the final decision? When will these decision criteria be available for review?

Response to Comment 07-12 – The decision criteria that will be used by BPA and BLM are listed in Table 2-5 in Section 2.11 of this EA.

USFS provided the following response – There are no set decision criteria that the USFS has for making a decision. The line officer weighs all information provided, from the analysis to public comments, to determine which alternative best fits the purpose and need of the Project. The Decision Rationale will be available in the Draft Decision Notice, when that is published.

Comment 07-13: Vander Heide

For Michele (at USFS) – do you consider your existing management direction for the area?

USFS provided the following response to Comment 07-13 – The USFS is considering existing management direction and consistency of Project alternatives with USFS planning documents that apply to the Project area, as discussed in Section 4.3 and Section 4.4 of this EA.

Comment 07-14: Eckert

How do you consider the impacts of communications signals on Marys Peak visitors?

Response to Comment 07-14 – The impact of communications signals on the public from action alternatives is discussed in Section 3.12.4 of the EA. The public is not expected to be exposed to microwave radiation because they would need to stand directly in front of and very close to an antenna for an extended period of time to receive microwave radiation exposure. Therefore, there would be no health and safety impacts from microwave radiation.

A VHF antenna would be added to the proposed new steel-lattice structure at the summit under Alternative 2A and Alternative 3C. The new VHF antenna would emit VHF radiation, like the other VHF equipment at Marys Peak. Any incremental change in VHF emissions under Alternative 2A and Alternative 3C would be low, resulting in low health and safety impacts. Because the strength of VHF radiation decreases rapidly with distance from the antenna, the fact it would be mounted on a steel-lattice structure within a fenced communications site, would decrease exposure. For more general information on health effects of EMR, see Section 3.12.2 of this EA.

Comment 07-15: McCain

The last time water bars were improved on the access road to the summit, the meadows were impacted. This seems to be more of the same. Can we reduce the impact of water bars?

Response to Comment 07-15 – To prevent erosion at high elevation sites in the Oregon Coast Range, such as Marys Peak, BPA access road engineers take into account rainfall data and velocity formulas for this region. Those data and calculations were used to determine the number of water bars that should be installed on each access road for each alternative (NF-112 under Alternative 4; unpaved access road between Marys Peak parking lot and the summit under Alternative 2A or Alternative 3C). Data and calculations also determined that rock aprons on the outfall side of some of the water bars could need to be as large as 10 feet by 10 feet in size to adequately dissipate the quantity and velocity of rainfall to avoid impacts to adjacent habitats. This size of rock apron would result in up to 100 square feet of permanent vegetation impacts at each water bar location, as described in Section 2.5.2.

The size of some rock aprons could potentially be reduced in size depending on yet-to-be determined site specific conditions. For example, there is a possibility that rock aprons could be smaller at higher elevation locations because less precipitation will accumulate and gain velocity, compared to lower elevation water bar locations. If smaller rock aprons are feasible, then the permanent impacts to vegetation at those sites would be reduced.

The proposed locations of the water bars are of public concern, especially near unique habitat and vegetation areas, such as the rock garden near the summit. Water bars and rock aprons would be installed where natural depressions and downhill outfalls already exist, when feasible. The exact location of each water bar is yet-to-be-determined. The BPA and USFS access road engineers would attempt to place water bars to avoid high quality vegetation, yet still serve their purpose, as much as possible. The locations of water bars would be marked with flags in the field prior to conducting access road work and a botanist would inspect the area to determine if there are any native plants that could be salvaged and then replanted in the fall.

Any areas where vegetation is disturbed by water bar and rock apron installation would be revegetated with native species and monitoring for the presence of noxious weeds and other non-native plant species, followed by treatment. The Project Revegetation Plan on the Project website (www.bpa.gov/goto/MarysPeak) includes information on the plant salvage, revegetation, and monitoring of the water bar sites.

Comment 07-16: McEvoy

There was mention of not finding rare species of concern in the surveys, but ecosystems on the summit are unique and need to be addressed as such.

Response to Comment 07-16 – The plant communities at Marys Peak are unique and need a special level of attention and care. BPA would minimize ecosystem impacts through a variety of methods, such as limiting work areas on the summit to the fenced area, staging equipment and materials inside the fence or on the paved parking lot, and implementing various measure to prevent erosion and the introduction and spread of non-native species. An environmental monitor, hired directly by BPA and not the construction contractor, would be present during all outdoor construction activities to ensure that mitigation measures are properly implemented. Additionally, a professional botanist environmental monitor, also hired directly by BPA, would be present during Marys Peak access road work activities to ensure proper implementation of roadside vegetation avoidance and mitigation measures, should Alternative 2A or Alternative 3C be implemented. See response to Comment 07-05 for additional details on mitigation measures to minimize impacts to native plant species.

Comment 07-17: McEvoy

The introduction of weeds – especially oxeye daisies – has large existing seed bank. How to prevent spread.

Response to Comment 07-17 – The potential for weed invasion and spread would be minimized by the implementation of mitigation measures described in Section 3.5.5 of this EA, including revegetation of

work areas with native species and monitoring of the presence of noxious weeds and other non-native plant species. There is an existing seed bank at Marys Peak for non-native species such as oxeye daisy. Areas disturbed by construction would need to be monitored for the emergence of non-native and weedy species would be treated as needed while planted native vegetation becomes established. The Project Revegetation Plan on the Project website (www.bpa.gov/goto/MarysPeak) includes information on the monitoring protocol of areas disturbed by construction that would be used to find non-native species and then treated by hand pulling as the desired methodology, where possible.

Comment 07-18: Eckert

Remember that rainfall is far greater on the [Marys Peak] summit than anything – any surrounding areas, sometimes with 100 mile-per-hour winds. That amplifies the runoff volumes and velocities.

Response to Comment 07-18 – Construction would be done as much as possible in the dry season to prevent erosion resulting from heavy rains. The potential impacts from heavy Oregon Coast Range rainfall was taken into account during the water bar design; the water bars and rock aprons would be located, sized, and designed to handle typical annual Marys Peak precipitation volumes. See response to Comment 07-15 for additional details.

Comment 07-19: McCain

Fireweed may be fairly tall compared to existing species along the roadside. Keep to lower heights to blend in?

Response to Comment 07-19 – If Alternative 2A or Alternative 3C is implemented, then water bars and rock aprons would be installed between the paved parking lot and the Marys Peak summit. Because fireweed does not occur along the edge of the access road to Marys Peak summit, fireweed would not be planted. Furthermore, any plant species that grow tall would not be planted at the edge of water bars because their height would emphasize the location of the water bars.

If Alternative 4 is implemented, fireweed would be planted in areas disturbed by water bar installation along the access road (NF-112) because it is already found growing there. In general, the access road to the CPI communications site is bordered by tall-growing vegetation, including trees, shrubs and tall forbs. The Project Revegetation Plan on the Project website (www.bpa.gov/goto/MarysPeak) includes information on the species that would be planted for each action alternative.

Comment 08: Tokuda

I wish to support the relocation of the BPA communications equipment to a lower point on the slope of the Peak. I support Option 4 [Alternative 4] in the proposal. It is an opportunity to reduce the ecological and physical damage to this natural resource that is so very vital as a natural habitat. Thank you.

Response to Comment 08 – Comment acknowledged.

Comment 09: Gile/Great Old Broads for the Wilderness

I urge you to choose option 4 [Alternative 4] to reduce impact on and protect the ecology and biology of Marys Peak. This option would also protect your equipment and operators from extreme weather on the peak. Thank you.

Response to Comment 09 – Comment acknowledged.

Comment 10: Pitera

As a new Corvallis citizen, I have come to love the grandeur of Marys Peak. As you evaluate Marys Peak usage, please consider the wildlife, the forests and plant life, the waters and the wonderful recreational opportunities. I have examined the listed options and am definitely in favor of Option 4 [Alternative 4] and hope that will be your choice.

[Response to Comment 10 – Comment acknowledged.](#)

Comment 11: Rossman

I have known and loved Marys Peak for over fifty years from when I was a graduate student at OSU to returning to Corvallis after retirement. In my field of the study of fungi, I have explored for interesting and unusual species on Marys Peak. I also greatly appreciated the wonderful wildflowers that grow there. In looking at the various options for the BPA facility, it would appear that option 4 [Alternative 4], placing the tower on the West Side Spur, provides the best solution. The thought of filling the Peak with human-made equipment is contrary to the essence of this natural wonder, the highest point in the Coast Range of Oregon. The top of Marys Peak is a place of tranquility and renewal unlike these necessary reminders of modern civilization. Considering the unique flora that exists there now, doing anything that threatens this when there is a viable alternative would not be wise.

[Response to Comment 11 – Comment acknowledged.](#)

Comment 12: Barron

I am in favor of option 4 [Alternative 4], to consolidate and blend the communications facility. This will not only be less expensive but help to preserve the beauty at the summit, minimize intrusion and impact on the environment, including plants and wildlife. Thank you.

[Response to Comment 12 – Comment acknowledged.](#)

Comment 13: Yang

Dear BPA, Thank you for the opportunity to comment on the Marys Peak BPA Communications Site Project. I have spent many years walking on Marys Peak, especially in the Scenic Botanical Special Interest Area. I am a retired network engineer (24 years at Stanford University) and am currently a Courtesy Research Associate in OSUs Department of Botany and Plant Pathology. I strongly recommend that BPA chooses Alternative 4 (moving BPA equipment to West Point) for the following reasons: Scenic Improvement: Alternative 4 is the only alternative that improves the scenic resources on the top of Marys Peak by shrinking the telecommunications footprint instead of adding a 40-60 foot tower. Alternatives 2 and 3 also require HVAC systems, which may generate enough noise to ruin the sense of quiet. The major road upgrades required by Alternatives 2 and 3 will be a stark visual contrast to the rolling meadows instead of an old road slowly melding into the landscape. Vegetation Preservation: Alternatives 2 and 3 both require major upgrades to the access road, which will affect the neighboring vegetation, especially around the unique and sensitive Rock Garden, where the road is quite narrow. Although the Environmental Assessment does not expect significant disturbance of vegetation, previous work on the peak has resulted in weed introduction and degradation of the meadows. Alternative 4 offers an opportunity to restore more of the unusual native meadows at the top. Long term Maintenance of BPA Operations: During my career in networking, we preferred telecommunication sites that were more secure, more accessible, more stable environmentally, less public, and with room to grow. Based on the BPA Environmental Assessment, the West Point site seems far preferable than the top of Marys Peak in all these ways. As weather volatility is most likely to increase, West Point is a less extreme site than the top of Marys Peak, both for environmental conditions and the safety of staff in reaching and repairing equipment. The access road to West Point is far less steep and exposed than the access road to the top of Marys Peak. The only downside of West point I could find in the EA was radio connection to some Eugene sites but since Alternative 4 was not eliminated, I assume BPA is able to connect to these sites in some other way. Construction and Implementation: Alternative 4 poses the least implementation challenges, which may be why it is listed as the least expensive. It has the least short and long-term impacts to vegetation, geology and recreation access. Scheduling of the phases of Alternative 4 is less constrained by the combination of weather, maximizing recreation access, and nesting seasons than the other alternatives. Because the access road will not need to be significantly improved or blocked, there is less impact on public visitors. Alternative 4 is by far the best option offered.

Comment 13-01: Yang

Dear BPA, Thank you for the opportunity to comment on the Marys Peak BPA Communications Site Project. I have spent many years walking on Marys Peak, especially in the Scenic Botanical Special Interest Area. I am a retired network engineer (24 years at Stanford University) and am currently a Courtesy Research Associate in OSUs Department of Botany and Plant Pathology. I strongly recommend that BPA chooses Alternative 4 (moving BPA equipment to West Point) for the following reasons: Scenic Improvement: Alternative 4 is the only alternative that improves the scenic resources on the top of Marys Peak by shrinking the telecommunications footprint instead of adding a 40-60 foot tower.

Response to Comment 13-01 – Comment acknowledged.

Comment 13-02: Yang

Alternatives 2 and 3 also require HVAC systems, which may generate enough noise to ruin the sense of quiet.

Response to Comment 13-02 – Both Alternative 2A and Alternative 3C would require the addition of an HVAC system that would increase the noise levels at the Marys Peak summit when they are in operation. Potential noise impacts would vary depending on the action alternative and the facilities involved. Information about the potential noise impacts from construction, from operation of the HVAC system, and from operation of the engine generator is in Section 3.10 of this EA. All of the action alternatives would meet EPA noise guidance for public health and welfare, as well as all applicable federal, state, and local noise regulations.

To minimize HVAC system noise, BPA would install a more expensive HVAC system model. The more expensive models tend to produce less noise than less expensive models. Noise baffles would not be used because they decrease the operational efficiency of the HVAC system.

Comment 13-03: Yang

The major road upgrades required by Alternatives 2 and 3 will be a stark visual contrast to the rolling meadows instead of an old road slowly melding into the landscape.

Response to Comment 13-03 – Under Alternative 2A or Alternative 3C, the proposed access road work would initially result in visual contrast between the road and adjacent meadows. As described in Section 3.7.4 of the EA, the new, un-weathered appearance of the newly applied gravel on the road surface would result in moderate visual contrast with the vegetated edges of the meadow. Initially the visual contrast is not expected to be strong because the existing road prism would be maintained and improvements would not expand beyond the edges of the existing road's rocky surface, except where rock aprons would be constructed at the edge of some water bars. The initial moderate level of visual contrast would be reduced over time as the new gravel weathers and vegetation along the road edge encroaches into the graveled areas.

Comment 13-04: Yang

Vegetation Preservation: Alternatives 2 and 3 both require major upgrades to the access road, which will affect the neighboring vegetation, especially around the unique and sensitive Rock Garden, where the road is quite narrow.

Response to Comment 13-04 – Under Alternative 2A or Alternative 3C, the rock garden area, areas with rare native plant species, and areas with high quality habitat (including those adjacent to the unpaved access road leading to the summit), would be roped off to prohibit entry by vehicles, equipment, and personnel to prevent damage to the vegetation. Environmental monitors, including a professional botanist, would be on site during Marys Peak access road work to minimize impacts to these unique and sensitive areas. See responses to Comment 07-05 and Comment 07-15 for additional details.

Comment 13-05: Yang

Although the Environmental Assessment does not expect significant disturbance of vegetation, previous work on the peak has resulted in weed introduction and degradation of the meadows.

Response to Comment 13-05 – See response to Comment 07-07.

Comment 13-06: Yang

Alternative 4 offers an opportunity to restore more of the unusual native meadows at the top.

Response to Comment 13-06 – Comment acknowledged.

Comment 13-07: Yang

Long term Maintenance of BPA Operations: During my career in networking, we preferred telecommunication sites that were more secure, more accessible, more stable environmentally, less public and with room to grow. Based on the BPA Environmental Assessment, the West Point site seems far preferable than the top of Marys Peak in all these ways. As weather volatility is most likely to increase, West Point is a less extreme site than the top of Marys Peak, both for environmental conditions and the safety of staff in reaching and repairing equipment. The access road to West Point is far less steep and exposed than the access road to the top of Marys Peak.

Response to Comment 13-07 – As indicated in the EA, the West Point Spur site (Alternative 4) would be more accessible for BPA staff, result in fewer public interactions, have fewer environmental impacts, and more potential for future expansion of the communications site than the Marys Peak summit site.

The West Point Spur communications sites may not be targeted for intentional destructive acts as often as the communications sites located on the Marys Peak summit, as evidenced by a recent incident that damaged BPA equipment located inside the Marys Peak communications site's chain link fence.

Both the Marys Peak communications site at the summit and the CPI communications site located at West Point Spur have locked steel gates at the bases of their unpaved access roads to prevent unauthorized vehicle entrance to the communications sites. Both sites also have a chain link fence with barbed wire on the top to deter unauthorized human access inside the communications sites. Although the security infrastructure at the Marys Peak and CPI communications sites is similar, anecdotal evidence suggests that a large segment of the local population, as well as visitors to the Marys Peak area, are not aware of the presence of communications sites at West Point Spur. This general unawareness may make communications sites at West Point Spur less of a target for intentional destructive acts than the communications sites at the Marys Peak summit. West Point Spur is not on a main route of travel for the general public who usually drive to the Marys Peak paved parking lot, which tends to be the ultimate destination for most vehicles traveling on the mountain. There is no signage identifying the West Point Spur communications site at Marys Peak Road; it is possible that people may not know how to get there, even if they did notice the tops of West Point Spur's communications steel-lattice structures from the summit.

Because West Point Spur receives far less visitors than the Marys Peak summit, the CPI communications site could be more vulnerable to vandalism or sabotage during daylight hours than the Marys Peak communications site. However, both communications sites are at risk to vandalism or sabotage at night.

Until the recent incident of vandalism at the Marys Peak summit communications site, the BPA project manager was unaware of any intentional destructive acts at BPA communications sites. However, due to this recent incident, the text in Section 3.12.4 (Public Health and Safety) of this EA has been updated to elevate the risk of theft, vandalism, or acts of sabotage or terrorism for Alternative 2A or Alternative 3C from low to moderate. The EA still concludes that the risk level for Alternative 4 is considered low.

Comment 13-08: Yang

The only downside of West point I could find in the EA was radio connection to some Eugene sites but since Alternative 4 was not eliminated, I assume BPA is able to connect to these sites in some other way.

Response to Comment 13-08 – Under Alternative 4, BPA would have some decreased VHF communication capabilities in some areas compared to the existing VHF coverage from the site at the Marys Peak summit; however, Alternative 4 would increase VHF communications coverage in other areas that are currently not covered. The “new” communications coverage areas under Alternative 4 are not useful to BPA workers in the region, because BPA does not have transmission line corridors in those areas and, therefore, would not require BPA VHF communications coverage.

BPA does not have other communications sites near Marys Peak that field workers can connect to in the BPA Eugene Radio Region. Therefore, a communications site either at the Marys Peak summit or at West Point Spur are critical for BPA communications in this region of the Oregon Coast Range.

Comment 13-09: Yang

Construction and Implementation: Alternative 4 poses the least implementation challenges, which may be why it is listed as the least expensive.

Response to Comment 13-09 – Alternative 4 would not require construction of a building and steel-lattice communications structure, but it would require some renovations to the existing CPI communications building. Because CPI’s existing steel-lattice communications structure at West Point Spur would be used with minor modifications, it would be less expensive to implement than the other two action alternatives.

Comment 13-10: Yang

It [Alternative 4] has the least short and long-term impacts to vegetation, geology and recreation access.

Response to Comment 13-10 – Comment acknowledged.

Comment 13-11: Yang

Scheduling of the phases of Alternative 4 is less constrained by the combination of weather, maximizing recreation access, and nesting seasons than the other alternatives.

Response to Comment 13-11 – Any restrictions in the construction schedule due to weather and the nesting season would likely be the same for all action alternatives. However, there likely would be fewer impacts to construction scheduling under Alternative 4 due to recreational use.

Comment 13-12: Yang

Because the access road will not need to be significantly improved or blocked [under Alternative 4], there is less impact on public visitors.

Response to Comment 13-12 – As indicated in the EA, there would be fewer impacts to public visitors to Marys Peak under Alternative 4 because there would be no work on the access road to the summit.

Comment 13-13: Yang

Alternative 4 is by far the best option offered.

Response to Comment 13-13 – Comment acknowledged.

Comment 14: Peterson

As the highest point in the Coast Range, Marys Peak includes a special Botanical Special Interest Area. Option 4 provides the best solution to preserving the special botanical flora. Each time there is excavation and other work on the communication gear on the summit, invasive weeds are introduced by the contractors. It is ridiculous that the towers etc. are in the middle of this fragile botanical area. Additionally, the viewscape is scared by the

communication buildings and towers. Option 4, moves the tower on the West Side Spur, provides the best solution, visually, botanically and economically.

Comment 14-01: Peterson

As the highest point in the Coast Range, Marys Peak includes a special Botanical Special Interest Area.

[Response to Comment 14-01 – Comment acknowledged.](#)

Comment 14-02: Peterson

Option 4 [Alternative 4] provides the best solution to preserving the special botanical flora.

[Response to Comment 14-02 – Comment acknowledged.](#)

Comment 14-03: Peterson

Each time there is excavation and other work on the communication gear on the summit, invasive weeds are introduced by the contractors.

[Response to Comment 14-03 – See the response to Comment 07-07.](#)

Comment 14-04: Peterson

It is ridiculous that the towers etc. are in the middle of this fragile botanical area.

[Response to Comment 14-04 – Comment acknowledged.](#)

Comment 14-05: Peterson

Additionally, the viewscape is scar[r]ed by the communication buildings and towers.

[Response to Comment 14-05 – Comment acknowledged.](#)

Comment 14-06: Peterson

Option 4 [Alternative 4], moves the tower on the West Side Spur, provides the best solution, visually, botanically and economically.

[Response to Comment 14-06 – Comment acknowledged.](#)

Comment 15: Hackleman

Nice to observe that action is to be taken. Disappointed that there will be a lack of any facility that would enable public use on visits to the peak top. Arguments stated against such were quite unconvincing. Leaving the system as it will be invites vandalism compared to such an alternative with some security observational systems. Cost evaluation may not have included reduction in vandalism as a cost savings if public structure were constructed. However, evidently there is no interest in making the peak a better destination for visitors by including educational and visual talking points as has been done in many other countries best noted in Europe.

Comment 15-01: Hackleman

Nice to observe that action is to be taken.

[Response to Comment 15-01 – Comment acknowledged.](#)

Comment 15-02: Hackleman

Disappointed that there will be a lack of any facility that would enable public use on visits to the peak top. Arguments stated against such were quite unconvincing.

[Response to Comment 15-02 – Comment acknowledged.](#)

Comment 15-03: Hackleman

Leaving the system as it will be invites vandalism compared to such an alternative with some security observational systems.

Response to Comment 15-03 – All action alternatives would involve installation of security monitoring equipment. Any new security lights that would be installed would be motion-sensor activated to avoid continuous illumination during the night.

The USFS provided the following response – Security measures, including cameras, are currently in place at the USFS communications site. Security measures would continue to be in place after Project completion because they have been effective at reducing vandalism.

Comment 15-04: Hackleman

Cost evaluation may not have included reduction in vandalism as a cost savings if public structure were constructed.

Response to Comment 15-04 – See response to Comment 13-07. There has only been one vandalism incident reported at the existing BPA communications site at the Marys Peak summit since the installation of the chain link fence by the USFS. The damage was minimal and so the cost of repair was not high. Because it is difficult to predict if there would be more costly damage at this facility, vandalism costs were not considered a significant factor in the cost analysis for the Project.

Comment 15-05: Hackleman

However, evidently there is no interest in making the peak a better destination for visitors by including educational and visual talking points as has been done in many other countries best noted in Europe.

Response to Comment 15-05 – This project does not foreclose the possibility of the installation of interpretive signage or other educational displays, particularly at the Marys Peak public parking area. Signage could be installed as mitigation for either Alternative 2A or Alternative 3C, if either action alternative was implemented, or by the USFS at some point in the future. BPA does not propose to install any signage at the summit because of potential resource conflicts that could result from the ground disturbance of installing a sign and from the effect of trampling of soils and vegetation as visitors gather at the sign. BPA defers to the USFS for land management actions within the SBSIA beyond the scope of this Project.

USFS provided the following response – Managing this site for electronic use is part of the objectives of the Marys Peak Special Interest Area, as explained in Section 4.4.2. While enhancing and adjusting the recreational opportunities are outside the scope of this Project, we recognize the importance of the site as a recreational destination and are committed to working with outside organizations as we develop future plans. There are plans to review and update the interpretation on Marys Peak in cooperation with the Marys Peak Alliance.

Comment 16: Roth

[REDACTED]
Corvallis, Oregon 97330

November 11, 2020

Re: Comments to BPA regarding construction on Marys Peak

I have lived in the Willamette Valley since 1983 and since the moment I decided to move here with my two sons, Marys Peak has been a favorite destination.

Being the highest point in the Coast Range, Marys Peak offers 360° views of east and west, north and south. It is a stunning place to connect with our corner of the world.

Several years ago a friend and I hiked to the top of Mary's from a side road off of Highway 20. We arrived at the Peak before sundown and sat on the foundation of the ugly concrete building poised right on the top of the mountain. The building was ugly, but offered shelter from the cold wind coming from the west. We relished our time at the peak of 'our' mountain.

I have only been at the top of Marys Peak once in the last five or six years. That trip was horrifying. The ugly concrete building that offered us shelter from the wind seemed tiny compared to the chain link fence enclosure that encompassed all of the apex of our precious mountain.

I cannot return to our peak. It was horrifying to see the flowers beyond our reach or even to enjoy the wind-break offered by the ugly concrete building.

Now, I hear there will be more construction encompassing the apex of our historic and beautiful Marys Peak.

Building your barbed wire fortifications anywhere in our wilderness areas is terrible, but on our Peak, it is unforgivable. You are compromising Marys Peak's beauty, history, and welcome.

Please reconsider and build your enclosure away from the top of Marys Peak.

[REDACTED]

[Response to Comment 16 – We acknowledge your preference for Alternative 4.](#)

Comment 17: Arrington/Marys Peak Group, Sierra Club

The Executive Committee of the Marys Peak Group – Sierra Club wishes to express its concern over proposed changes to the communications site on the summit of Marys Peak. We are worried about the impact of construction on the Marys Peak Scenic Botanical Special Interest Area (SBSIA) and on the rare and endangered species that live there. All three proposed actions would cause damage to the site in question. Although the environmental assessment states that the impacts of construction would be temporary, we believe that there are long term negative impacts from such work. We support Alternative 4, to move the communications site to West

Point Spur with the existing Consumers Power, Inc. site. This would spare the Marys Peak SBSIA and still result in an upgraded communications facility and a more stable building. There are added benefits of this possible site that could save on costs and reduce the negative impact of the project. The West Point Spur requires less roadwork. There is also no need to build a new steel-lattice structure nor a new communications building. We urge you to choose Alternative 4 in order to protect the unique species and the beauty of Marys Peak while improving the communications necessary for the Willamette Valley.

Comment 17-01: Marys Peak Group, Sierra Club

The Executive Committee of the Marys Peak Group – Sierra Club wishes to express its concern over proposed changes to the communications site on the summit of Marys Peak. We are worried about the impact of construction on the Marys Peak Scenic Botanical Special Interest Area (SBSIA) and on the rare and endangered species that live there.

Response to Comment 17-01 – The EA addresses potential impacts to special-status plant, animal, and fungi species with status under the federal Endangered Species Act, the Oregon Endangered Species Act, and Forest and BLM sensitive species. Special-status plant and fungi species are addressed in Section 3.5.4 of the EA and wildlife species are addressed in Section 3.6.4. Of these species, only special-status fungi, if present, would have a small amount of their noble fir habitat removed under Alternative 2A and Alternative 3C.

Mitigation measures in Section 3.5.5 (Vegetation) and 3.6.5 (Wildlife) of the EA would help avoid or minimize impacts to special-status species. In addition, there are other species that are not commonly distributed and so could also be considered rare. These rare species without a special-status designation would also benefit from Project mitigation measures.

Construction impacts to other resources within the SBSIA, including geology and soils, scenic resources, and recreation, are addressed in Chapter 3 of the EA.

Comment 17-02: Marys Peak Group, Sierra Club

All three proposed actions would cause damage to the site in question. Although the environmental assessment states that the impacts of construction would be temporary, we believe that there are long term negative impacts from such work.

Response to Comment 17-02 – Table 2-6 in Section 2.12 (Summary of Potential Resource Impacts) includes both the temporary and permanent impacts that could occur from construction of action alternatives. As discussed in the EA, some resources would have permanent impacts, including geology and soils, vegetation, wildlife, visual quality, and noise.

Comment 17-03: Marys Peak Group, Sierra Club

We support Alternative 4, to move the communications site to West Point Spur with the existing Consumers Power, Inc. site. This would spare the Marys Peak SBSIA and still result in an upgraded communications facility and a more stable building.

Response to Comment 17-03 – Alternative 4 would still require work within the SBSIA, as discussed in the response to Comment 06-02. The amount of work within the SBSIA under Alternative 4 would be less than the work within the SBSIA under Alternative 2A or Alternative 3C because work would not be conducted on the access road to the Marys Peak summit under Alternative 4.

Alternative 4 would provide an upgraded communications facility compared to the BPA communications facility that currently exists at the Marys Peak summit. However, the stability of the communications building under Alternative 4 would be comparable to that of the Marys Peak BPA communications site as upgraded under Alternative 2A or Alternative 3C.

Comment 17-04: Marys Peak Group, Sierra Club

There are added benefits of this possible site that could save on costs and reduce the negative impact of the project. The West Point Spur requires less roadwork. There is also no need to build a new steel-lattice structure nor a new communications building.

Response to Comment 17-04 – Comment acknowledged. The EA reflects the reduced costs and lesser amount of work required under Alternative 4.

Comment 17-05: Marys Peak Group, Sierra Club

We urge you to choose Alternative 4 in order to protect the unique species and the beauty of Marys Peak while improving the communications necessary for the Willamette Valley.

Response to Comment 17-05 – Comment acknowledged.

Comment 18: Hays

I support alternative 4, moving BPA facilities to the Consumer Power facility in the City of Corvallis communication site on West Point for the following reasons: 1. This is the least expensive of the alternatives. 2. It creates the least disturbance in the Botanical Special Interest Area at the summit. 3. It interferes the least with public use of the summit. 4. It has the least probability of introducing alien species in the sensitive botanical area. 5. It has a positive effect upon visual quality in the Scenic Special Interest Area at the summit by reducing the amount of facilities and clutter there. 6. It moves the fence and reduces the size of the hideously ugly communication site. 7. It minimizes disturbance to the road to the summit. 8. It restores some of the native plant vegetation in the Botanical Special Interest Area at the summit. 9. The West Point site has less wind damage than on the summit and is easier to access during the winter. **** I oppose Alternative 2A because it increases the clutter at the summit, reduces visual quality in the Scenic Special Interest Area, and does not comply with the goals of the Forest Service Management Direction for the Marys Peak Scenic-Botanical Special Interest Area. I oppose Alternative 3C because it creates a large disturbance in the sensitive Botanical Special Interest Area, it disrupts public use on the summit, it is the most expensive alternative, it significantly reduces visual quality at the summit of the Scenic Special Interest Area, and it has a large probability of introducing alien species into the Botanical Special Interest Area.

Comment 18-01: Hays

I support alternative 4, moving BPA facilities to the Consumer Power facility in the City of Corvallis communication site on West Point for the following reasons: 1. This is the least expensive of the alternatives. 2. It creates the least disturbance in the Botanical Special Interest Area at the summit. 3. It interferes the least with public use of the summit. 4. It has the least probability of introducing alien species in the sensitive botanical area. 5. It has a positive effect upon visual quality in the Scenic Special Interest Area at the summit by reducing the amount of facilities and clutter there. 6. It moves the fence and reduces the size of the hideously ugly communication site. 7. It minimizes disturbance to the road to the summit. 8. It restores some of the native plant vegetation in the Botanical Special Interest Area at the summit. 9. The West Point site has less wind damage than on the summit and is easier to access during the winter.

Response to Comment 18-01 – Comment acknowledged. The EA includes discussions of the many considerations identified by the commenter for comparing Alternative 4 to Alternative 2A and Alternative 3C. While the commenter's observations are largely consistent with the EA analysis, it should be noted that Alternative 3C would also result in the removal of the existing BPA communications site from summit. Both Alternative 3C and Alternative 4 would restore an additional 7,700 square feet of area once the existing BPA communications site is removed. The USFS would need to approve the removal of approximately 229 feet of fencing from around the BPA communications site after the site is restored, as seen in a new map inserted into Section 2.5.8 and simulated in Appendix E, page E-9. When USFS approves fence removal, BPA would fund the removal of these segments of the chain link fence.

Comment 18-02: Hays

I oppose Alternative 2A because it increases the clutter at the summit, reduces visual quality in the Scenic Special Interest Area, and does not comply with the goals of the Forest Service Management Direction for the Marys Peak Scenic-Botanical Special Interest Area.

USFS provided the following response to Comment 18-02 – We considered Forest Plan consistency when reviewing the various alternatives for this Project. Section 4.4.2 of this EA discusses consistency of Project action alternatives with USFS planning documents.

Comment 18-03: Hays

I oppose Alternative 3C because it creates a large disturbance in the sensitive Botanical Special Interest Area, it disrupts public use on the summit, it is the most expensive alternative, it significantly reduces visual quality at the summit of the Scenic Special Interest Area, and it has a large probability of introducing alien species into the Botanical Special Interest Area.

Response to Comment 18-03 – Under Alternative 3C, although there would be disturbance within the existing fence to construct the steel-lattice communications structure and the building addition, removal of the existing BPA communications site would result in temporary low impacts to about 0.14 acre of vegetation within the SBSIA. The area within the fence would be restored with native species after the removal of the BPA communications site.

Project activities would temporarily block public access under both Alternative 3C and Alternative 2A, as discussed in Section 3.3.4. There would be intermittent recreational access restrictions during access road improvements and construction on the summit, such as during construction of the steel-lattice structure. Access would also be temporarily restricted for up to several hours when transporting equipment and materials from the staging area on the parking lot to the communications site. Otherwise, the public would be able to recreate at the summit while construction occurs.

As discussed in the EA, the visual impacts that would result from Alternative 3C were not considered significant using the methodology for the scenic resources analysis because there would be only a moderate change from existing conditions. The greatest impact to scenic resources from Alternative 3C would be due to the height of the new 60-foot tall BPA steel-lattice communications structure.

About an acre of vegetation would be disturbed under Alternative 3C. This includes the water bar rock aprons along the access road leading to the summit and within the fence at the summit communications site. Because this is within the SBSIA, an acre could be considered a large area. The introduction or spread of non-native species is considered the largest potential impact to vegetation; mitigation measures would be implemented to reduce this risk (Section 3.5.5). This includes post-construction monitoring of disturbed areas to determine if any new non-native species are introduced and treatment to remove them.

Comment 19: Pace

I understand ALL of the concerns re impacts of upgrading Marys Peak on, e.g., plant species of interest, runoff into the meadows downgradient, spread of invasive species during construction, and on and on. All of these concerns are valid. There is however a compelling concern that, in my opinion, trumps all of the above. Marys Peak is essential for control and reliability. It's particularly important for purposes of rebuilding following system interruptions. If there is any asset in the FCRPS that is essential, this is one. Not quite as important as GCL, but almost. A little thought experiment is in order. Imagine that energy systems serving the western USA are struggling with cascading failures. How long will people tolerate disruption. I guess it's about three to five days. After that, you do anything and everything you have to do to restore operations. Upgrading Marys Peak now is a pittance compared to willingness to pay to avoid prolonged disruption. Once the power system is failing, the type

of environmental issues that attend this project won't survive 30 seconds of serious discussion. I think it would on balance be very prudent to upgrade these facilities. If there are endangered/threatened species that will be impacted and there are not reasonable and prudent alternatives that avoid harm, I think it would behoove the secretary of defense to exempt this essential facilities for national security ... as ESA allows.

Comment 19-01: Pace

I understand ALL of the concerns re impacts of upgrading Marys Peak on, e.g., plant species of interest, runoff into the meadows downgradient, spread of invasive species during construction, and on and on. All of these concerns are valid.

Response to Comment 19-01 – Comment acknowledged.

Comment 19-02: Pace

There is however a compelling concern that, in my opinion, trumps all of the above. Marys Peak is essential for control and reliability. It's particularly important for purposes of rebuilding following system interruptions. If there is any asset in the FCRPS that is essential, this is one. Not quite as important as GCL [Grand Coulee Dam], but almost.

Response to Comment 19-02 – Comment acknowledged.

Comment 19-03: Pace

A little thought experiment is in order. Imagine that energy systems serving the western USA are struggling with cascading failures. How long will people tolerate disruption. I guess it's about three to five days. After that, you do anything and everything you have to do to restore operations.

Response to Comment 19-03 – Comment acknowledged.

Comment 19-04: Pace

Upgrading Marys Peak now is a pittance compared to willingness to pay to avoid prolonged disruption. Once the power system is failing, the type of environmental issues that attend this project won't survive 30 seconds of serious discussion.

Response to Comment 19-04 – All three action alternatives would result in upgrading BPA's communications equipment, although the best communication signal for BPA would be available under Alternative 2A and Alternative 3C at the Marys Peak summit, compared to Alternative 4 at West Point Spur.

Comment 19-05: Pace

I think it would on balance be very prudent to upgrade these facilities. If there are endangered/threatened species that will be impacted and there are not reasonable and prudent alternatives that avoid harm, I think it would behoove the secretary of defense to exempt this essential facilities for national security ... as ESA allows.

Response to Comment 19-05 – The potential effect of each action alternative to federally-listed species and designated critical habitat under the federal Endangered Species Act is being considered for this Project, as discussed in Section 4.2.1 of this EA. There are no federally-listed plant species that would be affected by this Project. BPA conducted field surveys for the ESA-listed wildlife species that have the potential to occur in the Project area (marbled murrelet in 2018 and 2019, and the northern spotted owl in 2018, 2019, 2020 and 2021). Although there have been no detections of these wildlife species, BPA will continue to perform surveys as needed each year until construction starts. BPA could need to consult with the USFWS under Section 7 of the ESA concerning any potential effects to these species and their designated critical habitat (Section 4.2.1). It is not expected that there would be a need for an exemption to the ESA for this Project.

Comment 20: Eckert/Marys Peak Alliance

November 13, 2020

To: Bonneville Power Administration, Public Affairs - DKE-7, P.O. Box 14428, Portland, OR 97291-4428 - www.bpa.gov/comment

From: Marys Peak Alliance of AFRANA, P.O. Box 101, Corvallis, OR 97339

Subject: Marys Peak BPA Communications Site Project

The Marys Peak Alliance of AFRANA:

1. Supports Alternative 4, the Marys Peak West Point Spur for the site of the prospective Marys Peak BPA Communications site.
2. Does not support Alternative 2A or 3C, which are to be located on the Marys Peak summit.
3. Recommends correcting omissions or incorrect statements for the final Environmental Assessment (EA).

Details are presented below.

1. Support for Alternative Option #4 - West Point

The Marys Peak Alliance of AFRANA (MPA) recommends Alternative 4: West Point Spur co-locate on CPI site. Following are reasons for this recommendation.

Improved BPA Employee Safety – The Marys Peak summit experiences extreme, dangerous and unpredictable weather, with over 100 MPH winds, torrential precipitation and sub-freezing temperatures. The most extreme weather occurs on the top 200 feet of the summit. Climate scientists predict for the near term:

- increased wind speed from the ocean resulting from ocean warming,
- increased temperature extremes, and
- increased intensity of rain storms.

While engineers can design structures that MAY withstand these weather events, the equipment and BPA equipment maintenance employees are far more challenging and expensive to protect. Because of the many extreme weather events annually on Marys Peak, the communications equipment requires regular inspection and maintenance. The most dangerous, icy and poorly cleared stretch of Marys Peak Road is above and beyond the West Point Spur Road turnoff which primarily has a northwest and north exposure. The greatest need for communication services in the field occurs during inclement weather throughout the Oregon Coast Range. BPA equipment maintenance employees risk their lives to reach the summit during every extreme weather event when there are no available USFS or County road-clearing equipment for the uppermost sections of the summit road. Equipment failure impacts communication throughout the Oregon Coast Range.

If the BPA equipment maintenance workers cannot reach the Marys Peak summit and the equipment fails to function properly during extreme weather conditions, the lives of BPA

field employees throughout the Oregon Coast Range are also at increased risk due to breakdowns in communication.

The West Point CPI facility on City of Corvallis land is about 3600 feet elevation, while the Marys Peak summit is 4097 feet elevation. West Point is therefore about 500 feet lower than the Marys Peak summit (EA). The weather at West Point is less extreme than that at the Marys Peak summit, the highest point in the Oregon Coast Range. Marys Peak summit is a generator of extreme weather, while West Point does not generate that same atmospheric energy. The West Point communications equipment and facilities are at less risk of failure due to extreme weather conditions (EA). The road to the West Point facility is more accessible during extreme weather with fewer icy, snowy conditions than the road to the Marys Peak summit. As a result, the safety and lives of both Marys Peak maintenance workers and Oregon Coast Range field workers are at less risk with a West Point facility than with a Marys Peak summit facility. As a primary concern of BPA is employee safety, it would be a dangerous error in judgment to discount climate change science to give greater priority for the goal to have direct microwave signals from Marys Peak to Eugene over the direct safety of BPA employees.

Improved BPA Continuity of Communication Service – Since West Point facilities experience fewer outages than those on the summit (EA), the BPA will have a more reliable and stable continuity of service on West Point than they will on the Marys Peak Summit. Consumers Power, which manages the West Point communication facility, has not reported a communication failure due to weather conditions (EA).

Evidence of the wind impact on the summit versus on West Point is revealed with the condition of the trees near the facilities. Tree growth on West Point is lush with little evidence of very strong winds that would damage the trees (as well as BPA equipment). Conversely, at the Marys Peak summit communication site, nearby trees at the forest edge just below the summit experience severe blow down and topping of the trees. (See evidence in *Marys Peak Field Trip* video - <https://vimeo.com/424155237>).

While a BPA interest is to have the Marys Peak communications facility be able to send microwave signals directly to its Eugene facility and the West Point facility is not capable of doing so directly, the BPA has other indirect means to send those microwave signals from West Point facility to Eugene. This extra time, cost and effort with these indirect means seem insignificant when compared to problems related to a breakdown in the continuity of service that could be caused by increased inclement weather at a Marys Peak summit facility.

Of primary concern to BPA is continuity of service, it would be a dangerous error in judgment to discount climate change science to give greater priority for the goal to directly access Eugene through a Marys Peak summit facility over general continuity of service

throughout western Oregon during inclement weather that could be more likely through a West Point facility.

Improved Security – Over 100,000 visitors annually visit the Marys Peak summit. Having a secure site with this many visitors is practically an oxymoron. While the EA indicates a BPA position that security is best in a very public location, the MPA's position is that security is best when the treasure is sequestered from crowds of people. West Point, while visible from the summit, is rarely visited by anyone but maintenance workers and occasional hunters. With functional cameras at the West Point site, just the appearance of a person can indicate a potential problem and signal an alert. In the situation with so many people at the Marys Peak summit, it is difficult to identify a problem in the making.

Reduced BPA Construction Costs – The BPA Environmental Assessment indicates the lowest cost option is to move the BPA communication equipment into the existing Consumers Power communication facility on West Point. This is the only alternative in which no new facility needs to be constructed. In addition, the West Point alternative requires a reduction of 1,500 linear feet in road improvements when compared to alternative 2A and 3C. This reduction in distance results in significant reduction in costs that would be absorbed by BPA customers.

Reduced BPA Maintenance Costs – Reduced equipment maintenance at West Point from fewer weather impacts reduces costs, with fewer maintenance trips and equipment replacement parts and less repair time. CPI has never had to provide emergency maintenance (page 21- Draft EA).

Reduced Public Safety Risks – BPA trucks regularly drive the unpaved road from the Marys Peak parking lot to the summit. This road is hiked by 100,000+ annual visitors. Such high truck usage creates increased risk to public safety and to road deterioration.

Demonstrate responsible environmental stewardship by avoiding or minimizing environmental impacts – The Marys Peak summit (top 200 feet) is home to unique plant, moss and insect communities that attract scientists from all over the world. Avoiding further construction of a new facility best meets this goal by avoiding environmental impacts (page 4 @ 1.4 Purposes). Using the CPI facility at West Point:

- allows restoration of damaged land at the Marys Peak summit
- avoids further damage of sensitive land at the Marys Peak summit
- avoids further introduction of invasive plants during construction at the Marys Peak summit. A study by Harold Zahl reports that monocultures of invasive species is one cause of the current reduction of rare, subalpine meadows (Plant Ecology, 2009, 201:517-529).
- Reduces both permanent and temporary land disturbance by 40% over the Marys Peak summit alternatives with road upgrades (Page 27 @ 2.5.2). The West Point upgrades are not in the highly sensitive ecological zones of the SBSIA.

- Reduces land disturbance from facility construction by 65% over Alternative 3C on Marys Peak summit.
- Reduces the area of human-imposed impervious surfaces on Marys Peak summit. Such surfaces destroy ecosystems, disrupt natural hydrological systems and create ecologically- damaging heat-island effects throughout the year.

Improved Visual Quality - Visual Quality is a goal of the Forest Service in the Special Interest Area. The only alternative that improves visual quality is Alternative 4 on West Point. No new visual blocking buildings or 40-60' tall lattice towers will be built on the summit.

Compliance with Forest Service Management Obligations – The U.S. Forest Service (U.S.F.S.) must approve BPA's choice of an alternative if it involves U.S.F.S. land. The Marys Peak summit is a Scenic Botanical Special Interest Area (SBSIA), a high-level federal protection classification. The Marys Peak SBSIA Management Direction requires the U.S.F.S. to protect the unique plant communities in the vicinity of the BPA communications facilities and to protect the visual quality and recreational resources. Alternative 4 best meets the requirements of the SBSIA Management Direction. Alternative 4 will improve visual quality at the summit by removing the BPA building and towers and reducing the area enclosed by the fence. Alternative 4 avoids further damage to the summit area and allows restoration of previously damaged natural resources. It also avoids introduction of invasive plants during construction as has happened in past construction projects. And, it concentrates existing communications facilities as required by the SBSIA Management Direction.

The MPA concludes that the West Point option (Alternative 4) best meets the BPA's two highest priorities, employee safety and continuity of service. It is the least expensive viable option and the best option for the U.S.F.S. to comply with mandated environmental obligations. It is the best option for the health, safety and enjoyment of the public. We urge the public to contact the BPA to support Alternative 4, siting of the new BPA communication site on West Point, rather than on the Marys Peak summit.

2. **Alternative #2A** – The BPA Communication Facility Alternative 2A does not meet the Siuslaw National Forest Land and Resource Management Plan direction for Management Area 5, specifically section 05-12. This Direction states: *“Concentrate electronic facilities to minimize adverse effects on scenery and other resources in the Special Interest Area of Marys Peak.”* Rebuilding the existing BPA facility does not concentrate electronic facilities and therefore is inconsistent with this management area direction. There is no need to discuss the other problems with it. Alternative #2 must be rejected outright.

Alternative #3C – The BPA Communication Facility Alternative 3C does not meet BPA basic goals for safety, security, reliability and cost-effectiveness. The Marys Peak Alliance does not support the selection of this option. Alternative 3C also creates significant environmental and visual quality damage. Following are some reasons for our non-support.

Land Disturbance – Alternative 3C creates the greatest amount of temporary land

disturbance from construction – 11,350 sq. ft. The MPA believes that such land disturbance will significantly impact the summit ecosystem. The EA does not adequately describe the soils, the geology and the ecosystems of the summit. The summit soils are extremely shallow, fragile and friable. The extremely hard rock capping Marys Peak is coarse-grained diabase/gabbro (NOT fine-grained basalt), and it lies immediately below a very shallow band of soil. It has coarse mineral crystals because it formed below Earth's surface and took thousands of years to cool. Basalt, found lower on the mountain, is fine-grained volcanic rock that cooled quickly in the ocean. The difference between these two rocks have meaning for construction, land disturbance and ecological regeneration. Past contractors have found in every construction case that working with this rock is far more challenging than predicted. It is very hard and far more difficult (think costly) to penetrate than anticipated. The very thin soils do not provide the benefits of a thicker soil for construction purposes. Finally, diabase/gabbro erodes far more slowly than basalt and the creation of soil from this rock takes far more time (think geologic time) than does the soil from basalt. Little is known about the difference in the resulting soil chemistry between the two rock/soil compositions, but it would be prudent that rock introduced to the site should be exactly the same type of diabase/gabbro composition. One thing we do know is that the summit is home to unique plant communities and in some cases, the summit supports an extraordinary expanse of certain native plant species. Many elements contribute to this unique condition and one of the most important elements is the soil and underlying bedrock. Disrupting this soil and introducing a different rock to the site will change the plant communities and their health. Introducing basalt from lower in the mountain (or any other rock type) would not be acceptable, as it could upset the delicate ecological balance. Lastly, no matter what type of rock is brought to the summit of Marys Peak, there is always the risk that it is contaminated with seeds of non-native plants, as occurred previously.

In addition, Alternative 3C disturbs 11,350 sq. ft. of land. For comparison, West Point land disturbance is 3,920 sq. ft. (pg. 28 – 2.5.3 of the EA). The disturbance at West Point is in a much less sensitive area. Plus, most of the disturbance on West Point is NOT in the SCSIA. Also, Alternative 3C requires the greatest amount of site preparation of the three alternatives. (Pg. 28, 2.5.4, paragraph 1).

The MPA categorically disagrees with the BPA conclusions on page 42 of the EA that the impact on the geology and soils are low. The BPA may come to that conclusion because of the footprint. The MPA believes that the summit is the most important feature of the mountain and that the BPA underestimates or misunderstands the geology and soils to the point that it cannot measure the impacts accurately.

The MPA finds the BPA analysis on page 43 of the EA that removal of the existing BPA site has a low impact upon vegetation to be surprising and confounding. If this process is correctly performed it will have a high impact upon vegetation by eliminating the site and regenerating a native environment.

Construction Impact – Alternative 3C requires 11 construction workers, the most of any alternative. This one factor results in greater impacts and costs. To select the costliest project, which has the greatest impacts is not logical, since the BPA has other options to connect with Eugene.

3' Thick Concrete Tower Foundation - The 3' thick concrete tower foundation set on gravel will create significant further disturbance to an already disturbed ecosystem. This “permanent” disturbance will impact the ecosystem for many generations into the future and will have a domino effect on the adjacent downhill ecosystems due to stormwater runoff, heat island impacts from the concrete and the increased building footprint. The additional concrete pad for the new propane tank will create the same impacts. As previously stated, sawing the diabase gabbro will be more difficult, costly and time-consuming than anticipated by planners who are expecting basalt.

Visual Quality - The 60' tall steel-latticed tower will significantly reduce the visual quality for the summit. It will essentially block more of the natural 360-degree view, which is unique in the Oregon Coast Range. It will also create another hideous, industrial edifice looming over this most important natural feature for the mid-Willamette Valley which the BPA is intended to serve. This element alone should be reason to select Alternative 4 on West Point.

The MPA is in disagreement with the BPA stating on page 46:

- Low beneficial effect from removal of the existing BPA communication site and revegetation
- No impacts for viewers in the Willamette Valley or in the Coast Range

The MPA strongly believes that removal of the existing BPA communication site and revegetation will have HIGH beneficial effects. This site is at the pinnacle of the summit. This site is unique and restoring a natural environment there will be of incalculable value from both a visual and environmental impact. And, while removing the site will not be noticeable by someone in the Willamette Valley, one can view the peak from close sites within the Coast Range and see the difference.

Finally, the MPA is puzzled why in the same table on page 46, under alternative 3C, it states: *Low beneficial effect from removal of the existing BPA communication site and revegetation*, while under alternative 4, it states: *Moderate beneficial effect from removal of the existing BPA communications site and revegetation*. The same work is necessary to remove the BPA communication site in both instances.

Cultural Resources – Declaring the BPA communications site NRHP listing does not seem to comply with the spirit of historic preservation. A non-descript, boring building and wooden pole, which destroyed the beauty of this unique mountain summit to serve as the least costly way to provide communications for the BPA is only valuable to tell us that it was a mistake. To honor this communication site which destroyed the beauty and cultural intents

for this land with historic preservation status is an insult to all of the generations of people who have loved and cherished this mountain. NRHP status for this site is not supported by the MPA.

Wildlife Habitat – No mention of Parker Creek is listed in this section. Parker Creek has many aquatic species and is located well within 1 mile of the current BPA communications site. In fact, it is the highest source of water in the Oregon Coast Range. The Haddock's Caddisfly has been identified in this creek on Marys Peak. The source changes with the seasons. During winter it starts over halfway up the Marys Peak summit road above the parking lot.

3. Omissions and Incorrect Statements in BPA Communications Site Project Environmental Assessment – Following are suggested changes to be made for the BPA final EA that go beyond our above comments on the site alternatives.

Impacts of Climate Change on the Site Choice – Climate change is probably the most existential crisis impacting our culture and its infrastructure. The EA does not address the impacts of increased, wind, rain storms, ice and heat will have on the site selection or the construction costs.

Parker and Yaqo'n Creeks – Maps 3-1 and 3-2 on pages 90 and 91 are not mapped with two important creeks that are sourced near summit and the West Point communication sites. Since creeks are graphically represented in the map legends and water sources within one mile of the project area are required to be represented, these two creeks need to be added to the maps and addressed. Parker Creek is sourced near the crossing of the Marys Peak summit road and the summit trail, just to the NE of the BPA Communication Site on the summit. It is the highest sourced waterway in the Oregon Coast Mountains. It flows to the North Alsea River and ultimately to Waldport. Yaqo'n Creek is sourced immediately to the west of the West Point site. It flows to Big Elk Creek and the Yaquina River and ultimately to Newport. The spring sources during the wet seasons are higher in elevation than USGS maps indicate.

Intersection of Summit and Meadow Edge Trails – The text on page 121 and photo on page 122 are inaccurately identified with potential resulting detriments. This is NOT the intersection of two legal USFS trails. The trail identified as Summit Trail in this section is an ILLEGAL trail that the USFS has tried to close. It is dangerous (slippery) for hikers/bikers and is causing serious erosion in both the meadow and the forest. By legitimizing this illegal trail, the BPA is encouraging the public to feel entitled to use the trail. Please remove this identification from the EA.

Comment 20-01: Marys Peak Alliance

The Marys Peak Alliance of AFRANA:

1. Supports Alternative 4, the Marys Peak West Point Spur for the site of the prospective Marys Peak BPA Communications site.
2. Does not support Alternative 2A or 3C, which are to be located on the Marys Peak summit.
3. Recommends correcting omissions or incorrect statements for the final Environmental Assessment (EA). Details are presented below.

Response to Comment 20-01 – Comment acknowledged.

BPA has made some revisions to the EA in response to comments, as noted in this appendix. Bolded, italicized and orange colored font is used for added or new text and strikethrough font is used for deleted text in those sections of the EA that were updated.

Comment 20-02: Marys Peak Alliance

1. Support for Alternative Option #4 - West Point

The Marys Peak Alliance of AFRANA (MPA) recommends Alternative 4: West Point Spur co-locate on CPI site. Following are reasons for this recommendation.

Improved BPA Employee Safety – The Marys Peak summit experiences extreme, dangerous and unpredictable weather, with over 100 MPH winds, torrential precipitation and sub-freezing temperatures. The most extreme weather occurs on the top 200 feet of the summit. Climate scientists predict for the near term:

- increased wind speed from the ocean resulting from ocean warming,
- increased temperature extremes, and
- increased intensity of rain storms.

While engineers can design structures that MAY withstand these weather events, the equipment and BPA equipment maintenance employees are far more challenging and expensive to protect. Because of the many extreme weather events annually on Marys Peak, the communications equipment requires regular inspection and maintenance. The most dangerous, icy and poorly cleared stretch of Marys Peak Road is above and beyond the West Point Spur Road turnoff which primarily has a northwest and north exposure. The greatest need for communication services in the field occurs during inclement weather throughout the Oregon Coast Range. BPA equipment maintenance employees risk their lives to reach the summit during every extreme weather event when there are no available USFS or County road-clearing equipment for the uppermost sections of the summit road. Equipment failure impacts communication throughout the Oregon Coast Range.

If the BPA equipment maintenance workers cannot reach the Marys Peak summit and the equipment fails to function properly during extreme weather conditions, the lives of BPA field employees throughout the Oregon Coast Range are also at increased risk due to breakdowns in communication.

Response to Comment 20-02 – The purpose of the Project, including Alternative 2A and Alternative 3C, is to install equipment that would require less maintenance during extreme weather events, including mounting communications equipment on a stable steel-lattice communications structure in place of the existing wood-pole structure, which is not very stable. See the response to Comment 05-02 for more information on BPA employee safety.

Comment 20-03: Marys Peak Alliance

The West Point CPI facility on City of Corvallis land is about 3600 feet elevation, while the Marys Peak summit is 4097 feet elevation. West Point is therefore about 500 feet lower than the Marys Peak summit (EA). The weather at West Point is less extreme than that at the Marys Peak summit, the highest point in the Oregon Coast Range. Marys Peak summit is a generator of extreme weather, while West Point does not generate that same atmospheric energy. The West Point communications equipment and facilities are at less risk of failure due to extreme weather conditions (EA). The road to the West Point facility is more accessible during extreme weather

with fewer icy, snowy conditions than the road to the Marys Peak summit. As a result, the safety and lives of both Marys Peak maintenance workers and Oregon Coast Range field workers are at less risk with a West Point facility than with a Marys Peak summit facility. As a primary concern of BPA is employee safety, it would be a dangerous error in judgment to discount climate change science to give greater priority for the goal to have direct microwave signals from Marys Peak to Eugene over the direct safety of BPA employees.

Response to Comment 20-03 – As indicated in the EA, the weather and road conditions at West Point Spur would make it easier to access West Point Spur than the Marys Peak summit during severe weather. If the communications equipment did not fail during severe weather conditions, there would be no reason to access the summit. If communications remain functional, the best communication signal would be available under Alternative 2A or Alternative 3C at Marys Peak, compared to Alternative 4 at West Point Spur. See the response to Comment 05-02 for more information on BPA employee safety.

Comment 20-04: Marys Peak Alliance

Improved BPA Continuity of Communication Service – Since West Point facilities experience fewer outages than those on the summit (EA), the BPA will have a more reliable and stable continuity of service on West Point than they will on the Marys Peak Summit. Consumers Power, which manages the West Point communication facility, has not reported a communication failure due to weather conditions (EA).

Response to Comment 20-04 – At the CPI communications site at West Point Spur, the lack of communications failures is because the communications equipment is mounted securely on a stable steel-lattice communications structure. Also, their communication system continues to operate during electrical outages using their backup power system.

At the Marys Peak USFS communications site, the communications equipment is also mounted on stable steel-lattice structures, and also continues to operate during electrical outages using their backup power system. At the Marys Peak BPA communications site, the more frequent communications failures are mainly due to the BPA microwave dish being mounted on an unstable wood pole that sometimes shifts out of alignment due to high winds. Under all action alternatives, the new BPA microwave dish and equipment would be mounted securely on a stable steel-lattice structure resulting in a more reliable communications system. In addition, during electrical outages, the system would continue to operate using the backup power system. It is thus expected that implementation of Alternative 2A or Alternative 3C at the Marys Peak summit would result in comparable reliability and service continuity compared to the CPI site.

Comment 20-05: Marys Peak Alliance

Evidence of the wind impact on the summit versus on West Point is revealed with the condition of the trees near the facilities. Tree growth on West Point is lush with little evidence of very strong winds that would damage the trees (as well as BPA equipment). Conversely, at the Marys Peak summit communication site, nearby trees at the forest edge just below the summit experience severe blow down and topping of the trees. (See evidence in *Marys Peak Field Trip* video - <https://vimeo.com/424155237>).

Response to Comment 20-05 – Comment acknowledged.

Comment 20-06: Marys Peak Alliance

While a BPA interest is to have the Marys Peak communications facility be able to send microwave signals directly to its Eugene facility and the West Point facility is not capable of doing so directly, the BPA has other indirect means to send those microwave signals from West Point facility to Eugene. This extra time, cost and effort with these indirect means seem insignificant when compared to problems related to a breakdown in the continuity of service that could be caused by increased inclement weather at a Marys Peak summit facility.

Response to Comment 20-06 – BPA is not considering an action alternative that would send microwave signals to a BPA facility in Eugene, Oregon, from either the Marys Peak summit or the West Point Spur. There is no need to send microwave communications, either directly or indirectly, to a BPA facility located in or near Eugene. The microwave beam paths, as shown in Map 2-1 of Section 2.2.1, would transmit directly between the Marys Peak summit and the BPA Albany Substation (Alternative 2A or Alternative 3C), or directly between the CPI communications site at West Point Spur and the BPA Prospect Hill communications site (Alternative 4). Because under all action alternatives, direct microwave beam path lines of sights are available, there is no need to consider indirect microwave communications methods or equipment (e.g. passive repeaters) for this Project.

Comment 20-07: Marys Peak Alliance

Of primary concern to BPA is continuity of service, it would be a dangerous error in judgment to discount climate change science to give greater priority for the goal to directly access Eugene through a Marys Peak summit facility over general continuity of service throughout western Oregon during inclement weather that could be more likely through a West Point facility.

Response to Comment 20-07 – Comment acknowledged. Information discussing the effects of climate change on the Project was added to Section 3.11.2 of the EA.

Comment 20-08: Marys Peak Alliance

Improved Security – Over 100,000 visitors annually visit the Marys Peak summit. Having a secure site with this many visitors is practically an oxymoron. While the EA indicates a BPA position that security is best in a very public location, the MPA's position is that security is best when the treasure is sequestered from crowds of people. West Point, while visible from the summit, is rarely visited by anyone but maintenance workers and occasional hunters. With functional cameras at the West Point site, just the appearance of a person can indicate a potential problem and signal an alert. In the situation with so many people at the Marys Peak summit, it is difficult to identify a problem in the making.

Response to Comment 20-08 – See the response to Comment 13-07 regarding the security of the communications site at the Marys Peak summit compared to communications site at West Point Spur. Functional security monitoring equipment would document unauthorized entrances inside the chain link fence at the Marys Peak communications site.

Comment 20-09: Marys Peak Alliance

Reduced BPA Construction Costs – The BPA Environmental Assessment indicates the lowest cost option is to move the BPA communication equipment into the existing Consumers Power communication facility on West Point. This is the only alternative in which no new facility needs to be constructed. In addition, the West Point alternative requires a reduction of 1,500 linear feet in road improvements when compared to alternative 2A and 3C. This reduction in distance results in significant reduction in costs that would be absorbed by BPA customers.

Response to Comment 20-09 – Comment acknowledged.

Comment 20-10: Marys Peak Alliance

Reduced BPA Maintenance Costs – Reduced equipment maintenance at West Point from fewer weather impacts reduces costs, with fewer maintenance trips and equipment replacement parts and less repair time. CPI has never had to provide emergency maintenance (page 21- Draft EA).

Response to Comment 20-10 – Maintenance costs would likely be comparable for all action alternatives.

Comment 20-11: Marys Peak Alliance

Reduced Public Safety Risks – BPA trucks regularly drive the unpaved road from the Marys Peak parking lot to the summit. This road is hiked by 100,000+ annual visitors. Such high truck usage creates increased risk to public safety and to road deterioration.

Response to Comment 20-11 – Comment acknowledged.

Comment 20-12: Marys Peak Alliance

Demonstrate responsible environmental stewardship by avoiding or minimizing environmental impacts – The Marys Peak summit (top 200 feet) is home to unique plant, moss and insect communities that attract scientists from all over the world. Avoiding further construction of a new facility best meets this goal by avoiding environmental impacts (page 4 @ 1.4 Purposes). Using the CPI facility at West Point:

- allows restoration of damaged land at the Marys Peak summit
- avoids further damage of sensitive land at the Marys Peak summit
- avoids further introduction of invasive plants during construction at the Marys Peak summit. A study by Harold Zahl reports that monocultures of invasive species is one cause of the current reduction of rare, subalpine meadows (Plant Ecology, 2009, 201:517-529).
- Reduces both permanent and temporary land disturbance by 40% over the Marys Peak summit alternatives with road upgrades (Page 27 @ 2.5.2). The West Point upgrades are not in the highly sensitive ecological zones of the SBSIA.
- Reduces land disturbance from facility construction by 65% over Alternative 3C on Marys Peak summit.
- Reduces the area of human-imposed impervious surfaces on Marys Peak summit. Such surfaces destroy ecosystems, disrupt natural hydrological systems and create ecologically- damaging heat-island effects throughout the year.

Response to Comment 20-12 – Comment acknowledged.

Comment 20-13: Marys Peak Alliance

Improved Visual Quality - Visual Quality is a goal of the Forest Service in the Special Interest Area. The only alternative that improves visual quality is Alternative 4 on West Point. No new visual blocking buildings or 40-60' tall lattice towers will be built on the summit.

Response to Comment 20-13 – Comment acknowledged.

Comment 20-14: Marys Peak Alliance

Compliance with Forest Service Management Obligations – The U.S. Forest Service (U.S.F.S.) must approve BPA's choice of an alternative if it involves U.S.F.S. land. The Marys Peak summit is a Scenic Botanical Special Interest Area (SBSIA), a high-level federal protection classification. The Marys Peak SBSIA Management Direction requires the U.S.F.S. to protect the unique plant communities in the vicinity of the BPA communications facilities and to protect the visual quality and recreational resources. Alternative 4 best meets the requirements of the SBSIA Management Direction.

USFS provided the following response to Comment 20-14 – We considered Forest Plan consistency when reviewing the various alternatives for this project. Please see Section 4.4 in this EA for information about consistency with USFS planning documents.

Comment 20-15: Marys Peak Alliance

Alternative 4 will improve visual quality at the summit by removing the BPA building and towers and reducing the area enclosed by the fence. Alternative 4 avoids further damage to the summit area and allows restoration of previously damaged natural resources. It also avoids introduction of invasive plants during construction as has happened in past construction projects. And, it concentrates existing communications facilities as required by the SBSIA Management Direction.

Response to Comment 20-15 – Comment acknowledged.

Comment 20-16: Marys Peak Alliance

The MPA concludes that the West Point option (Alternative 4) best meets the BPA’s two highest priorities, employee safety and continuity of service. It is the least expensive viable option and the best option for the U.S.F.S. to comply with mandated environmental obligations. It is the best option for the health, safety and enjoyment of the public. We urge the public to contact the BPA to support Alternative 4, siting of the new BPA communication site on West Point, rather than on the Marys Peak summit.

Response to Comment 20-16 – Comment acknowledged.

Comment 20-17: Marys Peak Alliance

2. Alternative #2A – The BPA Communication Facility Alternative 2A does not meet the Siuslaw National Forest Land and Resource Management Plan direction for Management Area 5, specifically section 05-12. This Direction states: *“Concentrate electronic facilities to minimize adverse effects on scenery and other resources in the Special Interest Area of Marys Peak.”* Rebuilding the existing BPA facility does not concentrate electronic facilities and therefore is inconsistent with this management area direction. There is no need to discuss the other problems with it. Alternative #2 must be rejected outright.

Response to Comment 20-17 – See response to Comment 20-14.

Comment 20-18: Marys Peak Alliance

Alternative #3C – The BPA Communication Facility Alternative 3C does not meet BPA basic goals for safety, security, reliability and cost-effectiveness. The Marys Peak Alliance does not support the selection of this option.

Response to Comment 20-18 – As discussed in the EA and elsewhere in this appendix, it is expected that the goals of safety, security, and reliability would be met by Alternative 3C as follows:

- **Safety:** The safety of the public during construction, maintenance, and operation would be a focus of BPA, but it is likely that Alternative 4 would be safer for the general public who visit Marys Peak and hike to the summit.
- **Safety:** Please see the response to Comment 05-02 for information on the safety of BPA staff conducting communications site maintenance and the safety of BPA linemen working on the transmission system.
- **Security:** See the responses to Comment 13-07 and Comment 15-04; while an intentional destructive act recently occurred at the communications site at the Marys Peak summit, the presence of functional security monitoring equipment and physical barriers to prevent unauthorized entry (gate at the parking lot and the chain link fence surrounding the communications site) would help deter theft, sabotage or vandalism.
- **Reliability** of the BPA transmission system is dependent on the effectiveness of the VHF communications system because it is necessary for real-time communications between BPA dispatchers and BPA linemen working on the transmission system. BPA would have some decreased communication capabilities in some areas but would increase in other areas if the communications site was moved from the Marys Peak summit to CPI at West Point Spur. BPA may or may not be able to connect to some parts of the Eugene region’s communications network using signals to and from other BPA communications sites.
- **Cost effectiveness:** Each of the action alternatives would be cost effective to varying degrees, but it is acknowledged that Alternative 4 would be the most cost effective of the three action alternatives in terms of construction costs and mitigation.

Comment 20-19: Marys Peak Alliance

Alternative 3C also creates significant environmental and visual quality damage. Following are some reasons for our non-support.

Response to Comment 20-19 – Although it is acknowledged that Alternative 3C would result in environmental and visual quality impacts, as discussed in the EA, none of these impacts would be considered significant within the meaning of NEPA. In addition, the mitigation measures identified in the EA would help decrease impacts.

Comment 20-20: Marys Peak Alliance

Land Disturbance – Alternative 3C creates the greatest amount of temporary land disturbance from construction – 11,350 sq. ft. The MPA believes that such land disturbance will significantly impact the summit ecosystem. The EA does not adequately describe the soils, the geology and the ecosystems of the summit. The summit soils are extremely shallow, fragile and friable. The extremely hard rock capping Marys Peak is coarse-grained diabase/gabbro (NOT fine-grained basalt), and it lies immediately below a very shallow band of soil. It has coarse mineral crystals because it formed below Earth’s surface and took thousands of years to cool. Basalt, found lower on the mountain, is fine-grained volcanic rock that cooled quickly in the ocean. The difference between these two rocks have meaning for construction, land disturbance and ecological regeneration. Past contractors have found in every construction case that working with this rock is far more challenging than predicted. It is very hard and far more difficult (think costly) to penetrate than anticipated. The very thin soils do not provide the benefits of a thicker soil for construction purposes. Finally, diabase/gabbro erodes far more slowly than basalt and the creation of soil from this rock takes far more time (think geologic time) than does the soil from basalt. Little is known about the difference in the resulting soil chemistry between the two rock/soil compositions, but it would be prudent that rock introduced to the site should be exactly the same type of diabase/gabbro composition.

Response to Comment 20-20 – Revisions have been made in the EA in Section 3.4.2 to include more detailed information about the existing geology and soils at Marys Peak, as suggested by the commenter. This includes additional description of the previously-disturbed areas within the existing communications site fence (based on geotechnical surveys completed by a BPA geologist in 2016) as well as the relatively undisturbed areas surrounding the communications site.

Under both Alternative 2A and Alternative 3C, the majority of impacts to geology and soils would occur within previously disturbed areas (i.e., within the existing communications site fence and along the access road where water bars would be installed). Within the existing communications site, the area was largely cleared of vegetation, excavated, graded flat, and/or covered in fill material during previous site development.

To avoid or minimize impacts to geology and soils, mitigation measures listed in Section 3.4.5 of the EA would be implemented. With mitigation measures in place, there would be no indirect impacts to geology and soils surrounding construction areas. Adding water bars to the access road to Marys Peak summit would result in a small amount of permanent impacts to geology and soils along the access road. Ultimately these water bars would help prevent future impacts to geology and soils from water runoff and erosion. For these reasons, there would be a low temporary and low permanent impacts to geology and soils as described in Section 3.4.4.

Comment 20-21: Marys Peak Alliance

One thing we do know is that the summit is home to unique plant communities and in some cases, the summit supports an extraordinary expanse of certain native plant species. Many elements contribute to this unique condition and one of the most important elements is the soil and underlying bedrock. Disrupting this soil and introducing a different rock to the site will change the plant communities and their health. Introducing basalt from lower in the mountain (or any other rock type) would not be acceptable, as it could upset the delicate ecological balance. Lastly, no matter what type of rock is brought to the summit of Marys Peak, there is always the risk that it is contaminated with seeds of non-native plants, as occurred previously.

Response to Comment 20-21 – Two mitigation measures were added to Sections 3.4.5 (Geology and Soils) and 3.5.5 (Vegetation) in response to this comment.

- *Lay down tarp(s) before depositing temporary gravel piles on the tarps to ensure that the gravel can be lifted relatively easily after use, and not become embedded in vegetated areas.*
- *Limit the quantity of gravel brought to the Marys Peak summit for construction purposes, to the extent possible*

As a result, the vehicle parking areas within the chain link fence at the summit for Alternative 2A and Alternative 3C would not receive new gravel, which is traditionally done with similar projects to improve the parking surface area near communications buildings.

As part of construction under Alternative 2A or Alternative 3C, it would be necessary to bring some gravel to the summit to create stable, flat construction surfaces for concrete pads and footings. These installation areas would largely be located underground, under concrete pads or under equipment, and largely out of sight of nearby recreationalists. Under Alternative 2A, gravel would be brought to the summit to serve as a level surface for concrete footings for the steel-lattice structure and the propane tank. Additionally, under Alternative 3C, gravel would be needed under the concrete slab for the new communications building addition adjacent to the existing USFS building.

Gravel used for construction purposes and for access road improvements would be obtained from a local quarry that would be approved by the SNF botanist prior to installation, and that ideally is ODA-certified weed-free. Rock and gravel could be pre-treated for weeds, if needed, before bringing it to Project work areas to ensure no weed propagules are brought to the site with the gravel. The need for pre-treatment of gravel would be up to the discretion of the SNF botanist.

As a result of this comment and others received on this topic, an existing mitigation measure in Section 3.5.5 (Vegetation) was revised as follows: *Obtain rock and gravel used for road surfacing, fill material, and other uses from a quarry that is approved by the SNF botanist prior to installation on Marys Peak, and ideally is local and ODA-certified weed-free.*

Comment 20-22: Marys Peak Alliance

In addition, Alternative 3C disturbs 11, 350 sq. ft. of land. For comparison, West Point land disturbance is 3,920 sq. ft. (pg. 28 – 2.5.3 of the EA). The disturbance at West Point is in a much less sensitive area. Plus, most of the disturbance on West Point is NOT in the SCSIA [SBSIA].

Response to Comment 20-22 – The access road used to access the CPI communications site (NF-112) is about 0.37 miles long, and about half of its length is on SNF lands (about 1,000 feet) within the SBSIA. The remainder of the access road (about 990 feet), and the CPI communications site are located on City of Corvallis lands, which are not within the SBSIA (See Figure F-4, above). As indicated in the EA, overall the lands that would be disturbed under Alternative 2A or Alternative 3C are considered more sensitive than the lands that would be disturbed under Alternative 4.

Comment 20-23: Marys Peak Alliance

Also, Alternative 3C requires the greatest amount of site preparation of the three alternatives. (Pg. 28, 2.5.4, paragraph 1).

The MPA categorically disagrees with the BPA conclusions on page 42 of the EA that the impact on the geology and soils are low. The BPA may come to that conclusion because of the footprint. The MPA believes that the summit is the most important feature of the mountain and that the BPA underestimates or misunderstands the geology and soils to the point that it cannot measure the impacts accurately.

Response to Comment 20-23 – See response to Comment 20-20.

Comment 20-24: Marys Peak Alliance

The MPA finds the BPA analysis on page 43 of the EA that removal of the existing BPA site has a low impact upon vegetation to be surprising and confounding. If this process is correctly performed it will have a high impact upon vegetation by eliminating the site and regenerating a native environment.

Response to Comment 20-24 – Once the vegetation is reestablished, meeting the performance objectives of the Project Revegetation Plan, there would be a low beneficial effect. It could be more beneficial depending on the success of the revegetation and the opinion of observers. It may look quite different from the surrounding vegetation for some time before it blends into the surroundings. Accordingly, it is reasonable to identify this as a low beneficial effect since restoration is challenging, especially in this sensitive location with extreme weather.

Comment 20-25: Marys Peak Alliance

Construction Impact – Alternative 3C requires 11 construction workers, the most of any alternative. This one factor results in greater impacts and costs. To select the costliest project, which has the greatest impacts is not logical, since the BPA has other options to connect with Eugene.

Response to Comment 20-25 – BPA considers all the factors involved in selection of an alternative and does not always choose the lowest cost alternative. Other factors besides cost that would be considered are listed in Table 2-5 in Section 2.11 of this EA.

Comment 20-26: Marys Peak Alliance

3' Thick Concrete Tower Foundation - The 3' thick concrete tower foundation set on gravel will create significant further disturbance to an already disturbed ecosystem. This “permanent” disturbance will impact the ecosystem for many generations into the future and will have a domino effect on the adjacent downhill ecosystems due to stormwater runoff, heat island impacts from the concrete and the increased building footprint. The additional concrete pad for the new propane tank will create the same impacts. As previously stated, sawing the diabase gabbro will be more difficult, costly and time-consuming than anticipated by planners who are expecting basalt.

Response to Comment 20-26 – Under Alternative 3C, the new building addition at 325 square feet would be about the same size as the existing BPA communications building at 320 square feet (see Table 2-4 in Section 2.5.7). Therefore the building footprint would only increase by about 5 square feet. The footings for the BPA replacement propane tank would be about the same size as the footings for the existing BPA propane tank.

Under Alternative 3C, the concrete for the footing of the steel-lattice communications structure would cover up to an additional 625 square feet (see Table 2-3 in Section 2.5.5). The additional stormwater runoff and heat generated from this concrete footing could impact vegetation immediately adjacent to the footing. The vegetation surrounding the footing would act as a vegetative buffer to disperse the stormwater and minimize downhill flow. This is expected to prevent or minimize impacts to downhill ecosystems. Air flow at the summit would likely disperse any heat generated by the concrete footing, and would not be expected to impact downhill ecosystems.

Comment 20-27: Marys Peak Alliance

Visual Quality - The 60' tall steel-latticed tower will significantly reduce the visual quality for the summit. It will essentially block more of the natural 360-degree view, which is unique in the Oregon Coast Range. It will also create another hideous, industrial edifice looming over this most important natural feature for the mid-Willamette Valley which the BPA is intended to serve. This element alone should be reason to select Alternative 4 on West Point.

Response to Comment 20-27 – Comment acknowledged. The 360-degree panoramic view from the top of Marys Peak is currently disrupted by the existing communications site. Under both Alternative 2A and

Alternative 3C, the new steel-lattice communications structure would further disrupt the 360-degree panoramic view from the top of Marys Peak.

The scenic resources study for the Project analyzed the potential impacts to scenic resources from various key viewing areas, using the methodology used by the USFS to manage lands for scenic resource values (Section 3.7.1). The scenic resources study concluded that, overall, implementation of Alternative 3C would result in moderate impacts to scenic resources, mainly due to the construction of the 60-foot tall steel-lattice communications structure. On the other hand, the consolidation of communications infrastructure under this alternative would result in improvements to scenic quality on Marys Peak, limiting the extent to which the communications infrastructure blocks views to the west. However site-specific improvements under Alternative 3C are not expected to improve overall scenic integrity of the Marys Peak summit because the proposed BPA and existing USFS infrastructure would continue to be a dominant element of the landscape.

Comment 20-28: Marys Peak Alliance

The MPA is in disagreement with the BPA stating on page 46:

- Low beneficial effect from removal of the existing BPA communication site and revegetation
- No impacts for viewers in the Willamette Valley or in the Coast Range

The MPA strongly believes that removal of the existing BPA communication site and revegetation will have HIGH beneficial effects. This site is at the pinnacle of the summit. This site is unique and restoring a natural environment there will be of incalculable value from both a visual and environmental impact. And, while removing the site will not be noticeable by someone in the Willamette Valley, one can view the peak from close sites within the Coast Range and see the difference.

Response to Comment 20-28 – The scenic resources study analyzed the potential effect of removing the existing BPA communications site and revegetation, using the methodology used by the USFS to manage lands for scenic resource values (Section 3.7.1). Based on this analysis, removal of the site and revegetation would have low beneficial effects, especially for viewers at the summit. This beneficial effect was not considered higher because the USFS communications site would remain and still contribute to the visual environment. The scenic resources study analyzed the impact of various activities from specific key viewing areas in the Coast Range where people are likely to have views of Marys Peak summit. There may be other areas in the Coast Range, as you state, where the view would improve if the existing communications site was removed.

Comment 20-29: Marys Peak Alliance

Finally, the MPA is puzzled why in the same table on page 46, under alternative 3C, it states: **Low beneficial effect from removal of the existing BPA communication site and revegetation**, while under alternative 4, it states: **Moderate beneficial effect from removal of the existing BPA communications site and revegetation**. The same work is necessary to remove the BPA communication site in both instances.

Response to Comment 20-29 – Alternative 4 would have more beneficial effects to visual resources than Alternative 3C because of the following:

- A 60-foot steel-lattice communications structure would not be constructed on the Marys Peak summit
- The addition to the USFS communications building at the Marys Peak summit would not be constructed
- The existing propane tank at the Marys Peak summit communications site would be removed

Under Alternative 3C, the beneficial effects to visual resources that would result from removal of the existing BPA communications site and consolidation of communications infrastructure into a smaller footprint would not have as large a beneficial effect as under Alternative 4 because of the following:

- There would be more “visual clutter” on the summit than under Alternative 4

- The height of the new BPA steel-lattice communications structure would have the potential to be seen from other locations around Marys Peak, such as the public parking lot and Marys Peak Road, because the structure would appear taller than surrounding conifers

As a result, Alternative 4 would improve scenic quality of the Marys Peak summit by reducing scale dominance and creating a more organized appearance of the communications infrastructure. This would result in moderate beneficial visual resources effects, compared to low beneficial visual resources effects under Alternative 3C.

Comment 20-30: Marys Peak Alliance

Cultural Resources – Declaring the BPA communications site NRHP listing does not seem to comply with the spirit of historic preservation. A non-descript, boring building and wooden pole, which destroyed the beauty of this unique mountain summit to serve as the least costly way to provide communications for the BPA is only valuable to tell us that it was a mistake. To honor this communication site which destroyed the beauty and cultural intents for this land with historic preservation status is an insult to all of the generations of people who have loved and cherished this mountain. NRHP status for this site is not supported by the MPA.

Response to Comment 20-30 – As a federal agency, BPA is required to consult with the State Historic Preservation Office (SHPO) and interested and affected tribes on the effect of BPA actions on cultural resources. Mary's Peak was evaluated for eligibility for listing in the National Register of Historic Places (NRHP) as part of a study documented in BPA's Microwave Radio Stations Historic Resources Technical Report (AECOM 2019). This study evaluated all BPA microwave radio stations built before 1975. The Oregon SHPO concurred with the determination of eligible for listing in the NRHP.

As indicated in Section 3.8.2 of the EA, the Marys Peak Microwave Radio Station (Marys Peak BPA communications site) is eligible for inclusion in the NRHP under Criterion A for its importance in the areas of Communications and Industry (Kramer 2012; AECOM 2019; NPS 1997). The communications site became a key component of BPA's early microwave communications network, facilitated grid operations, and supported business and industrial development throughout the region, particularly the Corvallis, Oregon, area. The site form documenting the communications site is posted on the Project website at (www.bpa.gov/goto/MarysPeak).

Subsequent alterations to the communications site are minimal and do not diminish overall integrity, based on the guidelines provided in the NRHP Multiple Property Documentation Form (MPDF) and additional integrity considerations provided in the BPA Microwave Radio Stations Historic Resources Technical Report (Kramer 2012; AECOM 2019). The communications site retains integrity of location, design, setting, materials, workmanship, feeling, and association and meets the minimum eligibility requirements in the BPA MPDF. The original antenna tower (wood monopole) is no longer present, but was replaced in-kind. The site continues to represent its historic spatial organization (design) and expression of historic function and technology (workmanship), which in addition to location are the key aspects of integrity. The antenna tower maintains line-of-sight with associated microwave communications sites. The recommended NRHP Period of Significance for the Marys Peak Microwave Radio Station is 1961, the construction date, to 1974, the end of BPA's Transmission System Expansion Period of Significance for historic resources as outlined in the MPDF (Kramer 2012; AECOM 2019).

Comment 20-31: Marys Peak Alliance

Wildlife Habitat – No mention of Parker Creek is listed in this section. Parker Creek has many aquatic species and is located well within 1 mile of the current BPA communications site. In fact, it is the highest source of water in the Oregon Coast Range. The Haddock's Caddisfly has been identified in this creek on Marys Peak. The source changes with the seasons. During winter it starts over halfway up the Marys Peak summit road above the parking lot.

Response to Comment 20-31 – Section 3.6.2 of this EA has been updated with information about aquatic wildlife species at Marys Peak, Parker Creek and other streams and creeks, and Map 3-1 and Map 3-2 were updated.

Comment 20-32: Marys Peak Alliance

3. Omissions and Incorrect Statements in BPA Communications Site Project Environmental Assessment –

Following are suggested changes to be made for the BPA final EA that go beyond our above comments on the site alternatives.

Impacts of Climate Change on the Site Choice – Climate change is probably the most existential crisis impacting our culture and its infrastructure. The EA does not address the impacts of increased, wind, rain storms, ice and heat will have on the site selection or the construction costs.

Response to Comment 20-32 – On February 18, 2021, the Council on Environmental Quality (CEQ) published a Federal Register notice rescinding the “Draft National Environmental Policy Act Guidance on Considering Greenhouse Gas Emissions” issued on June 26, 2019. Therefore, BPA is now following the more comprehensive “Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews” issued on August 5, 2016 (U.S. CEQ 2016).

This guidance states: Climate change effects on the environment and on the proposed project should be considered in the analysis of a project considered vulnerable to the effects of climate change such as increasing sea level, drought, high intensity precipitation events, increased fire risk, or ecological change. In such cases, a NEPA review will provide relevant information that agencies can use to consider in the initial project design, as well as alternatives with preferable overall environmental outcomes and improved resilience to climate impacts.

To comply with this guidance, information discussing the effects of climate change on the Project was added to Section 3.11.2 of the EA. The new text states climate change could result in an increase in the severity of storms; the amount, type and timing of precipitation; snowpack; more extremes in temperature; fire danger; and changes to the habitats and life cycle of some plants and animals, their ability to adapt to changes, and their viability. The cost of construction of action alternatives would not differ based on climate change considerations. It is not certain how and when climate change could affect operations of the communications site, but more extreme weather would make maintenance more challenging in the future.

Because GHG emissions contribute to climate change, Section 3.11.4 of the EA considers the impacts on global greenhouse gas concentrations that would result from implementation of action alternatives. Although all levels of GHG emissions are substantial, the incremental contribution of any of the action alternatives to cumulative impacts on global GHG concentrations would be low.

Comment 20-33: Marys Peak Alliance

Parker and Yaqo’n Creeks – Maps 3-1 and 3-2 on pages 90 and 91 are not mapped with two important creeks that are sourced near summit and the West Point communication sites. Since creeks are graphically represented in the map legends and water sources within one mile of the project area are required to be represented, these two creeks need to be added to the maps and addressed. Parker Creek is sourced near the crossing of the Marys Peak summit road and the summit trail, just to the NE of the BPA Communication Site on the summit. It is the highest sourced waterway in the Oregon Coast Mountains. It flows to the North Alsea River and ultimately to Waldport. Yaqo’n Creek is sourced immediately to the west of the West Point site. It flows to Big Elk Creek and the Yaquina River and ultimately to Newport. The spring sources during the wet seasons are higher in elevation than USGS maps indicate.

Response to Comment 20-33 – Parker Creek, Yaqo’n Creek and others were added to Maps 3-1 and 3-2, and descriptions of both creeks and associated wildlife that could use them were added to Section 3.6.2 (Wildlife Habitat) of the EA.

Comment 20-34: Marys Peak Alliance

Intersection of Summit and Meadow Edge Trails – The text on page 121 and photo on page 122 are inaccurately identified with potential resulting detriments. This is NOT the intersection of two legal USFS trails. The trail identified as Summit Trail in this section is an ILLEGAL trail that the USFS has tried to close. It is dangerous (slippery) for hikers/bikers and is causing serious erosion in both the meadow and the forest. By legitimizing this illegal trail, the BPA is encouraging the public to feel entitled to use the trail. Please remove this identification from the EA.

Response to Comment 20-34 – The name of KVA 12 (Intersection of Marys Peak Summit Trail and Meadowedge Trail) has been revised in the EA because, as pointed out in this comment, KVA 12 is not located at the intersection of those trails. Instead KVA 12 is located at the intersection of Summit Trail and an unnamed, undesignated and unauthorized footpath heading northeast towards the unpaved access road through BLM land. The updated name for KVA 12 is “Summit Trail (Upper Portion)”. Edits have been made throughout Section 3.7 and Appendix E to include this change.

Comment 21: Berman

Regarding the replacement and upgrade of the BPA communications structure and equipment on Mary’s Peak, I endorse Option 4, relocating the equipment to the West Point Spur. The summit of Mary’s Peak is a unique, sensitive botanical area, and a major recreation site. The Siuslaw National Forest gave the area to the city of Corvallis specifically for the purpose of recreation so there is precedent for preserving it as such. The towers are visually disruptive to the experience of visitors, and subject to high winds and other serious weather challenges. This leaves the power supply vulnerable to disruption and potentially endangers workers who must maintain it. Relocation to the West Point Summit would begin the removal of unsightly equipment from the peak, and put the equipment in a safer place. Please make the decision which protects valuable plant and animal communities, cultural assets and recreation, as well as good functional sense.

Comment 21-01: Berman

Regarding the replacement and upgrade of the BPA communications structure and equipment on Mary’s Peak, I endorse Option 4, relocating the equipment to the West Point Spur.

Response to Comment 21-01 – Comment acknowledged.

Comment 21-02: Berman

The summit of Mary’s Peak is a unique, sensitive botanical area, and a major recreation site.

Response to Comment 21-02 – Comment acknowledged.

Comment 21-03: Berman

The Siuslaw National Forest gave the area to the city of Corvallis specifically for the purpose of recreation so there is precedent for preserving it as such.

USFS provided the following response to Comment 21-03 – Management of Marys Peak has multiple objectives as discussed in Section 4.4 of this EA and in the SNF Forest Land and Resource Management Plan (SNF LRMP, page IV-76-80). The SNF is committed to these multiple objectives, including protecting sensitive plants, utilizing high quality electronic capabilities, and providing recreational experiences.

Comment 21-04: Berman

The towers are visually disruptive to the experience of visitors, and subject to high winds and other serious weather challenges. This leaves the power supply vulnerable to disruption and potentially endangers workers who must maintain it.

[Response to Comment 21-04 – Comment acknowledged.](#)

Comment 21-05: Berman

Relocation to the West Point Summit would begin the removal of unsightly equipment from the peak, and put the equipment in a safer place

[Response to Comment 21-05 – Comment acknowledged.](#)

Comment 21-06: Berman

Please make the decision which protects valuable plant and animal communities, cultural assets and recreation, as well as good functional sense.

[Response to Comment 21-06 – Comment acknowledged.](#)

Comment 22: Smythe

I would like to add my support for Alternative 4 in the Environmental Assessment. I believe this alternative is superior to Alternatives 2A or 3C, for the following reasons: 1) West Point is less vulnerable to extreme weather impacts than the summit site. This has implications for personnel safety as well as reliability of transmission. 2) The summit sites have the potential for greater damaging impact to geology, soils, and plant communities. The experience of the 2011 construction project does not inspire confidence in this regard. 3) The visual impacts of the summit alternatives would seriously degrade the recreational experience of the large number of visitors to the summit of Marys Peak. 4) The construction process for the summit sites would raise safety issues and interfere with the public's enjoyment of the summit. Thank you for the opportunity to comment on the EA.

Comment 22-01: Smythe

I would like to add my support for Alternative 4 in the Environmental Assessment. I believe this alternative is superior to Alternatives 2A or 3C, for the following reasons: 1) West Point is less vulnerable to extreme weather impacts than the summit site. This has implications for personnel safety as well as reliability of transmission.

[Response to Comment 22-01 – Because the weather at West Point Spur is not as severe as at the Marys Peak summit, access to West Point Spur during the winter would be easier than travel to the summit. However, it would be less likely that BPA would need to conduct maintenance at the summit under Alternative 2A or Alternative 3C during severe weather because the new steel-lattice communications structure that would be constructed at the summit would be structurally sound. This would help maintain functioning communications during severe weather, in comparison to the unstable wood monopole that sometimes results in impaired communication during severe weather.](#)

Comment 22-02: Smythe

2) The summit sites have the potential for greater damaging impact to geology, soils, and plant communities. The experience of the 2011 construction project does not inspire confidence in this regard.

[The USFS provided the following response to Comment 22-02 – We have learned from past experiences and developed the Project design criteria with these in mind. We are committed to selecting the alternative that will best meet the purpose and need of the Project and that is in line with the direction of the SBSIA.](#)

Comment 22-03: Smythe

3) The visual impacts of the summit alternatives would seriously degrade the recreational experience of the large number of visitors to the summit of Marys Peak.

Response to Comment 22-03 – As discussed in Section 3.7.4 of this EA, construction of either Alternative 2A or Alternative 3C would result in temporary impacts to scenic resources. Both alternatives would result in moderate temporary impacts from the views of construction activities (construction at the summit, access road improvements, and tree cutting). These impacts would affect the recreational experience of visitors to the summit of Marys Peak, the extent of which would depend on their proximity to construction activities and specific viewer sensitivity to potential impacts of those actions.

Construction of either Alternative 2A or Alternative 3C also would result in permanent impacts to scenic resources. Permanent impacts from access road improvements would be considered low because the initial moderate level of visual contrast would be reduced over time as the new gravel weathers and vegetation along the road edge encroaches into the graveled areas. Permanent impacts from construction within the communications site fence under both alternatives would be considered moderate, mainly due to the construction of the 60-foot tall steel-lattice communications structure. These impacts would affect the recreational experience of visitors to the summit of Marys Peak, the extent of which would depend on their sensitivity to the presences of communications infrastructure. Some commenters, like you, have expressed a high degree of sensitivity to infrastructure on the summit of Marys Peak.

Comment 22-04: Smythe

4) The construction process for the summit sites would raise safety issues and interfere with the public's enjoyment of the summit. Thank you for the opportunity to comment on the EA.

Response to Comment 22-04 – Public safety is of great concern to BPA. Section 3.3.5 (Land Use and Recreation) and Section 3.12.5 (Public Health and Safety) of the EA include mitigation measures that would be implemented to ensure public safety during construction. Some mitigation measures in those sections have been revised in response to public comments received during the draft EA comment period.

Comment 23: Abels

Dear BPA, These comments address the BPA Environmental Assessment on Marys Peak. As a long time resident of Corvallis, Marys Peak has and will always be a special place for me. I used to ride my bike up the road to the top, now I visit often to hike the trails and enjoy the beauty of each season. In 2016, I attended the session at Philomath High School to learn more about your plans to upgrade your system. Now, after reviewing the final three options, I can only support and endorse Option 4 as the most viable plan. By building on the West Point Spur, it will reduce the size and impact of the communication site on the top. The top is a fragile ecosystem that was disturbed when the communication sites were moved and fenced in. Fortunately we know that the ecological and physical systems of Marys Peak can return to what they once were but it will take a long time. Additionally, it will create a safer and secure environment for workers who have to service the site. The extreme weather conditions on top of Marys Peak, especially the wind, make it hazardous for people to be working up there. With over 100,000 visitors to Marys Peak every year, moving to the West Point Spur will also improve the health and safety of the visitors who won't be challenged by trucks and other service vehicles driving on the road. Thank you for your serious consideration of this perspective that will be good for the BPA, good for the visitors to Marys Peak and good to the ecosystems.

Comment 23-01: Abels

Dear BPA, These comments address the BPA Environmental Assessment on Marys Peak. As a long time resident of Corvallis, Marys Peak has and will always be a special place for me. I used to ride my bike up the road to the top, now I visit often to hike the trails and enjoy the beauty of each season. In 2016, I attended the session at Philomath High School to learn more about your plans to upgrade your system. Now, after reviewing the final three options, I can only support and endorse Option 4 as the most viable plan. By building on the West Point Spur, it will reduce the size and impact of the communication site on the top.

[Response to Comment 23-01 – Comment acknowledged.](#)

Comment 23-02: Abels

The top is a fragile ecosystem that was disturbed when the communication sites were moved and fenced in. Fortunately we know that the ecological and physical systems of Marys Peak can return to what they once were but it will take a long time.

[Response to Comment 23-02 – Comment acknowledged.](#)

Comment 23-03: Abels

Additionally, it (Alternative 4) will create a safer and secure environment for workers who have to service the site. The extreme weather conditions on top of Marys Peak, especially the wind, make it hazardous for people to be working up there.

[Response to Comment 23-03 – See the response to Comment 05-02 for information on the safety of BPA staff conducting communications site maintenance and the safety of BPA linemen working on the transmission system.](#)

Comment 23-04: Abels

With over 100,000 visitors to Marys Peak every year, moving to the West Point Spur will also improve the health and safety of the visitors who won't be challenged by trucks and other service vehicles driving on the road.

[Response to Comment 23-03 – Comment acknowledged. See the response to Comment 22-04 for information on how BPA would address public safety concerns during construction.](#)

[Under Alternative 2A or Alternative 3C, maintenance trips to the Marys Peak summit during the non-winter months would be needed. As described in Section 2.8, BPA would visit the summit several times per year for routine communications site maintenance, and as often as up to once per month during the non-winter months when the site is accessible. The BPA propane tank would be filled each year or every other year, as needed.](#)

[There would likely be less maintenance during the winter months, resulting in fewer impacts on winter recreational activities. The main reason for winter maintenance is when the microwave dish mounted on the unstable wood pole is out of alignment. Such maintenance should be needed infrequently or not at all under all action alternatives because the microwave dish would be mounted on a stable steel-lattice structure.](#)

[Under Alternative 4, after the BPA communications site is removed and site restoration is complete, BPA would no longer need to access the Marys Peak summit. Because the USFS communications site would continue to operate, the USFS and their tenants would continue to need access to the summit communications site.](#)

Comment 23-05: Abels

Thank you for your serious consideration of this perspective that will be good for the BPA, good for the visitors to Marys Peak and good to the ecosystems.

[Response to Comment 23-05 – Comment acknowledged.](#)

Comment 24: Stuart/Great Old Broads

Please do Option 4, moving the BPA equipment to the West Spur. The top of Marys Peak is a very special area, with normally spectacular 360 degree views which are now obstructed by all the communications equipment and fencing currently there. If BPA moves their equipment, hopefully the other communications entities will do so as well. This will preserve not only the amazing views but restore the sensitive areas on the top of the mountain. It

will also obviously be a plus for the health and safety of any workers, as the West Spur does not have as extreme weather as the top of the mountain.

Comment 24-01: Great Old Broads

Please do Option 4, moving the BPA equipment to the West Spur. The top of Marys Peak is a very special area, with normally spectacular 360 degree views which are now obstructed by all the communications equipment and fencing currently there.

Response to Comment 24-01 – Comment acknowledged.

Comment 24-02: Great Old Broads

If BPA moves their equipment, hopefully the other communications entities will do so as well.

Response to Comment 24-02 – It is not likely that this BPA Project would affect the decision by other USFS tenants to remain or leave the USFS communications site. Even if BPA implements Alternative 4, it is not expected that USFS communications site tenants would decide to leave the site.

Comment 24-03: Great Old Broads

This (Alternative 4) will preserve not only the amazing views but restore the sensitive areas on the top of the mountain.

Response to Comment 24-03 – Comment acknowledged.

Comment 24-04: Great Old Broads

It will also obviously be a plus for the health and safety of any workers, as the West Spur does not have as extreme weather as the top of the mountain.

Response to Comment 24-04 – See the response to Comment 05-02 for information on the safety of BPA staff conducting communications site maintenance and the safety of BPA linemen working on the transmission system.

Comment 25: Fairchild/Audubon Society of Corvallis

Audubon Society of Corvallis
P.O. Box 148
Corvallis, OR 97339

November 19, 2020

Bonneville Power Administration
Public Affairs – DKE7
P.O. Box 14428
Portland, OR 97291-4428

Re: Marys Peak BPA
Communications Site Project
DOE/EA - 2050
www.bpa.gov/comment

Michelle Holman, Responsible Official
Central Coast District Ranger, USDA Siuslaw National Forest

Representing roughly 340 members of Corvallis and its surrounding community, our Chapter appreciates this opportunity to comment on the Bonneville Power Administration (BPA) proposal to upgrade its communications facilities on the summit of our nearby Marys Peak.

After reviewing the Environmental Assessment (EA) for this proposed action, we support Alternative 4, the relocation of BPA equipment to the West Point communications facility. We cannot in good conscience support any other alternative requiring the continued deployment of any additional equipment, construction, or maintenance traffic onto the summit of Marys Peak.

1. Siuslaw National Forest (SNF) has neglected to treat the summit in conformance with its Scenic Botanic Special Interest Area (SBSIA) designation. It has only retroactively acknowledged damage caused by inadequately-supervised contractors in the placement of security fencing around communications infrastructure, damage which other volunteer organizations have worked to restore. The presence of the fence now results in more concentrated foot traffic erosion around its perimeter. Small things like this can have an outsized impact on fragile resources in this SBSIA. At an earlier BPA EA forum, former SNF Supervisor Jerry Ingersoll publicly agreed to have a picnic table that was brought to the summit by these fencing contractors moved back to the parking area. Still the unauthorized table remains, concentrating erosion by human use.
2. BPA acknowledges that Alternative 4, relocating BPA equipment to West Point, offers several advantages to continuing to maintain and/or update its equipment on the Marys Peak summit, including lower construction and maintenance costs, as well as improved worker safety, over the other viable alternatives.

3. Over many years Siuslaw National Forest has allowed the piecemeal expansion of communications equipment on the summit, encouraged wider recreational use of the SBSIA, and undertaken broad ecological restoration activities within the SBSIA, all without adequately addressing the cumulative effects that arise from those multiple and increasing uses. Proper cumulative effects analysis should address the impact on the environment which results from the incremental impact of the action **when added to the other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertake such other actions (40CFR ~ 1508.7)**. Moving BPA equipment to the West Point facility on the mountain will be a first step toward mitigating these cumulative impacts: the less equipment and concomitant traffic and activity on the summit, the better.

We therefore recommend that BPA and SNF adopt Alternative 4, which would implement moving BPA equipment to the West Point facility. We further urge Siuslaw National Forest to address the cumulative recreational, biological, cultural, and scenic impacts of planned actions in the SBSIA with a stand-alone Environmental Assessment.

David K. Mellinger and Karan Fairchild, Co-Presidents

Jim Fairchild, Conservation Director
Audubon Society of Corvallis

Jon Janosik

Comment 25-01: Audubon Society of Corvallis

Representing roughly 340 members of Corvallis and its surrounding community, our Chapter appreciates this opportunity to comment on the Bonneville Power Administration (BPA) proposal to upgrade its communications facilities on the summit of our nearby Marys Peak. After reviewing the Environmental Assessment (EA) for this proposed action, we support Alternative 4, the relocation of BPA equipment to the West Point communications facility. We cannot in good conscience support any other alternative requiring the continued deployment of any additional equipment, construction, or maintenance traffic onto the summit of Marys Peak.

Response to Comment 25-01 – Comment acknowledged.

Comment 25-02: Audubon Society of Corvallis

Siuslaw National Forest (SNF) has neglected to treat the summit in conformance with its Scenic Botanic Special Interest Area (SBSIA) designation. It has only retroactively acknowledged damage caused by inadequately-supervised contractors in the placement of security fencing around communications infrastructure, damage which other volunteer organizations have worked to restore. The presence of the fence now results in more concentrated foot traffic erosion around its perimeter. Small things like this can have an outsized impact on fragile resources in this SBSIA.

The USFS provided the following response to Comment 25-02 – We have learned from past experiences and developed the Project design criteria with these in mind.

Comment 25-03: Audubon Society of Corvallis

At an earlier BPA EA forum, former SNF Supervisor Jerry Ingersoll publicly agreed to have a picnic table that was brought to the summit by these fencing contractors moved back to the parking area. Still the unauthorized table remains, concentrating erosion by human use.

The USFS provided the following response to Comment 25-03 – This is outside the scope of this Project. However, the USFS is committed to managing recreation in a way that limits disturbance to the special site. SNF will continue to engage with interested groups when we develop designs and projects for this site.

Comment 25-04: Audubon Society of Corvallis

BPA acknowledges that Alternative 4, relocating BPA equipment to West Point, offers several advantages to continuing to maintain and/or update its equipment on the Marys Peak summit, including lower construction and maintenance costs, as well as improved worker safety, over the other viable alternatives.

Response to Comment 25-04 – Alternative 4 would have the lowest cost (Table 2-5), in part because a new steel-lattice structure would not need to be constructed. Maintenance costs would likely be comparable for all action alternatives. See the response to Comment 05-02 that discusses BPA worker safety for all action alternatives.

Comment 25-05: Audubon Society of Corvallis

Over many years Siuslaw National Forest has allowed the piecemeal expansion of communications equipment on the summit, encouraged wider recreational use of the SBSIA, and undertaken broad ecological restoration activities within the SBSIA, all without adequately addressing the cumulative effects that arise from those multiple and increasing uses. Proper cumulative effects analysis should address the impact on the environment which results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertake such other actions (40CFR ~ 1508.7).

The USFS provided the following response to Comment 25-05 – In Section 3.13 of this EA, past management actions are considered as part of the cumulative impact analysis of this Project.

Comment 25-06: Audubon Society of Corvallis

Moving BPA equipment to the West Point facility on the mountain will be a first step toward mitigating these cumulative impacts: the less equipment and concomitant traffic and activity on the summit, the better.

[Response to Comment 25-06 – Comment acknowledged.](#)

Comment 25-07: Audubon Society of Corvallis

We therefore recommend that BPA and SNF adopt Alternative 4, which would implement moving BPA equipment to the West Point facility.

[Response to Comment 25-07 – Comment acknowledged.](#)

Comment 25-08: Audubon Society of Corvallis

We further urge Siuslaw National Forest to address the cumulative recreational, biological, cultural, and scenic impacts of planned actions in the SBSIA with a stand-alone Environmental Assessment.

[The USFS provided the following response to Comment 25-08 – In Section 3.13 of this EA, past management actions are considered as part of the cumulative impact analysis of this Project. CEQ regulations at 1500.4 and 1500.5 state that agencies should reduce paperwork and eliminate duplication with other federal agencies for environmental reviews.](#)

(There is no Comment 26)

Comment 27: Ouellette

In light of preserving the fragile and unique ecosystem at the top of Marys Peak, please choose option 4 [Alternative 4]. Thank you for your consideration.

[Response to Comment 27 – Comment acknowledged.](#)

Comment 28 Vander Heide

SUBMITTED ELECTRONICALLY

November 22, 2020

Bonneville Power Administration
Public Affairs – DKE7
P.O. Box 14428
Portland, OR 97291-4428

Re: Marys Peak BPA
Communications Site Project
DOE/EA - 2050
www.bpa.gov/comment

Michelle Holman, Responsible Official
Central Coast District Ranger, USDA Siuslaw National Forest

These are my comments regarding the Marys Peak BPA Communications Site Project.

After reviewing the EA, I believe Alternative 4, relocating BPA equipment to West Point, best meets the existing management direction contained in the Siuslaw National Forest Land and Resource Management Plan and in the Management Direction for the Marys Peak Scenic Botanical Special Interest Area.

In the Forest Plan, the primary goal for Management Area 5 (Special Interest Areas) “is to protect unusual and outstanding characteristics of SIAs, substantially in their natural condition, and, where appropriate and compatible, to foster public use and enjoyment of these characteristics.”

The Forest Plan envisions the desired condition for Marys Peak, one of the included Special Interest Areas, as follows. “Electronics facilities are concentrated at the peak (and on the land owned by the city of Corvallis at West Point) and are as visually unobtrusive as possible.”

BPA’s alternative 2A which would retain and rebuild BPA’s equipment on its current footprint does not meet the existing management direction and cannot be considered a viable alternative.

Alternative 3C, while creating a smaller total footprint at the top of the peak, increases the area of disturbance and significantly increases the visual impacts there. The effect will not be visually unobtrusive.

Alternative 4, moving the BPA equipment to West Point, is the alternative which most fully meets the goal for MA 5 and the desired future condition for Marys Peak. The Forest Service has the opportunity to make a decision that will reduce the biological and visual impacts at the top of Marys Peak and allow BPA to move to a safer and more secure communication site at West Point. Opportunities like this are rare and I encourage the Forest Service to take a significant positive step to meet established management direction at Marys Peak.

/s/ tony vander heide

Tony Vander Heide
Retired Siuslaw National Forest Planning Staff Officer



Comment 28-01: Vander Heide

These are my comments regarding the Marys Peak BPA Communications Site Project. After reviewing the EA, I believe Alternative 4, relocating BPA equipment to West Point, best meets the existing management direction contained in the Siuslaw National Forest Land and Resource Management Plan and in the Management Direction for the Marys Peak Scenic Botanical Special Interest Area. In the Forest Plan, the primary goal for Management Area 5 (Special Interest Areas) "is to protect unusual and outstanding characteristics of SIAs, substantially in their natural condition, and, where appropriate and compatible, to foster public use and enjoyment of these characteristics."

[Response to Comment 28-01 – Comment acknowledged.](#)

Comment 28-02: Vander Heide

The Forest Plan envisions the desired condition for Marys Peak, one of the included Special Interest Areas, as follows. "Electronics facilities are concentrated at the peak (and on the land owned by the city of Corvallis at West Point) and are visually unobtrusive as possible."

[The USFS provided the following response to Comment 28-02 – The USFS agrees that this comment is correct.](#)

Comment 28-03: Vander Heide

BPA's alternative 2A which would retain and rebuild BPA's equipment on its current footprint does not meet the existing management direction and cannot be considered a viable alternative.

[The USFS provided the following response Comment 28-03 – We considered Forest Plan consistency when reviewing the various alternatives for this Project. See Section 4.4 of this EA for information on consistency with USFS planning documents.](#)

Comment 28-04: Vander Heide

Alternative 3C, while creating a smaller total footprint at the top of the peak increases the area of disturbance and significantly increases the visual impacts there. The effect will not be visually unobtrusive.

[Response to Comment 28-04 – See the response to Comment 22-03.](#)

Comment 28-05: Vander Heide

Alternative 4, moving the BPA equipment to West Point, is the alternative which most fully meets the goal for MA 5 and the desired future condition for Marys Peak. The Forest Service has the opportunity to make a decision that will reduce the biological and visual impacts at the top of Marys Peak and allow BPA to move to a safer and more secure communication site at West Point. Opportunities like this are rare and I encourage the Forest Service to take a significant positive step to meet established management direction at Marys Peak.

[Response to Comment 28-05 – See the responses to Comment 13-07 regarding the communications site security of Marys Peak summit compared to West Point Spur.](#)

[The USFS provided the following response – Thank you for your comment.](#)

Comment 29: Kearl

I first would like to acknowledge the rigor of the Environmental Assessment process that has been utilized for the Marys Peak BPA project. The draft EA document is an impressive compilation of a wide range of perspectives on the project, and represents a major undertaking for BPA. It has provided the means for collaboration from a broad spectrum of individuals, and appears to be providing a mechanism for compromise and a solution that meets the needs of most of the interested parties. My primary perspective on the project is from the vantage point of an emergency services volunteer and disaster response communications unit leader. As most of the people familiar with the project appreciate, the top of Marys Peak offers a truly unique site for the placement of regional communications equipment. It provides vital life-safety communications for several agencies that is

unequaled by any other site the region. The maintenance of, and hopefully improvements to, this capability is of great value to me, and to the public in general. The value of the site from esthetic, environmental and cultural perspectives are not lost on me, either. With all of these considerations in mind, I strongly support the utilization of Alternative 3C - Marys Peak Co-locate with USFS – BPA Albany Substation. This option provides the benefit to BPA of maintaining and upgrading their vital communications capabilities to all areas of the region. With thoughtful design and construction, it will reduce the size of the communications site footprint on the peak. And hopefully, with good collaboration with the USFS, it will provide an opportunity to upgrade the infrastructure of their communications facility. These enhancements could perhaps include improvements to the shared antenna tower space, shared emergency back-up power, and to the general robustness of the existing USFS building. Alternative 3C provides the best balance of benefits and costs of the current options under consideration. In closing, I would like to express my appreciation to all of the parties that have contributed to this Environmental Assessment process. Respectfully, Dan Kearn Philomath, Oregon.

Comment 29-01: Kearn

I first would like to acknowledge the rigor of the Environmental Assessment process that has been utilized for the Marys Peak BPA project. The draft EA document is an impressive compilation of a wide range of perspectives on the project, and represents a major undertaking for BPA. It has provided the means for collaboration from a broad spectrum of individuals, and appears to be providing a mechanism for compromise and a solution that meets the needs of most of the interested parties.

[Response to Comment 29-01 – Comment acknowledged.](#)

Comment 29-02: Kearn

My primary perspective on the project is from the vantage point of an emergency services volunteer and disaster response communications unit leader. As most of the people familiar with the project appreciate, the top of Marys Peak offers a truly unique site for the placement of regional communications equipment. It provides vital life-safety communications for several agencies that is unequaled by any other site the region. The maintenance of, and hopefully improvements to, this capability is of great value to me, and to the public in general.

[Response to Comment 29-02 – Comment acknowledged.](#)

Comment 29-03: Kearn

The value of the site from esthetic, environmental and cultural perspectives are not lost on me, either. With all of these considerations in mind, I strongly support the utilization of Alternative 3C - Marys Peak Co-locate with USFS – BPA Albany Substation. This option provides the benefit to BPA of maintaining and upgrading their vital communications capabilities to all areas of the region. With thoughtful design and construction, it will reduce the size of the communications site footprint on the peak.

[Response to Comment 29-03 – Comment acknowledged.](#)

Comment 29-04: Kearn

And hopefully, with good collaboration with the USFS, it will provide an opportunity to upgrade the infrastructure of their communications facility. These enhancements could perhaps include improvements to the shared antenna tower space, shared emergency back-up power, and to the general robustness of the existing USFS building.

[Response to Comment 29-04 – Under Alternative 3C, the BPA addition to the USFS communications building would not involve work on the USFS portion of the building, nor would the existing USFS building be upgraded.](#)

[The proposed steel-lattice structure would be structurally sound enough to accommodate the existing ODOT and the Oregon State Police equipment currently on the shorter of the two existing steel-lattice structures. The decision to move equipment owned by tenants to the proposed BPA structure would not](#)

be a BPA decision as part of this Project, but BPA would be open to requests in the future to reduce visual clutter at the summit.

BPA would install a separate propane-fueled engine generator inside of the BPA building addition to provide back-up power, while the USFS would continue to rely on their existing generator for backup power.

Comment 29-05: Kearl

Alternative 3C provides the best balance of benefits and costs of the current options under consideration. In closing, I would like to express my appreciation to all of the parties that have contributed to this Environmental Assessment process.

Response to Comment 29-05 – Comment acknowledged.

Comment 30: Heiken/Oregon Wild

From: Doug Heiken, Oregon Wild TO: BPA, VIA: <https://publiccomments.bpa.gov/CommentEntry.aspx?ID=403>
DATE: 23 Nov 2020 RE: Marys Peak BPA Comm Site EA comments

Please accept the following comments from Oregon Wild concerning the Marys Peak BPA Communications Site Project Draft Environmental Assessment, <https://www.bpa.gov/efw/Analysis/NEPADocuments/Pages/Marys-Peak-BPA-Communications-Site-Project.aspx>. Oregon Wild represents 20,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife, and water as an enduring legacy. Our goal is to protect areas that remain intact while striving to restore areas that have been degraded. This can be accomplished by moving over-represented ecosystem elements (such as logged and roaded areas) toward characteristics that are currently under-represented (such as roadless areas and complex old forest). We appreciate that BPA considered a range of alternatives and described the comparative impacts fairly clearly in the EA. We urge BPA to avoid or minimize and then mitigate unavoidable impacts to the unique and important forest and grassland habitats on Marys Peak. This applies to both the decision process and throughout implementation. If trees must be cut, we encourage BPA to leave them on-site or use them for habitat enhancement projects. Thank you for considering our comments.

Comment 30-01: Oregon Wild

Oregon Wild represents 20,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife, and water as an enduring legacy. Our goal is to protect areas that remain intact while striving to restore areas that have been degraded. This can be accomplished by moving over-represented ecosystem elements (such as logged and roaded areas) toward characteristics that are currently under-represented (such as roadless areas and complex old forest).

Response to Comment 30-01 – Comment acknowledged.

Comment 30-02: Oregon Wild

We appreciate that BPA considered a range of alternatives and described the comparative impacts fairly clearly in the EA.

Response to Comment 30-02 – Comment acknowledged.

Comment 30-03: Oregon Wild

We urge BPA to avoid or minimize and then mitigate unavoidable impacts to the unique and important forest and grassland habitats on Marys Peak. This applies to both the decision process and throughout implementation.

Response to Comment 30-03 – Mitigation measures to minimize potential impacts from implementation of any of the Project action alternatives are in each resource section in Chapter 3 of this EA. If a Finding of No Significant Impact is merited for the selected alternative for this Project, then all mitigation measures

listed in the EA would become part of a Mitigation Action Plan that would be implemented during construction.

Comment 30-04: Oregon Wild

If trees must be cut, we encourage BPA to leave them on-site or use them for habitat enhancement projects. Thank you for considering our comments.

Response to Comment 30-04 – As explained in Section 2.5.11 of this EA, under all action alternatives, the trees cut for the beam path would be left as snags at least 20 feet tall or taller, if possible. Heavy equipment and log trucks would not be used; trees would only be cut by workers on foot with chainsaws. The cut wood and debris would be scattered on the forest floor. These measures would be expected to provide some habitat benefits for wildlife.

However, in some areas it would not be safe to leave trees as snags. For example, under Alternative 4, trees immediately adjacent to the Marys Peak access road may need to be cut near the base, rather than left as snags, so they do not eventually fall into the road. Similarly, any trees close to the chain link fence around the CPI communications site would be cut near the base so they would not eventually fall into the communications site, potentially damaging equipment. Nonetheless, BPA would seek to leave trees as snags where such limitations do not exist.

Comment 31: Foster

Nov 23, 2020
DOE/EA-2050
USFS #50453
DOI-BLM-ORWA-N020-2016-0004-EA

Dear BPA,

I support having everything removed from the top of Marys Peak. In the original process before this Draft EA, was removing everything from the top an option? (NEPA 42USC 4321 et seq) and if it was then, and is no longer an option alternative currently, why was removing everything from the top eliminated as an alternatives? In future will the USFS not be allowed to add anything to the top of Marys peak site under this EA? Should SNF LRMP 1990 and SBSIA (36CFR subsection 294.19(a) 1989 protect outstanding character of area page 200, both be revised to reflect this project land use change selection?

SBSIA is contradictory, saying 'manage use at top for electronics'. Both SNF LRMP and SBSIA documents should be updated, to state clearly, that nothing else will be allowed to be added to the top of Marys Peak, but what is owned and operated for and by USFS in all action and no action alternatives if the no action alternative is selected. Alternative #4 no other agency or business should be allowed to add equipment to USFS site ontop of Mary Peak. Currently FS tower hosts possibly a long list of users.

What will stop USFS from allowing land/structure real estate use to occur in future on top of Marys Peak? Should a legal land use deed restriction agreement be drafted to not allow any new or other users at the top of Marys Peak in future? If USFS is the only entity which will be allowed to operated on the top under Alterative #4.

I support Alternative #4.

At CPI West Point Spur: For cutting 20 conifer trees of mixed species on SNF, can these trees become snags with some portion of them bole left standing? Snags can to some degree, help shade out this area and keep shrubs and tree seedlings from growing as rapidly in the spaces left if the entire tree boles are cut down in the Beam path. So, to not have to keep cutting trees in the beam path perhaps.

Will the Beam path tree removal area lead to ongoing loss of area trees in the Beam path cut, wind throw damage from a nick point (straight edge) from which successive wind damage could occur into the beam path?

An ever expanding area of wind throw may result from tree removal in the beam path if this area is exposed higher wind speeds. Current wind damage can be seen at Noble Fir edge on east side of parking lot, above and along the East Ridge Trail. Tree canopy as gaps, extensive fallen trees and newly fallen trees November 2020, at this location. See Figure 6.3 'Final Scenic Resources Assessment Report' for high percentage of Noble Fir trees which are no longer standing in Figure 6.3. Also see page 72 Photo 3.2. EA.

Wind damage due to removal of open grown mid and upper meadow area 100 year old Noble Fir groups of trees to the west of this specific tree edge, may have allowed wind throw to start.

Will tree removal in Beam Path start wind throw into both cut corridors? If so how can this be abated, leave standing boles, create a jagged corridor instead of a straight line corridor, but this may mean more trees will be cut to not create a straight corridor line, on which high wind may start systematically knocking down countless trees in the Beam Path similar to the failing tree line above upper parking lot.

At West Point Spur in Alternative #4, can construction be placed on elevated concrete columns, or some other engineering structure to increase tower height to avoid cutting Beam path corridor trees?

Can the towers which hold the array of equipment which emit's signal for the Beam Path be placed higher on West Point Spur, or someplace else on the West Point Spur ridge as isolated structures, in order to gain elevation and 100% signal path clearance, to not have to cut down/chop in half, Beam Path trees?

Can individual tower structures on West Point Spur, which will need the Beam Path cut to allow this equipment to reach Albany, be elevated on their own above the existing ground foundation, on West Point Spur to not have to cut at this time, 20 trees for these one or more piece's of equipment to operate? More trees will be cut every x years in both beam path areas in Alt. #4. This process of wind loss, and cut to maintain these two corridor's are both, not clearly defined or described in Draft EA.

If wind damage results from Beam Path construction, USFS may have no funding to deal with this issue and have to close down affected areas letting these trees pile up and become possible fire hazard.

Should a joint agency maintenance account, be created in Alternative #4, for Beam Path and West Point Spur and SE Side Marys Peak BPA Beam Path cut area, to help pay for the access road upkeep, possibly help pay for upkeep for BOTH Beam Path cut areas? Both agencies may never have funding to care for these cut areas.

Will spray be used in the Beam Path tree removal corridor's? If so West Point Spur this is start of Parker Creek, and SE Marys Peak is the start of Rock Creek- City of Corvallis Water supply Watershed and is drinking water supply for homes in areas below west and east side's of Marys Peak.

For the Beam Path cut on the SE side of Marys Peak on BLM ownership, has prior trees removed from this slope recently, created mechanical wind throw damage in surrounding or adjacent down slope Noble Fir stands? If wind throw loss starts after BPA Alternative #4 trees are cut on SE side of Marys Peak for Beam Path, destroying trees in this area, who will be responsible?

Should BLM monitor this and start planting trees in the wind thrown under story, to catch up and mitigate any project caused, or other historic wind throw losses due to cutting trees on this SE ridge BLM owns? Should Alternative #4 call for a physical inventory looking for current wind throw damage, survey done prior to cutting in both beam path corridor areas, to establish factual, base line starting point to determine if Alternative #4 is creating mechanical wind throw at one or both, straight line wind nick points of the SE slope tree line edge, and in 100% closed canopy condition on West Point Spur?

Alternative #4: Can the BPA fence on the top, be left in place and some of the access area be restored inside the fence? Gravel, pavement if any removed, and native soil exposed, without importing more fill to the top? Should grading here be reconsidered? Site restoration may be needed after grading to remove invasive species moved around in grading process. How deep will grading go? should the site have a cultural survey done to determine percent historic or prehistoric resources which will be disturbed with grading, and grading down without a qualified archaeologist present.

Will dirty fill be brought to the top to create level grade? Can grading be explained more clearly in this alternative? Grading should hopefully not be needed at all, use of hand held shovels, racks may work just fine in such as small area.

Foot print/size of the buildings to be removed is not clearly explained in EA for Alternative #4 from the top and construction of buildings, tower, guy wire locations, guy wire support are not clearly explained, parking area, road construction expansion at West Point Spur is not clearly explained in the EA for Alternative #4. Will trenching need to take place from West Point Spur to Marys Peak Access Road to connect to power, cable, telephone lines buried along Marys Peak Access Road? If trenching is to occur at West Point Spur it is not clearly discussed in the EA.

The top already has an identified list of weed species, introduced here in contaminated fill brought up from WV floor, in and on equipment which was poorly, or never cleaned before coming to work at the top without USFS supervision for the existing BPA fence construction.

Keep fence at top to keep people off the top, keep from people from continuing to compact soil, keeping increasing numbers of visitors out of the top area. Use sacrifice areas already in use at the top to concentrate and focus land use by visitors. Monitor weed invasions at the top and have funding system set up to identify, address and control weeds at the top of Marys Peak. Do not allow weeds to spread unchecked at both the top of Marys Peak and West Point Spur. Weeds are already lining Marys Peak Access Road, and are advancing toward the top with every car moving weed seed further up slope.

BPA fence retention/with no removal will add to restoration success and allow restoration to use the existing area inside the current foot print of the BPA fence specific for sensitive plant species recovery.

A search of OSU Herbarium on line or in person to see what species may have been extirpated from the top, to try to possibly restore these species to the top may be of use to add more species to any restoration list. For restoration consideration inside BPA fence:

Viola adunca, and *Viola praemorsa*

Prairie Peak has disjunct *Calochortus subalpinus* which may also have been on top of Marys Peak.

Final botany report should have more information about the National Botanic Area of Interest, Rock Garden to species, as many of these species are found at the top around fence edge.

2.5.8 Fencing

“The new length of fencing would need to be constructed prior to re-vegetation so that any disturbance areas could also be revegetated.” Does this mean, excavation and equipment will impacting even more area at the top? This is unacceptable.

With the need to make yet another fence at the top, bringing in potentially weed infested fill, soil compaction and drainage disturbances and erosion concerns? Can all construction be done with care, and skill in execution in small spaces, to be limited to the current established existing roadway and graveled areas inside and outside existing fence line? USFS BLM and BPA should hire a contractor who can work within the graveled and asphalted limits already established inside BPA fence and on all gravel surfaces already present at the top. Allowing a contractor to spread out all over the top, and build yet another fence for this sprawl, will only damage that much more botanically sensitive habitat, and cost that much more to try to recover, restore and save the top from more weeds brought to the top in fill to build the extra construction fence noted in 2.5.8 Fencing.

All soil erosion fencing (plastic wood staked) should have escape areas for wildlife. If none exist, wildlife may be lost during construction.

Construction Fencing around West Point Spur may not be needed, as rarely visited and is gated. If Fencing is constructed at West Point Spur, no fill should be brought in. No spray herbicide should be allowed and a complete list of weed species should be made before and after construction occurs. To show what weeds have been introduced by the contractors and subcontractors who come and go to this site.

So a vegetation protection bond can be used to work to identify, and stop the spread of new weeds into these pristine high elevation alpine meadow habitats. If new weeds are found after construction, the bond help pay for their identification if the USFS has no botanist, and their control if USFS has no one to work at eradicating these new weeds before they spread out into high elevation prairie and forest habitats.

Can a map of road location to West Point Spur be provided in the EA. Can an aerial view of both West Point Spur and the top of Marys Peak be provided?

Can all construction material, equipment and staging be stored at lower gate area above Marys Peak Access road to West Point Spur to spare West Point Spur more soil compaction from storage, staging and keeping equipment on site.

Use of the Marys Peak Access road below the gate as an equipment compound with fencing on top of asphalt roadway pull out areas may be a useful way to not have to damage high elevation meadow habitat, to store equipment and buildings used in construction at CPI West Point Spur. Use of lower Marys Peak Parking lot to store equipment and materials for work at the top of Marys Peak will reduce the amount of damage to the top of Marys Peak while under construction.

For restoration of vegetation at the top inside BPA fence interior compound hopefully a species list of native and invasive species is established, so these species being identified, should be retained and not sprayed out to start from scratch. Weed control at the top needs to be best practices to not impact native species and Rock Garden surrounding the top. Rock garden species are found at the BPA fence, and possibly inside BPA Fence, if a full botany evaluation is done of the top.

Possibly there is no funding to apply to any weed which enters the Rock Garden areas, so weeds may run wild in this biologically important habitat. With global warming, possibly all plants will be moving upwards, including weeds into the Rock Garden area, and the top of Marys Peak. Long term funding to deal with weed management at the top and in the Rock Garden may need to be a budget item for USFS, BLM and BPA, and City of Corvallis and CPI and any other users on CPI West Point Spur, to perhaps as a group be more able to actually work together, to keep all these rare high elevation meadow and Rock Garden areas, free from weeds, trash, vandalize, trails, soil compaction...

Seed is in the soil seed bank here, and seed blows around, so allowing natural restoration to occur by working to remove invasive species may be cost effective by just working with weed abatement and planning carefully to not introduce more weeds at the top. The top already has many native species, which seed drop yearly, allowing natural selection to occur at the top with only work helping remove invasive species may be a cost saving alternative to spending money collecting seed, growing plants and replanting them at the top. In less than two summers, the top where buildings have been removed may be revegetate itself, without human help, but with the BPA fence intact to not have large human caused soil compaction, occurring inside the top's Alternative #4 restoration area.

With Covid, visitations to any open areas have increased significantly. The EA does not address this new increased impact and use recreationally.

Soil compaction and change to higher percent cover of single weed species can be seen in the sacrifice areas at the top around both tables. Creating a much larger sacrifice area at the top by opening up the BPA fence to soil compaction will possibly be adverse for long term restoration and retention of native species on Marys Peak top. The public may need to be excluded again if the top becomes too abused by soil compaction and weed introduction without identification or management of soil compaction, illegal trails, and introduction of weeds by USFS going forward, after BPA fence is removed in Alternative #4.

For BPA Fence construction, USFS was not able to be on site with contractor(s). Weed species introduced from fill and equipment. Ox eye daisy, *Taraxacum officinale*, *Conringia orentailis*, dandelion, may be present at the top introduced in Valley fill and on machinery and currently are being introduced in foot traffic and automobile traffic from Marys Peak Access Road Right of Way and lower parking lot.

Can a financial bond be developed for this project, to pay to have restoration done in future if contractors bring in dirty fill, using dirty equipment and will continuously for the life of the project and beyond, bring in invasive to both locations as sites are decommissioned built and maintained by

countless drive service trucks to CPI West Point Spur and to the top? No one person is responsible, but the entire lot of them are all contributing to adding invasive species to these areas as the weed seed uphill from the heavily infested Marys Peak Access Road.

Current 2020 invasive species lists exist compiled by: USFS, this project and in ongoing and historic botanic survey work done by Mr. Zak Weinstein long term USFS grant funded restoration study on Bunch Grass Ridge in an area of tree removal of trees to expand meadow habitat ecotype. Zak has documented before and after logging transects, and map of spread of highly aggressive Willamette Valley floor weeds never found on Marys Peak, from 2015 commercial logging equipment into Parker Creek drainage and Bunch Grass Ridge, an area with some of the highest species count per sample area documented to exist on Marys Peak.

Introduced weeds across this commercial logging site, has started the spread of weeds which is going unchecked into this highest quality prairie on Marys Peak, due to lack of funds to work to mitigate these aggressive introduced weeds, and no bond for the results of logging contract work developed before this commercial logging started. Log and drop invasive weed seed across the project area, and compact soil, smash thatch ant mounds and mess up this high elevation ecosystem for the USFS to try to figure out how to pick up the pieces.

Since 2015, USFS may not have funding or staff to work on weed abatement from projects that they contracted out for logging on Marys Peak, or for restoration around the existing BPA fence.

For this project: A financial bond can be developed into contract language and be drawn up, in order to support future financial resources, for work to deal with any new, and project linked introduction of weeds/fire damage/erosion damage and erosion control, tree bole and wind throw loss damage at all the sites involved.

A Financial Bond will help support these rare, unique high elevation, sensitive to climate change, habitat areas over time, and not allow them to be left uncared for, due to lack of funding, lack of staff, to degrade rapidly under weed impacts which cost too much to control, and damaged habitat areas by contractors, may never be restorable as highly aggressive valley floor weeds expand over larger and larger areas of high elevation habitat.

Rare high elevation rock garden may be impacted by weed invasions from the top and from the base areas, of Parker Creek, and Bunch Grass Ridge, and be impossible to restore due to climate change adding in this aspect of environmental destabilization and change.

Spot spray for weeds, by USFS may not be enough over time, fire may need to be introduced to help control invasive species introduced by USFS hired contractors.

Marys Peak Access road may be in grave need of management for invasive, and this is not being done by USFS, BLM, or BPA as a group. Movement of construction contractors into the top and lower parking lot and West Point Spur and lower forest staging area at the gate may all track and move more invasive species to these site from plant prologues from the Marys Peak Access Road.

This EA should build in financial planning for future work with invasive weeds/erosion, and other damages directly and indirectly over time, issuing from or brought in by contractors to these properties in all the no action and action alternatives.

Hopefully a list of weeds has been made for all the alternatives, sites, so botanically, in the right season, this document reports what weeds are present before any alternative is selected and started.

So, when new weeds show up, the company responsible for working on the alternative sites will be held responsible and pay into a bond for weed control issued to all contractors in this project.

Contractors working on the selected alternative, should never be left alone, and one of the three federal agencies must have a responsible staff present when any contractor is working on the selected alternative. If BLM can not come from Salem, to be present when contracted work is being done on top and CPI West Point Spur, they should have a USFWS or a USDA representative at the build site for them.

If the BLM is no longer honoring NEPA process, as of sometime in: 2020, then the BLM-USDI need to state this outright, and to the public before participating in this project together with BPA and USDA. If the Federal NEPA process does not apply to the BLM anymore, for any project requiring an EA or an EIS, possibly a land use attorney needs to represent the public in this process if the public are no longer able to access and use Federal NEPA review under BLM associated projects, specifically this one.

Alternative #4 Marys Peak Access Road Restoration:

Water bar work on Marys Peak Access road from the lower parking lot in the past has allowed native plants on this road edges to be pushed over the side of this access road.

Possibly plan for water bar excavation to start at the top, and use pre flagged (preplanned to where road grading will be shoved over the edge/side casted) to avoid digging up dozens of year old possibly endemic to Marys Peak - native plants to create water bar which only last a short period of time here.

Water bar work should using clean equipment, follow preset plan to decrease vegetation loss and damage, and start at the top to decrease spread of ox eye daisy, dandelion, invasive grasses, Sheep sorrel and ect from being spread to the top from working at the bottom first.

Page 87 shows dense clusters of dandelion at edge of highly disturbed parking lot concrete sidewalk and asphalt parking lot.

Possibly leave the current buried electrical/communication conduit utility line in place, since removing it may create more damage, and need extensive restoration logistics, and removal of utility conduit will be more costly to remove and need to have a bond for weed control work.

How will any of the alternative impact area endemic species? Are Marys Peak insect endemics *Booneacris atticola*, *Formica ravidia*, and other rare bombus or endangered: bombyliidae, Syrphidae, Beetles, Bugs, Flies, lepidoptra identified to project alternative level for possible negative impacts to these species?

Are any of the alternatives involving light pollution, and if so, can alternative selected use baffle technology to focus LED lights downward and away from the sky. We currently have heavy light pollution for Philomath and Corvallis impacting the peak.

Will the selected alternative be noisy? Can the selected alternative include any noise baffling for generator and air conditioning to be installed into the CPI building on West Point Spur, if noise is heard out from this building and new structures supported by propane generators?

How will the selected alternative work together with global warming impacts? By removing buildings from the top, more surface area of native non imported soil as fill will allow native species and weed species to recolonize these open surfaces. Movement of all plants upwards, to the top of Marys Peak due to global warming is environmental reality. Making room for some of these species to acclimatize and function under natural succession is important to acknowledge and honor as good restoration planning.

Herbicide, spray use at the top should highly scrutinized for multiple adverse side affects herbicide spray creates in this sensitive area. Spray drift, soil degradation, use of contract straw which sprouts over any sprayed area, losing more plants in a spray area then where sprayed, lack of replacement cover for large sprayed areas, change in soil biota leading to weed invasion and the need for more herbicide application.

Contractors should be black listed, and not paid, as part of a contract agreement for this site, for using dirty fill, spraying herbicide or pesticide, or spilling fuel, oil, gas, using unclean equipment, compacting soil, destroying more area then is in the contract, operating without physical oversight of a supervisor at the project site, from USFS, BPA or their alternate representatives.

Communication between all on site project manager's and USDA-USFS and USDI -BLM should take place if work is to be done after hours, or on Saturday or Sunday, and on any Federal Holidays. To allow a BLM, and or USFS project lead to be present whenever a contractor or a subcontractor not on the original contract, are on the peak and at the alternative sites.

Failure to contact a USFS and or BLM Staff by any contractor or their subcontractors, who work on weekends, after five pm or before 8 am, and Federal Holidays should be in contract language as grounds for termination of the original working contract agreement. Repeat of BPA fence construction without USFS staff physical presence as project oversight on the peak, and at CPI West Point Spur should not occur again for this project.

Use of dirty equipment, contaminated imported valley floor fill, should not occur for this project. Use of dirty logging equipment, wide spread soil compaction, and spread of valley floor weeds into West Point Spur and top of Marys Peak should not occur with this project. Identification of area weeds at all alternative sites prior to the start of the selected alternative should occur to best manage and identify any new weed introductions to all sites by contractors. A bond to pay for botanist to do weed identification, to develop a management control plan and do weed control should be set up and paid for by all the contractors.

Thanks, R. Foster [REDACTED] Corvallis Oregon [REDACTED]

Comment 31-01: Foster

I support having everything removed from the top of Marys Peak.

Response to Comment 31-01 – Comment acknowledged.

Comment 31-02: Foster

In the original process before this Draft EA, was removing everything from the top an option? (NEPA 42USC 4321 et seq) and if it was then, and is no longer an option alternative currently, why was removing everything from the top eliminated as an alternatives?

Response to Comment 31-02 – We assume this comment is referring to removing the BPA communications site from the Marys Peak summit. Alternative 4 was developed as an alternative as a result of public comments received during the NEPA scoping period asking BPA to remove the BPA communications site from the Marys Peak summit. Alternative 4 is an action alternative analyzed in this EA.

Comment 31-03: Foster

In future will the USFS not be allowed to add anything to the top of Marys peak site under this EA?

Response to Comment 31-03 – This EA does not constrain future USFS actions. The proposed action alternatives only relate to the BPA communications site: where to locate it and how to upgrade the site.

Comment 31-04: Foster

Should SNF LRMP 1990 and SBSIA (36CFR subsection 294.19(a) 1989 protect outstanding character of area page 200, both be revised to reflect this Project land use change selection?

The USFS provided the following response to Comment 31-04 – The proposed action alternatives under this Project were found to be consistent with the SNF LRMP. See Section 4.4 of this EA for information on consistency with USFS planning documents.

Comment 31-05: Foster

SBSIA is contradictory, saying ‘manage use at top for electronics.’

The USFS provided the following response to Comment 31-05 – Land management direction on National Forest lands often have multiple-use objectives. See Section 4.4 of this EA for information on consistency with USFS planning documents.

Comment 31-06: Foster

Both SNF LRMP and SBSIA documents should be updated, to state clearly, that nothing else will be allowed to be added to the top of Marys Peak, but what is owned and operated for and by USFS in all action and no action alternatives if the no action alternative is selected.

The USFS provided the following response to Comment 31-06 – Thank you for your comment. Updating the SNF LRMP and SBSIA documents is outside the scope of this Project.

Comment 31-07: Foster

Alternative #4 no other agency or business should be allowed to add equipment to USFS site on top of Mary Peak. Currently FS tower hosts possibly a long list of users.

The USFS provided the following response to Comment 31-07 – The current direction in the SNF LRMP only allows government and public service agencies to install communications equipment at the Marys Peak communications site. See Section 4.4 of this EA for more information.

Comment 31-08: Foster

What will stop USFS from allowing land/structure real estate use to occur in future on top of Marys Peak? Should a legal land use deed restriction agreement be drafted to not allow any new or other users at the top of Marys Peak in future?

Response to Comment 31-08 – See the response to Comment 31-07.

Comment 31-09: Foster

If USFS is the only entity which will be allowed to operated on the top under Alterative #4. I support Alternative #4.

The USFS provided the following response to Comment 31-09 – The USFS has jurisdiction over the occupancy and use of National Forest System lands for communications purposes under the National Forest Management Act (NFMA) of 1976 (16 U.S.C. 1600 et seq.); the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.), and Title 36, Code of Federal Regulations, part 251, Subpart B (36 CFR part 251, subpart B). The current direction in the SNF LRMP only allows government and public service agencies to install communications equipment at the Marys Peak communications site. See Section 4.4 of this EA for more information.

In Section IV Rights and Responsibilities (Subsection C. Occupants) of the 2018 version of the Marys Peak Communications Site Management Plan (USFS 2018c), it states that occupants “May co-locate within and/or on an existing facility after the Forest Service has determined that the proposed use is consistent with the management objectives for this site and compatible with existing uses.”

Comment 31-10: Foster

At CPI West Point Spur: For cutting 20 conifer trees of mixed species on SNF, can these trees become snags with some portion of them left standing? Snags can to some degree, help shade out this area and keep shrubs and tree seedlings from growing as rapidly in the spaces left if the entire tree boles are cut down in the Beam path. So, to not have to keep cutting trees in the beam path perhaps.

Response to Comment 31-10 – Trees would be cut as snags if possible as explained in the response to Comment 30-04.

Comment 31-11: Foster

Will the Beam path tree removal area lead to ongoing loss of area trees in the Beam path cut, wind throw damage from a nick point (straight edge) from which successive wind damage could occur into the beam path? An ever expanding area of wind throw may result from tree removal in the beam path if this area is exposed higher wind speeds. Current wind damage can be seen at Noble Fir edge on east side of parking lot, above and along the East Ridge Trail. Tree canopy as gaps, extensive fallen trees and newly fallen trees November 2020, at this location. See Figure 6.3 'Final Scenic Resources Assessment Report' for high percentage of Noble Fir trees which are no longer standing in Figure 6.3. Also see page 72 Photo 3.2. EA. Wind damage due to removal of open grown mid and upper meadow area 100 year old Noble Fir groups of trees to the west of this specific tree edge, may have allowed wind throw to start. Will tree removal in Beam Path start wind throw into both cut corridors? If so how can this be abated, leave standing boles, create a jagged corridor instead of a straight line corridor, but this may mean more trees will be cut to not create a straight corridor line, on which high wind may start systematically knocking down countless trees in the Beam Path similar to the failing tree line above upper parking lot.

Response to Comment 31-11 – Under Alternative 2A and Alternative 3C, up to 14 noble fir trees would be cut on BLM managed land for the beam path between the Marys Peak summit and the BPA Albany Substation. The noble fir in this area are small trees that are well-rooted. Because only a small number of trees, would be cut, it would not be a large area opened up and exposed. Trees would be cut at a shorter height with chainsaws to remove the beam path obstruction, and left as snags at least 20 feet tall or taller, if possible.

There is no evidence of windthrow along this edge of noble fir on BLM land. The BPA forester stated that he does not expect windthrow to result from cutting these noble fir trees because in this area, the winds are predominantly from the south or southwest. Therefore, the edge where the trees would be cut on BLM land is in a relatively protected area from winds.

The BLM provided the following response to Comment 31-11 regarding Alternative 2A and Alternative 3C - Increases in windthrow and fire hazard are not reasonably foreseeable considering the size and number of trees to be cut. Windthrow is a common occurrence on exposed ridgetops, such as those in the Project area, and may occur in the Project area independent of the Project action alternatives. The BLM will continue to manage the area consistent with the Northwestern and Coastal Oregon Record of Decision and Resource Management Plan. Maintenance of the beam path is the responsibility of the right-of-way holder for the duration of the grant and is not contingent on USFS or BLM funding.

BPA Response - Under Alternative 4, the area where mixed conifers would be cut on City of Corvallis land for the beam path is protected from high winds. Within the previous tree-topping area on the NE side of the CPI communications site, there is no evidence of windthrow at this time. For this reason, windthrow is not expected to occur at this location as a result of tree removal for the beam path.

Comment 31-12: Foster

At West Point Spur in Alternative #4, can construction be placed on elevated concrete columns, or some other engineering structure to increase tower height to avoid cutting Beam path corridor trees? Can the towers which hold the array of equipment which emits signal for the Beam Path be placed higher on West Point Spur, or

someplace else on the West Point Spur ridge as isolated structures, in order to gain elevation and 100% signal path clearance, to not have to cut down/chop in half, Beam Path trees? Can individual tower structures on West Point Spur, which will need the Beam Path cut to allow this equipment to reach Albany, be elevated on their own above the existing ground foundation, on West Point Spur to not have to cut at this time, 20 trees for these one or more piece's of equipment to operate?

Response to Comment 31-12 – Under Alternative 4, BPA would install equipment on an existing steel-lattice communications structure owned by CPI and would not construct a new communications structure. Because the existing CPI communications structure is stable and able to accommodate BPA equipment, constructing a new steel-lattice structure at CPI was not considered under Alternative 4.

BPA considered constructing a new communications site at West Point Spur, referred to as Alternative 5, in Section 2.10.14. Constructing a new, taller steel-lattice structure and reinstalling the existing communications equipment was considered but eliminated from further consideration by BPA because communications capabilities would be the same as under Alternative 4 and it would be more expensive.

BPA did not consider constructing a new steel-lattice structure at West Point Spur, tall enough for a microwave radio beam path to reach the BPA Albany Substation, because it would need to be about 500 feet tall. A structure this tall would not be feasible from a cost, engineering, and environmental perspective.

Comment 31-13: Foster

More trees will be cut every x years in both beam path areas in Alt. #4. This process of wind loss, and cut to maintain these two corridor's are both, not clearly defined or described in Draft EA.

Response to Comment 31-13 – BPA is currently developing standards to assess when trees need to be cut in BPA beam paths. It is likely that BPA would collect LIDAR data along beam paths every three to five years to determine if any trees grow tall enough to impair communication signals, and therefore need to be cut. Under Alternative 4, the trees in the area of the beam path are not expected to grow rapidly in height. They are old trees in that area and tree core samples revealed a growth rate of about 2 feet per year. The BPA forester does not expect that any additional tree cutting would be needed to prevent beam path impairments for at least 10 years, or likely even longer. See the response to Comment 31-11 for information on why wind throw of trees would not be expected.

Comment 31-14: Foster

If wind damage results from Beam Path construction, USFS may have no funding to deal with this issue and have to close down affected areas letting these trees pile up and become possible fire hazard.

Response to Comment 31-14 – Under all action alternatives, no trees would be cut on any USFS land. Under Alternative 2A and Alternative 3C, up to 14 trees would be cut near the access road to Marys Peak summit on BLM land. Under Alternative 4, up to 20 trees would be cut near the CPI communications site on City of Corvallis land. See the response to Comment 31-11 for information on why windthrow of trees would not be expected.

Comment 31-15: Foster

Should a joint agency maintenance account, be created in Alternative #4, for Beam Path and West Point Spur and SE Side Marys Peak BPA Beam Path cut area, to help pay for the access road upkeep, possibly help pay for upkeep for BOTH Beam Path cut areas? Both agencies may never have funding to care for these cut areas.

Response to Comment 31-15 – Under all action alternatives, no trees would be cut on any USFS land. Under Alternative 4, up to 20 trees would be cut near the CPI communications site on City of Corvallis land. If Alternative 4 is implemented, there would be no need for a beam path on BLM lands on Marys Peak. Each action alternative only involves cutting trees in one location for a single beam path.

Alternative 2A and Alternative 3C would require cutting trees on BLM land along the access road to Marys Peak summit. See Section 2.5.11 (Tree Cutting) of this EA for additional details about tree removal to accommodate beam paths under each alternative.

Comment 31-16: Foster

Will spray be used in the Beam Path tree removal corridor's? If so West Point Spur this is start of Parker Creek, and SE Marys Peak is the start of Rock Creek- City of Corvallis Water supply Watershed and is drinking water supply for homes in areas below west and east side's of Marys Peak.

Response to Comment 31-16 – There is no proposal by BPA to use any kind of chemical treatment of vegetation in the beam paths under any action alternatives.

Comment 31-17: Foster

For the Beam Path cut on the SE side of Marys Peak on BLM ownership, has prior trees removed from this slope recently, created mechanical wind throw damage in surrounding or adjacent down slope Noble Fir stands?

BLM provided the following response to Comment 31-17 – BLM has not conducted any recent timber harvest on or near the summit of Marys Peak. In recent years, windthrow has occurred during severe winter storms near the Marys Peak summit.

Comment 31-18: Foster

If wind throw loss starts after BPA Alternative #4 trees are cut on SE side of Marys Peak for Beam Path, destroying trees in this area, who will be responsible?

Response to Comment 31-18 – Under Alternative 4, trees would be cut for the beam path on City of Corvallis property at West Point Spur; trees would not be cut on the SE side of Marys Peak, which is on USFS property. Trees on the SE side of Marys Peak would be cut for Alternative 2A or Alternative 3C, and those trees are located on BLM property. Each action alternative would only require one beam path, as shown in Map 2-1 of this EA.

See the response to Comment 31-11 for information on why windthrow of trees would not be expected.

Comment 31-19: Foster

Should BLM monitor this and start planting trees in the wind thrown under story, to catch up and mitigate any project caused, or other historic wind throw losses due to cutting trees on this SE ridge BLM owns?

Response to Comment 31-19 – As indicated in the response to Comment 31-17, the BLM has not implemented any recent harvest in this area. BLM does not consider replanting due to past windthrow as within the scope of this Project.

Comment 31-20: Foster

Should Alternative #4 call for a physical inventory looking for current wind throw damage, survey done prior to cutting in both beam path corridor areas, to establish factual, base line starting point to determine if Alternative #4 is creating mechanical wind throw at one or both, straight line wind nick points of the SE slope tree line edge, and in 100% closed canopy condition on West Point Spur?

Response to Comment 31-20 – See the response to Comment 31-18.

Comment 31-21: Foster

Alternative #4: Can the BPA fence on the top, be left in place and some of the access area be restored inside the fence? Gravel, pavement if any removed, and native soil exposed, without importing more fill to the top?

Response to Comment 31-21 – Under Alternative 2A and Alternative 3C, the chain link fence surrounding the BPA communications site would be left in place during vegetation restoration. Under Alternative 3A, vegetation restoration would occur in the existing BPA parking area within the chain link fence.

Revegetation would not involve importing fill, but it would involve bringing in some native plants in pots that would be in soil, for planting.

Comment 31-22: Foster

Should grading here be reconsidered? Site restoration may be needed after grading to remove invasive species moved around in grading process. How deep will grading go?

Response to Comment 31-22 – Under Alternative 2A and Alternative 3C, there would be limited grading to reestablish the pre-construction grade after site construction is completed. The revegetation team would assess the condition of the site and determine if any invasive or non-native species would need to be removed prior to revegetation.

Comment 31-23: Foster

Should the site have a cultural survey done to determine percent historic or prehistoric resources which will be disturbed with grading, and grading down without a qualified archaeologist present.

Response to Comment 31-23 – Section 4.7 of this EA details the cultural resources consultation process conducted under the National Historic Preservation Act with the Oregon SHPO, consulting Tribes and land managers. As part of this process, BPA conducted a survey of all areas where cultural resources could be affected by all action alternatives to determine if historic or archeological resources are present. The cultural survey for Alternative 2A and Alternative 3C occurred in 2015 and the cultural survey for West Point Spur occurred in 2019.

The areas that were surveyed for cultural resources are listed in Section 3.8.1 of this EA. Based on the existing conditions of the Project area as observed during the surveys of the ground surface, as well as the potential for intact archaeological deposits based on archaeological modeling, no subsurface excavations were conducted. Within the areas surveyed for cultural resources, no evidence of artifacts or evidence for archeological deposits were found. In addition, a ground penetrating radar survey was conducted on August 22-23, 2016 at the communications site on the summit of Marys Peak to try to determine if any subsurface cultural artifacts might be present.

As explained in Section 3.8.2 of this EA, the existing BPA communications site is considered eligible for the NRHP. See the response to Comment 20-30 for more information on the process and documentation of this determination of NRHP eligibility of the communications site.

An archaeologist may be present during any ground disturbing activities conducted in the Project area, if requested by the consulting parties.

Comment 31-24: Foster

Will dirty fill be brought to the top to create level grade? Can grading be explained more clearly in this alternative? Grading should hopefully not be needed at all, use of hand held shovels, racks may work just fine in such as small area.

Response to Comment 31-24 – Construction at the Marys Peak communications site under Alternative 2A or Alternative 3C would require some gravel to create stable and flat construction surfaces for installation of concrete pads and footings. Gravel used for construction purposes and for access road improvements would be obtained from a local quarry that would be approved by the SNF botanist prior to installation, and that ideally is ODA-certified weed-free. Rock and gravel could need to be pre-treated for weeds before bringing it to Project work areas to ensure no weed propagules are brought to the site with the gravel. The need for treatment of gravel would be up to the discretion of the SNF botanist.

As a result of this and other comments received on this topic, an existing mitigation measure in Section 3.5.5. (Vegetation) of this EA was revised as follows: *Obtain rock and gravel used for road surfacing, fill*

material, and other uses from a quarry that is approved by the SNF botanist prior to installation on Marys Peak, and ideally is local and ODA-certified weed-free.

It is expected that extensive grading and filling would not be required because within the existing communications site, the area was largely cleared of vegetation, excavated, graded flat, and/or covered in fill material during previous site development.

Comment 31-25: Foster

Foot print/size of the buildings to be removed is not clearly explained in EA for Alternative #4 from the top and construction of buildings, tower, guy wire locations, guy wire support are not clearly explained, parking area, road construction expansion at West Point Spur is not clearly explained in the EA for Alternative #4.

Response to Comment 31-25 – The following components of the BPA communications site at Marys Peak summit would be removed under both Alternative 3C and Alternative 4. These components are shown in Photographs 2-2 and 2-3 in the EA and described in Sections 2.3.1 and 2.5.10:

- BPA communications building, which is about 20 feet wide by 16 feet long and 9 feet tall
- A wood pole, about 28-feet tall and 20 inches in diameter, supported by three guy wires, with a 5-foot long VHF whip antenna and an 8-foot diameter microwave radio dish mounted on the pole.
- A 20-foot tall structure that is bolted to a concrete footing on the south side of the BPA building that has an anemometer attached near the top
- A propane tank

Under Alternative 4, the proposed work at the CPI communications site at West Point Spur is described in Section 2.4.3 of this EA. New buildings would not need to be constructed at West Point Spur since BPA would co-locate in the existing CPI communications building. The CPI building would need to be updated to accommodate BPA's colocation security and reliability standards. For example, the exterior door of the CPI building could need to be replaced or updated with security features, or a new entrance door on a different wall could need to be installed to allow for a new BPA-only entry point into a secure room. An HVAC system would need to be installed to regulate the building's temperature, and a 2,000-gallon propane tank and supply line could need to be installed within the CPI chain link fence. Communications equipment would be installed inside the CPI building.

Under Alternative 4, BPA communications equipment would be mounted on the existing steel-lattice structure instead of building a new steel-lattice communications structure at the CPI site. An ice-bridge could need to be constructed between the existing CPI building and the steel-lattice structure to protect workers during icy conditions.

Currently, vehicles accessing the CPI communications site at West Point Spur park on the overgrown graveled area in front of the chain link fence gates. During construction, materials and equipment could be staged in a vegetated area with low-growing shrubs and grasses (about 3,920 square feet), located immediately adjacent to CPI's northwestern fence. The vegetation in the staging area would be temporarily impacted (Table 2-2 in Section 2.5.3). After construction activities are complete, the vegetation in the staging area would be restored, and vehicles would continue to use the established gravel surface in front of the CPI chain link fence gate for parking and accessing the site.

Access road improvements for all action alternatives are discussed in Section 2.5.2 of the EA.

Comment 31-26: Foster

Will trenching need to take place from West Point Spur to Marys Peak Access Road to connect to power, cable, telephone lines buried along Marys Peak Access Road? If trenching is to occur at West Point Spur it is not clearly discussed in the EA.

Response to Comment 31-26 – Under Alternative 4, existing electrical service to the CPI communications site would be used. Therefore, there would be no need for trenching along the access road, and there are no plans to trench along the access road to add telephone land lines to the CPI communications site.

Comment 31-27: Foster

The top already has an identified list of weed species, introduced here in contaminated fill brought up from WV floor, in and on equipment which was poorly, or never cleaned before coming to work at the top without USFS supervision for the existing BPA fence construction.

The USFS provided the following response to Comment 31-27 – Cumulative impact analysis of past management of the area is covered in Section 3.13.3. The implementation of mitigation measures listed in Section 3.5.5 would reduce the potential to introduce new weed propagules. The monitoring of sites disturbed by Project activities is described in the Project Revegetation Plan is partially designed to identify weed infestations and ameliorate the situation if new weeds are brought into the Project area. The Project Revegetation Plan is posted on the Project website, at [www.bpa.gov/goto/Marys Peak](http://www.bpa.gov/goto/Marys%20Peak). We have learned from past experiences and built our Project design criteria to reduce adverse impacts.

Comment 31-28: Foster

Keep fence at top to keep people off the top, keep from people from continuing to compact soil, keeping increasing numbers of visitors out of the top area. Use sacrifice areas already in use at the top to concentrate and focus land use by visitors.

The USFS provided the following response to Comment 31-28 – We are committed to managing recreation in a way that limits disturbance to this special site. Under Alternative 3C or Alternative 4, the existing chain link fence segments (about 229 linear feet) would not be removed until the BPA communications site is removed and the area is restored with native vegetation. The USFS would need to approve the removal of the chain link segments prior to BPA funding the fence removal. USFS would engage with interested groups prior to removing the fence segments. USFS would also continue to engage interested groups when developing designs and future projects for this site.

Comment 31-29: Foster

Monitor weed invasions at the top and have funding system set up to identify, address and control weeds at the top of Marys Peak.

Response to Comment 31-29 – As part of this Project, BPA has committed to monitor for weeds at the summit for five years after Project implementation. Beyond that time, the USFS has asked BPA to remove or treat weeds within the BPA communications site, should Alternative 2A or Alternative 3C be implemented. If Alternative 4 is implemented, the USFS would be responsible for weed management at the summit once BPA completes five years of monitoring and meets the success criteria for vegetation under the Project Revegetation Plan.

Comment 31-30: Foster

Do not allow weeds to spread unchecked at both the top of Marys Peak and West Point Spur.

Response to Comment 31-30 – The measures that would be taken to help avoid the spread of weeds are explained in the response to Comment 07-15 and in Section 3.5.5 of this EA.

Comment 31-31: Foster

Weeds are already lining Marys Peak Access Road, and are advancing toward the top with every car moving weed seed further up slope.

Response to Comment 31-31 – Matt Smith, botanist for the SNF, acknowledges that weeds are already lining the access road, and that weeds spread through a variety of mechanisms, including people, vehicles, and natural dispersal mechanisms.

Comment 31-32: Foster

BPA fence retention/with no removal will add to restoration success and allow restoration to use the existing area inside the current foot print of the BPA fence specific for sensitive plant species recovery.

Response to Comment 31-32 – It is acknowledged that under Alternative 3C and Alternative 4, retaining the chain link fence that currently surrounds the existing BPA communications site would likely facilitate successful revegetation within the fenced area. If fence segments are removed too soon, there is potential for visitors to inadvertently trample sensitive, newly restored habitat areas, which would likely result in a failed revegetation attempt. The timing of fence removal would be up to the USFS because it installed the fence and manages this area. The USFS would need to approve the removal of the chain link fence segments prior to BPA funding the fence removal.

Comment 31-33: Foster

A search of OSU Herbarium on line or in person to see what species may have been extirpated from the top, to try to possibly restore these species to the top may be of use to add more species to any restoration list. For restoration consideration inside BPA fence: *Viola adunca*, and *Viola praemorsa* Prairie Peak has disjunct *Calochortus subalpinus* which may also have been on top of Marys Peak.

Response to Comment 31-33 – BPA was informed that *Viola adunca* was present on the summit, according to a comment received during Project scoping. USFS Restoration Services Team, the vegetation resources contractor for the Project, found a source of *V. adunca* seed on West Point Spur and collected seed in 2020 to be used for summit revegetation. The other two species (*Viola praemorsa* and *Calochortus subalpinus*) are not currently in the Project Revegetation Plan, which is available on the Project website (www.bpa.gov/goto/MarysPeak).

Comment 31-34: Foster

Final botany report should have more information about the National Botanic Area of Interest, Rock Garden to species, as many of these species are found at the top around fence edge.

Response to Comment 31-34 – Vegetation surveys were conducted in 2018 and 2019 as described in the Vegetation Reports found on the Project website. The vegetation survey area included the fenced-in area of the communications site on the Marys Peak summit, a 50-foot buffer around the outside perimeter of the chain link fence, the access road leading from the paved parking lot to the summit communications site, which included a 50-foot wide area centered on the access road (25 feet on either side of the road centerline), and about 1 acre of an almost pure noble fir stand. The survey area included habitats in the SBSIA: grassland, rock garden, and a noble fir stand, described in the vegetation reports. The list of plant species observed during this survey is found in Appendix B of this EA. The vegetation survey area was large enough to adequately describe the affected habitat and the species that occur within them.

Comment 31-35: Foster

2.5.8 Fencing. “The new length of fencing would need to be constructed prior to re-vegetation so that any disturbance areas could also be revegetated.” Does this mean, excavation and equipment will impacting even more area at the top? This is unacceptable.

Response to Comment 31-35 – Under Alternative 3C or Alternative 4, the new chain link fence segment (about 100 feet) that would be constructed would be located within the currently fenced area at the summit communications site. The new fence segment would run north-south and be located about 60-foot closer to the USFS communications site than the existing eastern fenceline, as depicted in a new figure added to Section 2.5.8 of this EA. This new figure depicts the location of the new 100-foot long

fence segment, the existing chain link fence that would remain after Project completion, and the chain link fence segments (about 229 linear feet) that would eventually be removed.

It would be necessary to install the new 100-foot long fence segment prior to revegetation so that disturbed areas associated with the new fence's installation could also be revegetated at the same time as the BPA communications site. The existing fence segments would not be removed until the BPA communications site is removed and the area is restored with native vegetation. The USFS would need to approve the removal of the chain link fence segments prior to BPA funding the fence removal.

Comment 31-36: Foster

With the need to make yet another fence at the top, bringing in potentially weed infested fill, soil compaction and drainage disturbances and erosion concerns?

Response to Comment 31-36 – Additional information on chain link fence construction that would occur under Alternative 3C and Alternative 4 was added to Section 2.5.8 of this EA. Gravel used for construction purposes and for access road improvements would be obtained from a local quarry that would be approved by the SNF botanist prior to installation, and that ideally is ODA-certified weed-free. Rock and gravel could be pre-treated for weeds, if needed, before bringing it to Project work areas to ensure no weed propagules are brought to the site with the gravel. The need for pre-treatment of gravel would be up to the discretion of the SNF botanist. Also, see the response to Comment 31-34 about revisions made to a mitigation measure in Section 3.5.5 (Vegetation) of this EA that addresses fill material and weeds.

Construction of the new 100-foot long segment of fence within the currently fenced area would likely result in soil compaction to the area immediately adjacent to and under the new fence segment. However, the area around the new fence segment would be revegetated, which could require decompaction of the soil prior to planting. After revegetation, soil erosion and drainage disturbances as a result of fence construction would not be expected because the soils would be permeable and the vegetation would trap sediments.

Comment 31-37: Foster

Can all construction be done with care, and skill in execution in small spaces, to be limited to the current established existing roadway and graveled areas inside and outside existing fenceline?

Response to Comment 31-37 – Under Alternative 2A or Alternative 3C, gravel deposition on the access road's surface and grading to spread the new gravel would occur on the existing road bed on top of already exposed gravel surfaces. The water bars would also be installed in the existing road bed, but the rock apron at the downhill slope of the water bars would be outside of the existing road bed, as described in Section 2.5.2. See the response to Comment 07-05 for mitigation measures that were added to Section 3.5.5 (Vegetation) of this EA to minimize the impacts of access road work on adjacent native plants.

Under Alternative 2A or Alternative 3C, construction activities would be limited to the area within the existing chain link fence around the communications site. There would be no need to conduct any work outside the existing fence, and the new fence segment would also be constructed within the existing fence, as described in the response to Comment 31-35. Unfortunately, some vegetation within the fence would be disturbed.

Materials and equipment would be staged in some areas that are vegetated within the fence, or at the paved public parking lot. The steel-lattice structures would be constructed within the fence at the summit in areas that are currently vegetated. Under Alternative 3C, the new building addition and the new steel-lattice structure would be constructed on vegetated areas. Within the fenced communications site, vegetated areas would be disturbed but site revegetation would be done after construction.

Comment 31-38: Foster

USFS BLM and BPA should hire a contractor who can work within the graveled and asphalted limits already established inside BPA fence and on all gravel surfaces already present at the top. Allowing a contractor to spread out all over the top, and build yet another fence for this sprawl, will only damage that much more botanically sensitive habitat, and cost that much more to try to recover, restore and save the top from more weeds brought to the top in fill to build the extra construction fence noted in 2.5.8 Fencing.

Response to Comment 31-38 – There would be no need to conduct any work outside the existing fence at the Marys Peak summit. The new 100-foot long fence segment would be constructed within the existing fence, as described in the response to Comment 31-35 and shown in a new figure in Section 2.5.8 (Fencing) of this EA. The following mitigation measures in Section 3.5.5 of this EA explain how work areas would be restricted:

- *Install temporary exclusion rope fencing and signage, prior to construction, along the access road to the Marys Peak summit in areas with rare native plant species and high quality plant communities, including the rock garden near the summit.*
- *Restrict construction activities (including trenching work) to the minimum work area needed to work safely and effectively, to limit disturbance of vegetation communities.*
- *Locate staging areas in previously disturbed or graveled areas to minimize disturbance to soil and vegetation, where possible.*
- *Avoid locating equipment and vehicle staging areas within the Marys Peak SBSIA, except in areas within the chain link fence at the Marys Peak communications site and in the paved public parking lot.*

To ensure that no work is done outside of the access road and the fenced communications site, the following mitigation measure was added to Section 3.5.5 of this EA:

- *Prevent entry into areas outside of the unpaved access road or the fenced communications site by all contractor personnel, vehicles, equipment, and materials.*

Comment 31-39: Foster

All soil erosion fencing (plastic wood staked) should have escape areas for wildlife. If none exist, wildlife may be lost during construction.

Response to Comment 31-39 – BPA would not use plastic sediment fence with wood stakes for soil erosion control. Instead, certified weed-free rice wattles or erosion control blankets impregnated with native seed collected from Marys Peak would be used for erosion and velocity control. These types of erosion control materials, with their low-stature nature, would not restrict wildlife movement; therefore, they would allow wildlife to move freely through habitats.

Comment 31-40: Foster

Construction Fencing around West Point Spur may not be needed, as rarely visited and is gated. If Fencing is constructed at West Point Spur, no fill should be brought in.

Response to Comment 31-40 – Under Alternative 4, no fill would be brought into the CPI communications site at West Point Spur site and no new fence locations are proposed at West Point Spur. It could be necessary to repair or replace in-kind the existing CPI communications site chain link fence, maintaining its current location. Chain link fabric (aka mesh) and the barbed wire strands located at the top of the fence would need to be repaired or replaced to meet current BPA security standards.

Comment 31-41: Foster

No spray herbicide should be allowed and a complete list of weed species should be made **before** and **after** construction occurs. To show what weeds have been introduced by the contractors and subcontractors who come and go to this site.

Response to Comment 31-41 – A list of species, including weeds, was compiled during the vegetation surveys and is available in the Vegetation Survey Reports, as described in the response to Comment 07-04. BPA has only conducted or funded the hand pulling of weeds for this Project. In recent years, the USFS has conducted some hand pulling and targeted spot spraying for some non-native species such as oxeye daisy along the access road, from the paved parking lot to the summit, according to Matt Smith, SNF Botanist. The USFS and BLM will continue to make decisions regarding the type of weed management techniques, whether mechanical, chemical, or biological, which will be used at Marys Peak since they are the site managers.

To avoid or minimize impacts from the introduction or spread of weeds, Section 3.5.5 of this EA includes proposed mitigation measures that would be implemented during construction of any of the action alternatives. One mitigation measure addresses the need for post-construction weed surveys: *Conduct a post-construction noxious weed survey each year for five years after construction of all areas disturbed by and adjacent to construction activities, to determine if there are new or expanded noxious weed or invasive non-native plant infestations; implement appropriate control measures of noxious weed infestations.* The Project Revegetation Plan also includes monitoring and treatment for weed species in areas that would be disturbed by construction, for 5 years post-construction. See the Project Revegetation Plan on the Project website (www.bpa.gov/goto/MarysPeak).

The USFS provided the following response – Herbicide use is authorized at Marys Peak under the 2010 Invasive Plant Project Decision Notice and subsequent Supplemental Information Reports, which can be found at the following website:

https://www.fs.usda.gov/nfs/11558/www/nepa/63190_FSPLT2_021905.pdf. Non-chemical treatments are the SNF's first preference, but when ineffective, the use of other authorized treatment methods may be explored.

The BLM provided the following response – Use of herbicides on BLM land must follow the 2018 Integrated Invasive Plant Management for the Northwest Oregon District EA and be approved on the BLM's Pesticide Use Proposal. The EA and Decision Record are available at <https://eplanning.blm.gov/eplanning-ui/project/95247/570>.

Comment 31-42: Foster

So a vegetation protection bond can be used to work to identify, and stop the spread of new weeds into these pristine high elevation alpine meadow habitats. If new weeds are found after construction, the bond help pay for their identification if the USFS has no botanist, and their control if USFS has no one to work at eradicating these new weeds before they spread out into high elevation prairie and forest habitats.

Response to Comment 31-42 – Under any of the action alternatives, BPA would be responsible for the introduction of weeds that result from construction of that action alternative. Implementation of mitigation measures in Section 3.5.5 related to weeds would help ensure that no new weed species become established as a result of construction.

After construction of any of the action alternatives, BPA would fund weed control in areas affected by the Project from the Project budget and not through a financial bond. BPA is committing to five years of monitoring and weed control in areas disturbed by Project construction and along the access road. The BPA monitoring period would continue until Project revegetation efforts meet the success criteria stated in the Project Revegetation Plan.

Under Alternative 2A or Alternative 3C, ongoing management of weeds along the access road leading to the summit and within the summit communications site would be a shared responsibility of all the tenants of the communications site. As the manager of the SBSIA, the USFS is responsible for a more comprehensive approach to weed management, beyond the approach for this specific Project.

The USFS provided the following response – As part of this Project, a draft Revegetation Plan was created to help address possible weed infestations, which the USFS is happy to work with outside groups to finalize. As the land manager of the site, the USFS is responsible for a more comprehensive approach to weed management, beyond the scope of this Project. The USFS currently manages for invasive species in the Marys Peak meadows, as well as in forested areas. The USFS plans to continue working independently on weed treatment outside the scope of this Project.

Comment 31-43: Foster

Can a map of road location to West Point Spur be provided in the EA.

Response to Comment 31-43 – A map of the access road to the CPI communications site (NF-112) was added in Section 2.3.4 of the EA. NF-112 can also be seen in a larger scale image in Map 1-1, in Section 1.1 of the EA.

Comment 31-44: Foster

Can an aerial view of both West Point Spur and the top of Marys Peak be provided?

Response to Comment 31-44 – Please refer to Map 1-1 of Section 1.1 and in the inset image of Map 2-1 in Section 2.2.1 of this EA, both of which show aerial images of both West Point Spur and the top of Marys Peak.

Comment 31-45: Foster

Can all construction material, equipment and staging be stored at lower gate area above Marys Peak Access road to West Point Spur to spare West Point Spur more soil compaction from storage, staging and keeping equipment on site. Use of the Marys Peak Access road below the gate as an equipment compound with fencing on top of asphalt roadway pull out areas may be a useful way to not have to damage high elevation meadow habitat, to store equipment and buildings used in construction at CPI West Point Spur.

Response to Comment 31-45 – Under Alternative 4, the area at the lower gate (at the intersection of NF-112 and Marys Peak Road) was not selected as a staging area because it is not large enough to stage equipment, vehicles, and materials. Most, if not all, of the materials, vehicles, and equipment could be staged within the fenced CPI communications site. For any equipment, vehicles, or materials that would need to be stored or parked outside the CPI communications site's chain link fence, a level area immediately adjacent to and located about 20 feet west of the CPI fence would be used. This vegetated area was used for vehicle parking at times. Other vegetated areas would not be used for staging, ensuring that the meadow areas would not be impacted.

Comment 31-46: Foster

Use of lower Marys Peak Parking lot to store equipment and materials for work at the top of Marys Peak will reduce the amount of damage to the top of Marys Peak while under construction.

Response to Comment 31-46 – Under Alternative 2A or Alternative 3C, most of the equipment, materials and vehicles would be staged in the paved public parking lot. This would ensure there is adequate room to stage the necessary equipment and materials needed at the summit for that week's work activities. Staging only essential equipment and materials within the chain link fence at the summit would prevent damage to high elevation meadow habitat. Staging of equipment and materials outside the fence at the Marys Peak communications site would be prohibited.

Comment 31-47: Foster

For restoration of vegetation at the top inside BPA fence interior compound hopefully a species list of native and invasive species is established, so these species being identified, should be retained and not sprayed out to start from scratch.

Response to Comment 31-47 – A complete list of all plant species encountered during Project vegetation surveys is in Appendix B of this EA. The Project Revegetation Plan addresses the need to evaluate the post-construction condition of the area within the communications site fence and the need to avoid harm to native plants within the fence, including native plant salvage prior to construction. See the Project Revegetation Plan on the Project website (www.bpa.gov/goto/MarysPeak).

Comment 31-48: Foster

Weed control at the top needs to be best practices to not impact native species and Rock Garden surrounding the top. Rock garden species are found at the BPA fence, and possibly inside BPA Fence, if an full botany evaluation is done of the top.

Response to Comment 31-48 – The USFS has been working to control oxeye daisy within the communications site's fence and BPA has hand pulled St. John's wort on the summit. It is expected that control measures for these two species will continue, gradually reducing the seed bank for these species. Under all action alternatives, there would be revegetation within the summit communications site fence using native species and subsequent monitoring, including control for weeds and non-native invasive species. Within the communications site's fence, hand-pulling is the method of choice for weed control if it can be effective; otherwise it is likely some targeted spot spraying could be used. BPA will rely on guidance from USFS on acceptable methods of weed control at Marys Peak.

Comment 31-49: Foster

Possibly there is no funding to apply to any weed which enters the Rock Garden areas, so weeds may run wild in this biologically important habitat.

Response to Comment 31-49 – See response to Comment 31-42.

The USFS provided the following response – We are committed to treating invasive weeds and will be following the mitigation measures identified in Section 3.5.5 that are designed to reduce the potential introduction of weeds from Project activities. If new weeds are introduced, they would most likely first occupy areas disturbed by Project activities and would be discovered during the monitoring specified in the Project Revegetation Plan.

Comment 31-50: Foster

With global warming, possibly all plants will be moving upwards, including weeds into the Rock Garden area, and the top of Marys Peak. Long term funding to deal with weed management at the top and in the Rock Garden may need to be a budget item for USFS, BLM and BPA, and City of Corvallis and CPI and any other users on CPI West Point Spur, to perhaps as a group be more able to actually work together, to keep all these rare high elevation meadow and Rock Garden areas, free from weeds, trash, vandalize, trails, soil compaction...

The USFS provided the following response to Comment 31-50 – Work is done annually to address weed issues at the site. For this Project, we are interested in working with interested groups to finalize the Project Revegetation Plan.

Comment 31-51: Foster

Seed is in the soil seed bank here, and seed blows around, so allowing natural restoration to occur by working to remove invasive species may be cost effective by just working with weed abatement and planning carefully to not introduce more weeds at the top. The top already has many native species, which seed drop yearly, allowing natural selection to occur at the top with only work helping remove invasive species may be a cost saving

alternative to spending money collecting seed, growing plants and replanting them at the top. In less than two summers, the top where buildings have been removed may be revegetate itself, without human help, but with the BPA fence intact to not have large human caused soil compaction, occurring inside the top's Alternative #4 restoration area.

Response to Comment 31-51 – Using passive restoration techniques was considered, but based on the results of the Marys Peak meadow restoration project, Matt Smith, SNF Botanist, believes it would be best to proactively install some plantings and seed. Passive restoration conducted as part of the meadow restoration project, which included removing large conifers from the meadows, resulted in the meadow becoming heavily infested with non-natives, and is requiring a lot of treatment of invasive species that likely could have been reduced with an active restoration/revegetation plan.

It is expected that native plants growing from the existing seed bank or from dispersal (volunteers) would slowly colonize the areas disturbed by Project construction over time. Removal of weeds would be key to establishing a plant community of predominantly native species. The success criteria in the Project Revegetation Plan acknowledges that volunteer native species provide acceptable native species cover.

Comment 31-52: Foster

With Covid, visitations to any open areas have increased significantly. The EA does not address this new increased impact and use recreationally.

Response to Comment 31-52 – While visitation to outdoor spaces in general have increased during the COVID-19 pandemic, it is not known specifically how, this has affected the level of visitation at Marys Peak, West Point Spur, and recreational areas near the Albany Substation. The EA does acknowledge that Marys Peak is a popular destination, as is Hazelwood Park, although to a lesser extent. Because West Point Spur is not a public recreation area, visitation is limited.

The earliest that construction could occur under any of the action alternatives would be the summer of 2022. It is not possible to predict definitively how COVID-19 might influence human behavior at that time. Therefore, any conclusions about the level of visitation during construction would be speculative.

Comment 31-53: Foster

Soil compaction and change to higher percent cover of single weed species can be seen in the sacrifice areas at the top around both tables. Creating a much larger sacrifice area at the top by opening up the BPA fence to soil compaction will possibly be adverse for long term restoration and retention of native species on Marys Peak top. The public may need to be excluded again if the top becomes too abused by soil compaction and weed introduction without identification or management of soil compaction, illegal trails, and introduction of weeds by USFS going forward, after BPA fence is removed in Alternative #4.

Response to Comment 31-53 – The fence around the existing Marys Peak communications site was not constructed by BPA and is not owned by BPA. Under Alternative 3C or Alternative 4, the decision of when to remove segments of the chain link fence after revegetation would be made by the USFS.

Comment 31-54: Foster

For BPA Fence construction, USFS was not able to be on site with contractor(s). Weed species introduced from fill and equipment. Ox eye daisy, *Turrits glabra*, *Conringia orentailis*, dandelion, may be present at the top introduced in Valley fill and on machinery and currently are being introduced in foot traffic and automobile traffic from Marys Peak Access Road Right of Way and lower parking lot.

Response to Comment 31-54 – The fence around the existing Marys Peak communications site was not constructed by BPA and is not owned by BPA. As discussed in the EA, construction – including the use of equipment and vehicles, introduction of fill, and human visitation – can contribute to the introduction of weed species.

While oxeye daisy and dandelion were observed by RST during vegetation surveys, *Conringia orentailis* was not observed. During all subsequent site visits for seed collection, baseline data collection, revegetation, and weed management, any occurrences of *Conringia orentailis* would be noted and treated appropriately. Because *Turritis glabra* is native and is known to occur at high elevation sites, BPA would not treat this species as a weed.

The USFS provided the following response – The USFS currently manages problematic weeds within the Marys Peak SBSIA. Oxeye daisy and dandelion are inventoried and known to occur on Marys Peak. *Turritis glabra* is a native species to Oregon and also occurs on Marys Peak. Non-native plant species not known to occur or not found during Project surveys would be identified during monitoring efforts that would occur up to five years post-construction, and treated accordingly. In Section 3.5.5 mitigation measures are listed for all action alternatives. Within this section, it is specified that an on-site monitor would be employed during construction to ensure all mitigation measures and BMPs would be correctly implemented.

Comment 31-55: Foster

Can a financial bond be developed for this project, to pay to have restoration done in future if contractors bring in dirty fill, using dirty equipment and will continuously for the life of the project and beyond, bring in invasive to both locations as sites are decommissioned built and maintained by countless drive service trucks to CPI West Point Spur and to the top? No one person is responsible, but the entire lot of them are all contributing to adding invasive species to these areas as the move weed seed uphill from the heavily infested Marys Peak Access Road.

Response to Comment 31-55 – See response to Comment 31-42.

Comment 31-56: Foster

Current 2020 invasive species lists exist compiled by: USFS, this project and in ongoing and historic botanic survey work done by Mr. Zak Weinstein long term USFS grant funded restoration study on Bunch Grass Ridge in an area of tree removal of trees to expand meadow habitat ecotype. Zak has documented before and after logging transects, and map of spread of highly aggressive Willamette Valley floor weeds never found on Marys Peak, from 2015 commercial logging equipment into Parker Creek drainage and Bunch Grass Ridge, an area with some of the highest species count per sample area documented to exist on Marys Peak. Introduced weeds across this commercial logging site, has started the spread of weeds which is going unchecked into this highest quality prairie on Marys Peak, due to lack of funds to work to mitigate these aggressive introduced weeds, and no bond for the results of logging contract work developed before this commercial logging started. Log and drop invasive weed seed across the project area, and compact soil, smash thatch ant mounds and mess up this high elevation ecosystem for the USFS to try to figure out how to pick up the pieces. Since 2015, USFS may not have funding or staff to work on weed abatement from projects that they contracted out for logging on Marys Peak, or for restoration around the existing BPA fence.

Response to Comment 31-56 – Under all action alternatives, tree removal for beam paths would be done without using large-scale logging techniques, as described in Section 2.5.11 of this EA. Workers would walk to trees and cut them with chainsaws. No heavy equipment or log trucks would be used. The cut wood and debris would be scattered on the forest floor in the immediate vicinity on BLM or City of Corvallis land. Under Alternative 2A or Alternative 3C, if treetops inadvertently roll downhill onto the access road, then they would be chipped and hauled offsite for disposal.

The USFS provided the following response – To our knowledge there are no highly invasive weeds introduced from the 2015 logging, except the speculative *Holcus mollis* which is currently being addressed. There are non-native weeds that may have an increased abundance from the logging disturbance, but their presence has been established on the Peak since at least 2012. The USFS has been addressing all State listed noxious weed species, as well as species that are not listed as noxious but are

problematic to the Marys Peak meadow ecosystems. Weeds have been treated multiple times throughout each year since at least 2016, and this will continue in 2021 and into the future. To see specific plans to mitigate the introduction of weeds for this Project, please review the Project Revegetation Plan, located on the Project website (www.bpa.gov/goto/MarysPeak).

Comment 31-57: Foster

For this project: A financial bond can be developed into contract language and be drawn up, in order to support future financial resources, for work to deal with any new, and project linked introduction of weeds/fire damage/erosion damage and erosion control, tree bole and wind throw loss damage at all the sites involved. A financial bond will help support these rare, unique, high elevation, sensitive to climate change habitat areas over time, and not allow them to be left uncared for, due to lack of funding, lack of staff, to degrade rapidly under weed impacts which cost too much to control, and damaged habitat areas by contractors, may never be restorable as highly aggressive valley floor weeds expand over larger and larger areas of high elevation habitat.

Response to Comment 31-57 – After construction of any of the action alternatives, BPA would fund weed control and restoration of resources impacted by Project activities. Funding would come from the Project budget and not through a financial bond. It is expected that any weed introductions or damage to resources would become evident within the five years of post-construction monitoring and therefore would be addressed while BPA is still engaged in the post-construction monitoring period.

Comment 31-58: Foster

Rare high elevation rock garden may be impacted by weed invasions from the top and from the base areas, of Parker Creek, and Bunch Grass Ridge, and be impossible to restore due to climate change adding in this aspect of environmental destabilization and change.

Response to Comment 31-58 – Direct impacts to the rock garden would be avoided by implementing mitigation measures found in Section 3.5.5 (Vegetation) of this EA. See the response to Comment 07-17 for more details on minimizing the potential for weed invasion. Indirect impacts to the rock garden area would be avoided or minimized by conducting vegetation monitoring for five years post-construction to determine if any newly introduced weeds need to be controlled. BPA acknowledges that climate change could make restoration and weed control for this Project challenging, and therefore, could require more effort and take longer than expected.

The USFS provided the following response – The USFS currently manages for invasive species in the Marys Peak meadows, as well as forested areas. The USFS plans to continue working independently on weeds outside the scope of the Project, and in conjunction with Project revegetation efforts.

Comment 31-59: Foster

Spot spray for weeds, by USFS may not be enough over time, fire may need to be introduced to help control invasive species introduced by USFS hired contractors.

Response to Comment 31-59 – Future decisions on vegetation management, such as the use of prescribed burns, would need to be proposed by the land-managing agencies, and is beyond the scope of this Project.

The USFS provided the following response – Evidence of past fires in the Marys Peak meadow complex has not been observed and, therefore, the SNF does not recommend fire as an approach for large-scale vegetation treatment.

Comment 31-60: Foster

Marys Peak Access road may be in grave need of management for invasive, and this is not being done by USFS, BLM, or BPA as a group. Movement of construction contractors into the top and lower parking lot and West Point

Spur and lower forest staging area at the gate may all track and move more invasive species to these site from plant prologues from the Marys Peak Access Road.

Response to Comment 31-60 – Access road construction, including the use of equipment and vehicles and introduction of fill could contribute to the introduction of weed species. See the response to Comment 31-40 on how BPA would respond to the potential for weed invasion and spread from this Project. According to Matt Smith, SNF Botanist, in recent years USFS has conducted some hand pulling and targeted spot spraying for some non-native species such as oxeye daisy along the access road, from the paved parking lot to the summit.

The BLM provided the following response – BLM conducted integrated pest management over the last several years along the Marys Peak Access Road. BLM completed one chemical treatment in 2018 and two treatments in 2019 along 11 miles of road, from Highway 34 to the Marys Peak summit communications site, targeting ODA noxious weeds including geranium, falsebrome, scotchbroom, blackberry, etc.

The USFS provided the following response – Within Section 3.5.5 are vegetation-related mitigation measures common to all action alternatives. Within this section, it is specified that an on-site monitor will be employed during construction to ensure all mitigation measures and BMPs are correctly implemented. Additionally, the SNF currently manages for invasive species in the Marys Peak meadows, including along the access road, as well as in forested areas. The SNF plans to continue working independently on weeds outside the scope of the Project, and in conjunction with Project revegetation efforts.

Comment 31-61: Foster

This EA should build in financial planning for future work with invasive weeds/erosion, and other damages directly and indirectly over time, issuing from or brought in by contractors to these properties in all the no action and action alternatives.

Response to Comment 31-61 – Please see the response to Comment 31-55.

Comment 31-62: Foster

Hopefully a list of weeds has been made for all the alternatives, sites, so botanically, in the right season, this document reports what weeds are present before any alternative is selected and started. So, when new weeds show up, the company responsible for working on the alternative sites will be held responsible and pay into a bond for weed control issued to all contractors in this project.

Response to Comment 31-62 – Please see the response to Comment 31-40 for information on pre- and post-construction weed surveys and treatment.

Comment 31-63: Foster

Contractors working on the selected alternative, should never be left alone, and one of the three federal agencies must have a responsible staff present when any contractor is working on the selected alternative. If BLM can not come from Salem, to be present when contracted work is being done on top and CPI West Point Spur, they should have a USFWS or a USDA representative at the build site for them.

Response to Comment 31-63 – To avoid or minimize impacts to resources, the EA includes proposed mitigation measures (Chapter 3) that would be implemented during construction of any of the action alternatives. These mitigation measures would become part of a Mitigation Action Plan that would be prepared when an alternative is selected, as well as a Mitigation Implementation Table (MIT) that would be provided to contractors, and include a map of all sensitive areas that must be avoided.

One mitigation measure included in Section 3.5.5 is the employment of an on-site environmental monitor, hired directly by BPA and not the construction contractor. The environmental monitor would be present

during all outdoor construction activities to ensure all mitigation measures and BMPs are correctly implemented during construction, ensure construction equipment and personnel remain within designated construction areas, and public access is restricted when necessary for safety purposes.

Additionally, under Alternative 2A or Alternative 3C, a professional botanist, also hired directly by BPA, would be present during Marys Peak access road work activities to ensure proper implementation of roadside vegetation avoidance and mitigation measures. See responses to Comment 07-05 and Comment 07-15 for additional details.

Comment 31-64: Foster

If the BLM is no longer honoring NEPA process, as of sometime in: 2020, then the BLM-USDI need to state this outright and to the public before participating in this project together with BPA and USDA. If the Federal NEPA process does not apply to the BLM anymore, for any project requiring an EA or an EIS, possibly a land use attorney needs to represent the public in this process if the public are no longer able to access and use Federal NEPA review under BLM associated projects, specifically this one.

The BLM provided the following response to Comment 31-64 – The BLM is following NEPA requirements (H-1790-1 National Environmental Policy Act Handbook). The BLM signed a Memorandum of Understanding (MOU) with BPA to serve as a cooperating agency on this Project and has participated in public engagement efforts throughout the planning process. The BLM will issue its own decision on the Project as stated in Section 1.5.1 of this EA.

Comment 31-65: Foster

Alternative #4 Marys Peak Access Road Restoration: Water bar work on Marys Peak Access road from the lower parking lot in the past has allowed native plants on this road edges to be pushed over the side of this access road.

Response to Comment 31-65 – The following mitigation measures were added to Section 3.5.5 (Vegetation) of this EA to minimize the impacts of water bars on adjacent native plants:

- *Mark water bar and rock apron locations in the field with flags prior to conducting access road work, and coordinate with a USFS botanist to inspect the area to determine if there are native plants to salvage, if so, then salvage and replant in the fall.*
- *Employ a professional botanist to monitor access road work at Marys Peak to ensure vegetation-related mitigation measures are correctly implemented.*
- *Begin access road work (including grading and water bar installation) at the top of Marys Peak (near the summit), with work progressing downhill towards the paved parking lot, when feasible.*
- *During road grading, do not side cast any graded materials; side cast materials must be either compacted on the road surface or removed from the site and disposed of at a USFS approved upland location.*
- *Remove access road rock that inadvertently lands in areas with native vegetation during the placement of rock and relocate it to the road's surface; the removal of rock would be done with care to avoid further damage to vegetation.*

Comment 31-66: Foster

Possibly plan for water bar excavation to start at the top, and use pre flagged (preplanned to where road grading will be shoved over the edge/side casted) to avoid digging up dozens of year old possibly endemic to Marys Peak - native plants to create water bar which only last a short period of time here.

Response to Comment 31-66 – BPA agrees that starting access road work (including water bar and rock apron installation) at the top (near the summit), and working down the road towards the paved parking

lot would be best to help minimize weed spread and weed seed transport to the sensitive and unique summit. This approach would be done as much as is safely possible. See the response to Comment 31-65 regarding water bar locations and mitigation measures that were added to Section 3.5.5 of this EA to minimize the impacts of water bars on adjacent native plants.

Comment 31-67: Foster

Water bar work should use clean equipment, follow preset plan to decrease vegetation loss and damage, and start at the top to decrease spread of ox eye daisy, dandelion, invasive grasses, Sheep sorrel and ect from being spread to the top from working at the bottom first.

Response to Comment 31-67 – See response to Comment 31-66 regarding starting work at the summit and response to Comment 07-11 regarding equipment and vehicle cleanliness requirements.

Comment 31-68: Foster

Page 87 shows dense clusters of dandelion at edge of highly disturbed parking lot concrete sidewalk and asphalt parking lot.

Response to Comment 31-68 – Comment acknowledged.

Comment 31-69: Foster

Possibly leave the current buried electrical/communication conduit utility line in place, since removing it may create more damage, and need extensive restoration logistics, and removal of utility conduit will be more costly to remove and need to have a bond for weed control work.

Response to Comment 31-69 – Removal of the currently buried electrical line at the Marys Peak summit is not proposed under any action alternatives. The electrical line would be left in place due, in part, to some of the reasons mentioned in this comment.

If either Alternative 2A or Alternative 3C is implemented, then new upgraded electrical lines (aka station service) would be installed underground within the communications site fence. Burial could potentially be done with directional boring to minimize the amount of surface soil and vegetation disturbance. The new electrical lines would be buried between the existing above ground electrical pedestal and the existing BPA communications building (Alternative 2A, see Section 2.4.1) or the new BPA communications building addition (Alternative 3C, see Section 2.4.2).

Under Alternative 4, BPA does not propose installation of new electrical lines at West Point Spur or the removal of existing underground electrical lines leading to the Marys Peak summit (see Section 2.4.3).

Comment 31-70: Foster

How will any of the alternative impact area endemic species? Are Marys Peak insect endemics *Booneacris alticola*, *Formica ravidia*, and other rare bombus or endangered: bombyliidae, Syrphidae, Beetles, Bugs, Flies, lepidoptra identified to project alternative level for possible negative impacts to these species?

Response to Comment 31-70 – The Marys Peak ice cricket (*Grylloblatta chintimini*) and the Marys Peak wingless grasshopper (*Booneacris alticola*) are two invertebrate species endemic to Marys Peak. These species are not currently federal, state or SNF special-status species.

Three invertebrate special-status species that could occur in the study area are the keeled jumping-slug (*Hemphillia burringtoni*, Forest Plan Survey and Manage, Cat. D, Section 4.4.4), Suckley cuckoo bumble bee (*Bombus suckleyi*, BLM SEN), and the Siskiyou short-horned grasshopper (*Chloealtis aspasma*, BLM SEN) (see Section 4.5.2 of the EA). These species are not endemic to Marys Peak or West Point Spur, and were not observed during wildlife surveys (see Appendix D of the EA).

Under any action alternatives, as described in Section 3.6.4 of this EA, crushing or clearing of vegetation and soil disturbance could remove or degrade habitat for terrestrial invertebrates such as ants, beetles, flies, butterflies and moths, and bee species. This also would apply to endemic invertebrate species, such as the Marys Peak ice cricket and the Marys Peak wingless grasshopper.

Potential impacts on invertebrates would be similar under any of the action alternatives as described in Section 3.6.4 of this EA. Incidental direct mortality could result from Project activities that disturb soil and vegetation or from collisions with construction equipment and vehicles. Because vehicle speeds on access roads would be limited to less than 10 miles per hour, winged insects should be able to move out of the way of vehicles.

Comment 31-71: Foster

Are any of the alternatives involving light pollution, and if so, can alternative selected use baffle technology to focus LED lights downward and away from the sky. We currently have heavy light pollution for Philomath and Corvallis impacting the peak.

Response to Comment 31-71 – Under all action alternatives, lights would not be installed on any of the steel-lattice structures because they would all be below the height threshold that requires lighting for the FAA. If any security lights need to be installed on buildings, motion-sensor activated lights would be installed to decrease the amount of time the area is lighted. Night construction would not occur during this Project.

Comment 31-72: Foster

Will the selected alternative be noisy? Can the selected alternative include any noise baffling for generator and air conditioning to be installed into the CPI building on West Point Spur, if noise is heard out from this building and new structures supported by propane generators?

Response to Comment 31-72 – Potential noise impacts would vary depending on the action alternative and the facilities involved. Information about the potential noise impacts from construction, from operation of the HVAC system, and from operation of the engine generator is in Section 3.10 of this EA. All of the action alternatives would meet EPA noise guidance for public health and welfare, as well as all applicable federal, state, and local noise regulations.

The noise generated during Project construction for any action alternative would be intermittent and temporary. To minimize HVAC system noise, BPA would install a more expensive HVAC system model which produces less noise than less expensive models. Noise baffles would not be used because they decrease the operational efficiency of the HVAC system.

The noise generated by the engine generator during operation for any action alternative would be intermittent and temporary. In addition to routine testing of the engine generator (once per week at night for about 90 minutes), the engine generator would only operate during any loss of electrical service. Typically, loss of electrical service occurs as a result of severe weather, when people are unlikely to be near the communications site. The engine generator would also be installed inside of the communications building to help reduce outdoor noise levels.

Comment 31-73: Foster

How will the selected alternative work together with global warming impacts? By removing buildings from the top, more surface area of native non imported soil as fill will allow native species and weed species to recolonize these open surfaces. Movement of all plants upwards, to the top of Marys Peak due to global warming is environmental reality. Making room for some of these species to acclimatize and function under natural succession is important to acknowledge and honor as good restoration planning.

Response to Comment 31-73 – Under any of the action alternatives, extensive grading and filling would not be required at the Marys Peak summit communications site, because within the existing communications site the area was largely cleared of vegetation, excavated, graded flat, and/or covered in fill material during previous site development. To help control the invasion of non-native plant species in areas disturbed by Project construction, BPA is committing to five years of monitoring and weed control in areas disturbed by the Project. The USFS will take the lead on weed management after the Project revegetation criteria are successfully met and the BPA monitoring period is completed, as stated in the Project Revegetation Plan.

Native plant species could move up in elevation towards the summit, either from natural plant dispersal or as a result of an increase in their elevation range due to climate change. Native species that volunteer in areas disturbed by Project construction would be allowed to persist unless the SNF botanist determined that species should not be introduced to Marys Peak.

Comment 31-74: Foster

Herbicide, spray use at the top should highly scrutinized for multiple adverse side effects herbicide spray creates in this sensitive area. Spray drift, soil degradation, use of contract straw which sprouts over any sprayed area, losing more plants in a spray area than where sprayed, lack of replacement cover for large sprayed areas, change in soil biota leading to weed invasion and the need for more herbicide application.

Response to Comment 31-74 – See the response to Comment 31-60 for information on the past use of herbicides by USFS and BLM as a weed control method at Marys Peak. For this Project, any use of herbicides would be done using targeted spot spraying under conditions that would minimize or avoid herbicide drift, with the agreement of cooperating agencies.

The first choice method to control non-native plant species during the BPA monitoring period would be hand-pulling since it would minimize harm to nearby native plant species. Straw would not be used for erosion control for this Project. Instead, certified weed-free rice wattles or erosion control blankets impregnated with native seed blankets impregnated with native seed collected from Marys Peak would be used for erosion and velocity control. The USFS will continue weed management after the Project revegetation criteria are successfully met and the BPA monitoring period is completed, as stated in the Project Revegetation Plan.

Comment 31-75: Foster

Contractors should be black listed, and not paid, as part of a contract agreement for this site, for using dirty fill, spraying herbicide or pesticide, or spilling fuel, oil, gas, using unclean equipment, compacting soil, destroying more area than is in the contract, operating without physical oversight of a supervisor at the project site, from USFS, BPA or their alternate representatives.

Response to Comment 31-75 – Contracts for this Project would make all environmental and safety requirements very clear in a MIT that would include all mitigation measures and a map of all sensitive areas that must be avoided, including the rock garden area.

As indicated in Section 3.5.5 of the EA, an on-site environmental monitor would be hired directly by BPA and not the construction contractor. The environmental monitor would be present during all outdoor construction activities to ensure all mitigation measures and BMPs are correctly implemented during construction, ensure construction equipment and personnel remain within designated construction areas, and public access is restricted when necessary for safety purposes.

The environmental monitor would oversee installation of all restrictive fencing, flagging, and erosion control materials. They would ensure that staging only occurs in designated staging areas, and travel only occurs in established access routes. On a daily basis, before work could begin, the environmental monitor

would review the day's work activities, coordinate with the contractor to discuss daily activities and any restrictions, and ensure all applicable mitigation measures are implemented each day. Coordination with the contractor would include locations workers are allowed to park, allowable work locations, worker transportation to the work site(s), and material and equipment needs and management. Site-specific safety plan would specify how to manage and promptly respond to any chemical spills, including oils and fuels.

Additionally, under Alternative 2A or Alternative 3C, a professional botanist, also hired directly by BPA, would be present during Marys Peak access road work activities to ensure proper implementation of roadside vegetation avoidance and mitigation measures. See responses to Comment 07-05 and Comment 07-15 for additional details.

A contractor or subcontractor who violates the MIT would be liable for damages and BPA could require repair or mitigation. Also, BPA could withhold payments until adequate repair or mitigation was completed. If violations continue or are particularly egregious, then BPA could request the removal of the problem individuals from the contractor's staff.

Comment 31-76: Foster

Communication between all on site project manager's and USDA-USFS and USDI -BLM should take place if work is to be done after hours, or on Saturday or Sunday, and on any Federal Holidays. To allow a BLM, and or USFS project lead to be present whenever a contractor or a subcontractor not on the original contract, are on the peak and at the alternative sites. Failure to contact a USFS and or BLM Staff by any contractor or their subcontractors, who work on weekends, after five pm or before 8 am, and Federal Holidays should be in contract language as grounds for termination of the original working contract agreement. Repeat of BPA fence construction without USFS staff physical presence as project oversight on the peak, and at CPI West Point Spur should not occur again for this project.

Response to Comment 31-76 – Mitigation measures in Section 3.3.5 (Land Use and Recreation), Section 3.9.5 (Socioeconomics), and Section 3.12.5 (Public Health and Safety) were revised to clarify limits on when work would occur:

- *Schedule all construction work during daylight hours (7 a.m. to 7 p.m.) and limit work to weekdays, if possible*
 - The revised mitigation measure states: *Schedule all construction work during daylight hours (7 a.m. to 7 p.m.)*
 - *Avoid conducting access road improvements on weekends or holidays to minimize impacts to visitors, if possible.*
 - The revised mitigation measure states: *Avoid all work between the parking lot and the Marys Peak summit and at the Marys Peak summit communications site during federal holidays and weekends.*
 - *Avoid removing the Marys Peak BPA communications site (Alternative 3C and Alternative 4) during weekends and holidays to minimize disturbance during periods of high visitation.*
 - The revised mitigation measure states: *Avoid removing the Marys Peak BPA communications site (Alternative 3C and Alternative 4) during federal holidays and weekends to minimize disturbance during periods of high visitation.*

An on-site environmental monitor, hired directly by BPA and not the construction contractor, would be present during all outdoor construction activities to ensure all mitigation measures and BMPs are correctly implemented during construction, ensure construction equipment and personnel remain within

designated construction areas, and ensure public access restricted areas are in place for human health and safety purposes.

Additionally, under Alternative 2A or Alternative 3C, a professional botanist, also hired directly by BPA, would be present during Marys Peak access road work activities to ensure proper implementation of roadside vegetation avoidance and mitigation measures. See responses to Comment 07-05 and Comment 07-15 for additional details.

BPA would provide notice to the USFS and BLM prior to the start of work and would provide scheduling updates during construction. This would provide cooperating agencies the opportunity to visit the Project site periodically for inspections and oversight. Additionally, the BPA access road engineer would be on-site each day during access road work and would provide daily access road construction activity reports to the USFS access road engineer.

The USFS provided the following response – The USFS would provide general oversight as the land-managing agency, be in attendance during pre-construction meetings with the environmental monitor and contractors, and perform periodic spot-checks to ensure work is being performed, as described in the mitigation measures. The USFS would inspect the site and work performed during Project milestones (e.g., after first water bar installation, after first application of rock on the access road, etc.).

Comment 31-77: Foster

Use of dirty equipment, contaminated imported valley floor fill, should not occur for this project.

Response to Comment 31-77 – See the response to Comment 31-24 regarding the gravel that would be used for this Project, and see the response to Comment 07-11 regarding the cleaning of Project vehicles and equipment prior to entry.

Comment 31-78: Foster

Use of dirty logging equipment, wide spread soil compaction, and spread of valley floor weeds into West Point Spur and top of Marys Peak should not occur with this project.

Response to Comment 31-78 – Logging equipment would not be used during implementation of any of the action alternatives. Soil compaction would be limited to construction work areas, including access roads, staging areas, and within the fenced area of the communications site. See the response to Comment 07-07 for mitigation measures to help avoid new weed introductions.

Comment 31-79: Foster

Identification of area weeds at all alternative sites prior to the start of the selected alternative should occur to best manage and identify any new weed introductions to all sites by contractors.

Response to Comment 31-79 – See the response to Comment 31-40.

Comment 31-80: Foster

A bond to pay for botanist to do weed identification, to develop a management control plan and do weed control should be set up and paid for by all the contractors.

Response to Comment 31-80 – See the responses to Comment 31-40 and Comment 31-42 on how BPA would fund weed identification, monitoring, and treatment for this Project. BPA is currently providing funding to the USFS Restoration Services Team to develop the Project Revegetation Plan, which includes weed monitoring and control. BPA would provide funding to the USFS Restoration Services Team to implement the Project Revegetation Plan, if an action alternative is selected.

Comment 32: Corvallis Chapter - Native Plant Society of Oregon



Comments on the Marys Peak BPA Communications Site Project Draft Environmental Assessment

11/28/2020

The Corvallis Chapter of the Native Plant Society of Oregon (NPSO) which has approximately 80 members supports alternative 4, moving the BPA facilities to the Consumer Power facility in the City of Corvallis communication site on West Point. This is the least expensive alternative, creates the least disturbance to the area, will improve the view from the summit, will have less equipment traffic that introduces weeds, restores some of the native plant vegetation, moves the fence and reduces the size of the communication site.

The Marys Peak Scenic Botanical Area has been used by our chapter for many years with numerous fieldtrips to enjoy the great diversity of plants from the noble fir forests to the summit rock gardens. We support the least invasive Alternative 4 proposed by the Draft Environmental Assessment Report to protect the fragile high elevation plant communities we enjoy on the highest peak in the Oregon Coast Range. Three members of our society worked for years to document the plants, geology and history of the area and published an article entitled "Marys Peak Scenic Botanical Area" in the Kalmiopsis Volume 19, 2012. This article includes a plant species list.

We are extremely concerned about the increase of weedy non-native plants on the summit of Marys Peak. The Oxeye daisy (*Leucanthemum vulgare*) is invading the meadows, marching up the road and is on the summit after disturbance from installing the fence around the facilities on the summit. Efforts must be made to minimize the spread of existing weeds and any new weeds. A new weed, creeping velvet grass (*Holcus mollis*) has shown up recently in an area that noble firs were piled up by a logging machine and then burned to the west of the summit parking lot. This weed was not documented in the 2012 Kalmiopsis report as being in the Scenic Botanical Area.

Also, we have 2 additional comments on items mentioned at the virtual public meeting on October 28, 2020:

1. The higher elevation plant communities on Marys Peak are unusual in the Coast Range. One of the most botanically interesting features of Marys Peak is the summit rock garden of subalpine wildflowers which exists on the thin gravelly soil. The vegetation is sparse and fragile and susceptible to disturbance. It was mentioned at the public hearing that there were no "rare plant species" found on Marys Peaks. Yet, if one were



to look at the summit plant communities, they represent unique plant ecosystems not found anywhere else in the Coast Range. The prostrate lupine (*Lupinus lepidus*) is thought to have originated in central Oregon and the sulfur buckwheat (*Eriogonum umbellatum*) from the Rogue area.

2. There was a discussion of the disturbance to the vegetation along the road to the summit during the construction of trenches to channel the water away from the road to prevent erosion. It was mentioned that native plants like fireweed and pearly everlasting could be planted along the roadside. Neither of these plant species have ever been documented on the road to the summit. Instead plant species that exist there now should be included in the revegetation along the roadside. These plant species include:

Oregon Sunshine (*Eriophyllum lanatum* var. *leucophyllum*)
Bluefield Gilia (*Gilia capitata* ssp. *capitata*)
Dwarf Dogbane (*Apocynum androsaemifolium* var. *pumilum*)
Sickle-keeled Lupine (*Lupinus albicaulis*)
Cardwell's Penstemon (*Penstemon cardwellii*)
Scalloped Onion (*Allium crenulatum*)
Tower Mustard (*Turritis glabra*)
Rough Wallflower (*Erysimum capitatum* var. *capitatum*)
Field Chickweed (*Cerastium arvense* ssp. *strictum*)

Thank you for considering our comments.

Sincerely,

Esther H G McEvoy
President Corvallis Chapter of the Native Plant Society of Oregon

Dan Luoma
Treasurer Corvallis Chapter of the Native Plant Society of Oregon

Comment 32-01: Corvallis Chapter - Native Plant Society of Oregon

The Corvallis Chapter of the Native Plant Society of Oregon (NPSO) which has approximately 80 members supports alternative 4, moving the BPA facilities to the Consumer Power facility in the City of Corvallis communication site on West Point. This is the least expensive alternative, creates the least disturbance to the area, will improve the view from the summit, will have less equipment traffic that introduces weeds, restores some of the native plant vegetation, moves the fence and reduces the size of the communication site.

[Response to Comment 32-01 – Comment acknowledged.](#)

Comment 32-02: Corvallis Chapter - Native Plant Society of Oregon

The Marys Peak Scenic Botanical Area has been used by our chapter for many years with numerous fieldtrips to enjoy the great diversity of plants from the noble fir forests to the summit rock gardens. We support the least invasive Alternative 4 proposed by the Draft Environmental Assessment Report to protect the fragile high elevation plant communities we enjoy on the highest peak in the Oregon Coast Range.

[Response to Comment 32-02 – Comment acknowledged.](#)

Comment 32-03: Corvallis Chapter - Native Plant Society of Oregon

Three members of our society worked for years to document the plants, geology and history of the area and published an article entitled “Marys Peak Scenic Botanical Area” in the Kalmiopsis Volume 19, 2012. This article includes a plant species list.

[Response to Comment 32-03 – Comment acknowledged. The article mentioned by the commenter was a useful reference in drafting various sections of the EA, and the plant list was used in the development of the target survey list for plant surveys and in the development of the Project Revegetation Plan.](#)

Comment 32-04: Corvallis Chapter - Native Plant Society of Oregon

We are extremely concerned about the increase of weedy non-native plants on the summit of Marys Peak. The Oxeye daisy (*Leucanthemum vulgare*) is invading the meadows, marching up the road and is on the summit after disturbance from installing the fence around the facilities on the summit. Efforts must be made to minimize the spread of existing weeds and any new weeds. A new weed, creeping velvet grass (*Holcus mollis*) has shown up recently in an area that noble firs were piled up by a logging machine and then burned to the west of the summit parking lot. This weed was not documented in the 2012 Kalmiopsis report as being in the Scenic Botanical Area.

[Response to Comment 32-04 – Oxeye daisy and hairy cat’s ear are on the list of invasive non-native species that would be controlled, if present, in areas monitored for this Project. Based on the information provided in this comment, creeping velvet grass would also be controlled, if present.](#)

Comment 32-05: Corvallis Chapter - Native Plant Society of Oregon

Also, we have 2 additional comments on items mentioned at the virtual public meeting on October 28, 2020:

1. The higher elevation plant communities on Marys Peak are unusual in the Coast Range. One of the most botanically interesting features of Marys Peak is the summit rock garden of subalpine wildflowers which exists on the thin gravelly soil. The vegetation is sparse and fragile and susceptible to disturbance. It was mentioned at the public hearing that there were no “rare plant species” found on Marys Peaks. Yet, if one were to look at the summit plant communities, they represent unique plant ecosystems not found anywhere else in the Coast Range. The prostrate lupine (*Lupinus lepidus*) is thought to have originated in central Oregon and the sulfur buckwheat (*Eriogonum umbellatum*) from the Rogue area.

[Response to Comment 32-05 – See the response to Comment 07-05.](#)

Comment 32-06: Corvallis Chapter - Native Plant Society of Oregon

2. There was a discussion of the disturbance to the vegetation along the road to the summit during the construction of trenches to channel the water away from the road to prevent erosion. It was mentioned that native plants like fireweed and pearly everlasting could be planted along the roadside. Neither of these plant species have ever been documented on the road to the summit. Instead plant species that exist there now should be included in the revegetation along the roadside. These plant species include:

Oregon Sunshine (*Eriophyllum lanatum* var. *leucophyllum*)

Bluefield Gilia (*Gilia capitata* ssp. *capitata*)

Dwarf Dogbane (*Apocynum androsaemifolium* var. *pumilum*)

Sickle-keeled Lupine (*Lupinus albicaulis*)

Cardwell's Penstemon (*Penstemon cardwellii*)

Scalloped Onion (*Allium crenulatum*)

Tower Mustard (*Turritis glabra*)

Rough Wallflower (*Erysimum capitatum* var. *capitatum*)

Field Chickweed (*Cerastium arvense* ssp. *strictum*)

Response to Comment 32-06 – If Alternative 2A or Alternative 3C is implemented, then water bars and rock aprons would be installed between the paved parking lot and the Marys Peak summit. Because fireweed does not occur along the edge of the access road to Marys Peak summit, fireweed would not be planted. Furthermore, any plant species that grow tall would not be planted at the edge of water bars because their height would emphasize the location of the water bars.

Some large clumps of pearly everlasting occur in the meadows adjacent to the access road to the summit. The Restoration Services Team considers this species appropriate to plant to stabilize the rock aprons because it is able to grow in rocky soils and forms dense mats.

The Restoration Services Team is considering collecting seeds of some species at Marys Peak and West Point Spur mentioned in this comment. Some of these species are visually attractive, provide resources to wildlife, and are appropriate for use in restoration for this Project, especially bluefield gilia, Oregon sunshine and dwarf dogbane.

Comment 33: Wulff

Greetings:

I'm a frequent visitor to Marys Peak. I and others hike to the summit of Marys Peak to get away from the Valley's manufactured facilities, to seek out the beauty of the landscape, the view, the wildlife, and in summer, the flowers. The summit is a destination for recreationists, whether they are local or come from afar. The East, North, and Meadow Edge Trails were all designed to provide access to the summit. I can't imagine recreationists going to the summit for a view of the facilities within the fenced area. From my perspective, reducing the footprint of facilities on the summit would be most desirable.

I recognize the need for the Bonneville Power Administration to maintain the most up-to-date and secure capabilities in providing service to the public. With a choice of whether to co-locate within the USFS building or construct a new facility at West Point (Option 4C), I would wish for the latter for the following reasons:

- Significantly reduced on-going physical impact on the summit
- Easier maintenance access during inclement weather
- Greater security of facility
- Less conflict with other agencies currently using USFS facility
- Eliminate the need to construct a new tower
- Minimize the overall environmental impact of the project

In sum, there is no advantage to maintaining facilities on the summit when the same level of service can be achieved with a facility at West Point, one over which the BPA has sole control. Thank you for the opportunity to comment on this project.

Comment 33-01: Wulff

I'm a frequent visitor to Marys Peak. I and others hike to the summit of Marys Peak to get away from the Valley's manufactured facilities, to seek out the beauty of the landscape, the view, the wildlife, and in summer, the flowers. The summit is a destination for recreationists, whether they are local or come from afar. The East, North, and Meadow Edge Trails were all designed to provide access to the summit. I can't imagine recreationists going to the summit for a view of the facilities within the fenced area. From my perspective, reducing the footprint of facilities on the summit would be most desirable.

[Response to Comment 33-01 – Comment acknowledged.](#)

Comment 33-02: Wulff

I recognize the need for the Bonneville Power Administration to maintain the most up-to-date and secure capabilities in providing service to the public. With a choice of whether to co-locate within the USFS building or construct a new facility at West Point (Option 4C), I would wish for the latter for the following reasons:

- Significantly reduced on-going physical impact on the summit
- Easier maintenance access during inclement weather

[Response to Comment 33-02 – Comment acknowledged.](#)

Comment 33-03: Wulff

With a choice of whether to co-locate within the USFS building or construct a new facility at West Point (Option 4C), I would wish for the latter for the following reasons:

- Greater security of facility

Response to Comment 33-03 – See the response to Comment 13-07 regarding the communications site security of Marys Peak summit compared to West Point Spur.

Comment 33-04: Wulff

With a choice of whether to co-locate within the USFS building or construct a new facility at West Point (Option 4C), I would wish for the latter for the following reasons:

- Less conflict with other agencies currently using USFS facility

Response to Comment 33-04 – BPA is not aware of any conflicts between tenants at the communications site, nor does BPA anticipate future conflicts under Alternative 2A or Alternative 3C.

Under Alternative 2A, the communications equipment located in the existing BPA communications building would be separate from the communications equipment of the other agencies and tenants. The proposed BPA steel-lattice structure would be separate and independent from the other steel-lattice structures and would not be located in a position that would interfere with the beam paths of any other communications users at the summit.

Under Alternative 3C, the new building addition would have a separate entrance than the existing USFS building. Therefore, the BPA communications equipment would remain separate from the other tenants. The proposed BPA steel-lattice structure would be separate and independent from the other steel-lattice structures and would not be located in a position that would interfere with the beam paths of any other communications users at the summit.

USFS provided the following response – Currently, the MOU between BLM, City of Corvallis and USFS has been successful at limiting management conflicts.

Comment 33-05: Wulff

With a choice of whether to co-locate within the USFS building or construct a new facility at West Point (Option 4C), I would wish for the latter for the following reasons:

- Eliminate the need to construct a new tower
- Minimize the overall environmental impact of the project

Response to Comment 33-05 – Comment acknowledged.

Comment 33-06: Wulff

In sum, there is no advantage to maintaining facilities on the summit when the same level of service can be achieved with a facility at West Point, one over which the BPA has sole control.

Response to Comment 33-06 – As discussed in the EA and the response to comment 05-02, BPA would have some decreased communication capabilities if the communications site was moved from the Marys Peak summit to West Point Spur. BPA may or may not be able to connect to some parts of the Eugene region's communications network using signals to and from other BPA communications sites.

Comment 34: Smith

Please strongly consider and select Alternative 4. While safety, reliability, and security are primary criteria for selecting a site for communications equipment, selecting Alternative 4 meets these criteria while respecting Mary Peak as a natural, spiritual, and recreational area.

Thousands visit this peak annually and the site's buildings, tower, ice-bridge, waveguide, and equipment on top of Marys Peak degrade its natural beauty and spiritual qualities. For me Mary Peak and other mountains stand out as sacred places that I visit and view for their unique qualities and special connections to Nature and the universe.

Collocating communications equipment on the top of Marys Peak that is visited by thousands of people each year makes achieving safety, reliability, and security more difficult and is not compatible with encouraging appreciation of the special qualities of this place. The heavy footprint of this equipment degrade the spiritual, natural, and beauty of Marys Peak. This equipment for me places a scar on a wondrous place.

Alternative 4 is much more suitable for meeting the primary decision-making criteria and for maintaining Marys Peak for other extremely beneficial purposes.

Thank you for considering this perspective and preserving spirituality, beauty, and the special nature of this peak for myself and others who draw their strength from natural places.

Comment 34-01: Smith

Please strongly consider and select Alternative 4. While safety, reliability, and security are primary criteria for selecting a site for communications equipment, selecting Alternative 4 meets these criteria while respecting Mary Peak as a natural spiritual and recreational area.

[Response to Comment 34-01 – Comment acknowledged.](#)

Comment 34-02: Smith

Thousands visit this peak annually and the site's buildings, tower, ice-bridge, waveguide, and equipment on top of Marys Peak degrade its natural beauty and spiritual qualities. For me Mary Peak and other mountains stand out as sacred places that I visit and view for their unique qualities and special connections to Nature and the universe.

[Response to Comment 34-02 – Comment acknowledged.](#)

Comment 34-03: Smith

Collocating communications equipment on the top of Marys Peak that is visited by thousands of people each year makes achieving safety, reliability, and security more difficult and is not compatible with encouraging appreciation of the special qualities of this place. The heavy footprint of this equipment degrade the spiritual, natural, and beauty of Marys Peak. This equipment for me places a scar on a wondrous place.

[Response to Comment 34-03 – See the responses to Comment 13-07 regarding the communications site security of Marys Peak summit compared to West Point Spur.](#)

Comment 34-04: Smith

Alternative 4 is much more suitable for meeting the primary decision-making criteria and for maintaining Marys Peak for other extremely beneficial purposes. Thank you for considering this perspective and preserving spirituality, beauty, and the special nature of this peak for myself and others who draw their strength from natural places.

[Response to Comment 34-04 – Comment acknowledged.](#)

Comment 35: Snelling

My comments will be in bullet form. But first, in summary, **I favor alternative 4.**

- Alternative 4 provides the BPA with the greatest employee safety
- This alternative provides improved BPA continuity of communications service
- Alternative 4 provides the least construction cost
- This alternative reduces future maintenance cost
- **Very importantly Alternative 4 provides for greatest public safety**
- This alternative also provides reduced public health risk
- Environmentally Alternative 4 will be in compliance with U.S. Forest Service management obligations for a sensitive area

Thank you for considering my comments. I DO NOT wish or need a formal reply. An e-mail reply, while not requested, may be sent to [REDACTED]

Comment 35-01: Snelling

But first, in summary, I favor alternative 4.

[Response to Comment 35-01 – Comment acknowledged.](#)

Comment 35-02: Snelling

Alternative 4 provides the BPA with the greatest employee safety

[Response to Comment 35-02 – See the response to Comment 05-02.](#)

Comment 35-03: Snelling

This alternative (Alternative 4) provides improved BPA continuity of communications service

Response to Comment 35-03 – See the response to Comment 20-04.

Comment 35-04: Snelling

Alternative 4 provides the least construction cost

Response to Comment 35-04 – Comment acknowledged.

Comment 35-05: Snelling

This alternative (Alternative 4) reduces future maintenance cost

Response to Comment 35-05 – Maintenance costs would likely be comparable for all action alternatives.

Comment 35-06: Snelling

Very importantly Alternative 4 provides for greatest public safety

Response to Comment 35-06 – Public safety is of great concern to BPA. See the response to Comment 22-04 for mitigation measures that would be implemented to ensure public safety during construction of any of the action alternatives.

From a communications perspective, Alternative 4 does not provide as complete coverage as Alternative 2A or Alternative 3C. The risks to public safety from a power outage and to BPA maintenance workers is therefore greater under Alternative 4. Alternative 4 would be the safest alternative for members of the public who visit Marys Peak summit because the BPA summit communications site would be removed. Ongoing maintenance of the summit communications site by BPA would no longer be needed; however, other federal agencies and tenants would still need to access the summit communications site.

West Point Spur is in an area that is not open to the public for recreation, although some people walk around the gated area to visit the West Point meadows. Because there are fewer people on the access road to West Point Spur than on the access road to the Marys Peak summit, Alternative 4 would have less risk of a vehicular accident from construction or maintenance vehicles. Because there would not be a BPA VHF antenna at the Marys Peak summit under Alternative 4, there would be less potential for exposure of the public to VHF radiation, although exposure risk under any of the action alternatives is expected to be low.

Comment 35-07: Snelling

This alternative (Alternative 4) also provides reduced public health risk

Response to Comment 35-07 – See the response to Comment 35-06.

Comment 35-08: Snelling

Environmentally Alternative 4 will be in compliance with U.S. Forest Service management obligations for a sensitive area

The USFS provided the following response to Comment 35-08 – Thank you for your input.

Comment 36: Cafazzo

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

MARYS PEAK BPA COMMUNICATIONS SITE PROJECT

"I'd like to tell you..."

Do you have comments on any of the proposed alternatives?

I am strongly in favor of Alternative #4 which would relocate the BPA communications to West Point.

Do you have any comments on the description of the resources or analysis of potential impacts covered in the draft EA?

The Marys Peak Scenic Botanical Area should be restored. This is a unique plant community that draws thousands of visitors each year. The BPA building and tower should not be there.

Do you have ideas on other ways to lessen potential impacts to resources?

I have these other comments:

A return, postage-paid envelope was provided to submit your comments.

Name*: Katherine Cafazzo

Address: [REDACTED]

City: Corvallis State: OR Zip: 97330

* If you provide your name, it will be posted on the project website with your comment; addresses will not be posted.

How to comment:

Mail:	Bonneville Power Administration Public Affairs - DKE-7 P.O. Box 14428 Portland, OR 97291-4428	Toll-free:	800-622-4519
		FAX:	503-230-4019
		Online:	www.bpa.gov/comment

Please mention "Marys Peak BPA Communications Site Project" in your correspondence.

For Project information visit: www.bpa.gov/goto/maryspeak

The comment period ends November 12, 2020



Comment 36-01

I am strongly in favor of Alternative #4 which would relocate the BPA communications to West Point.

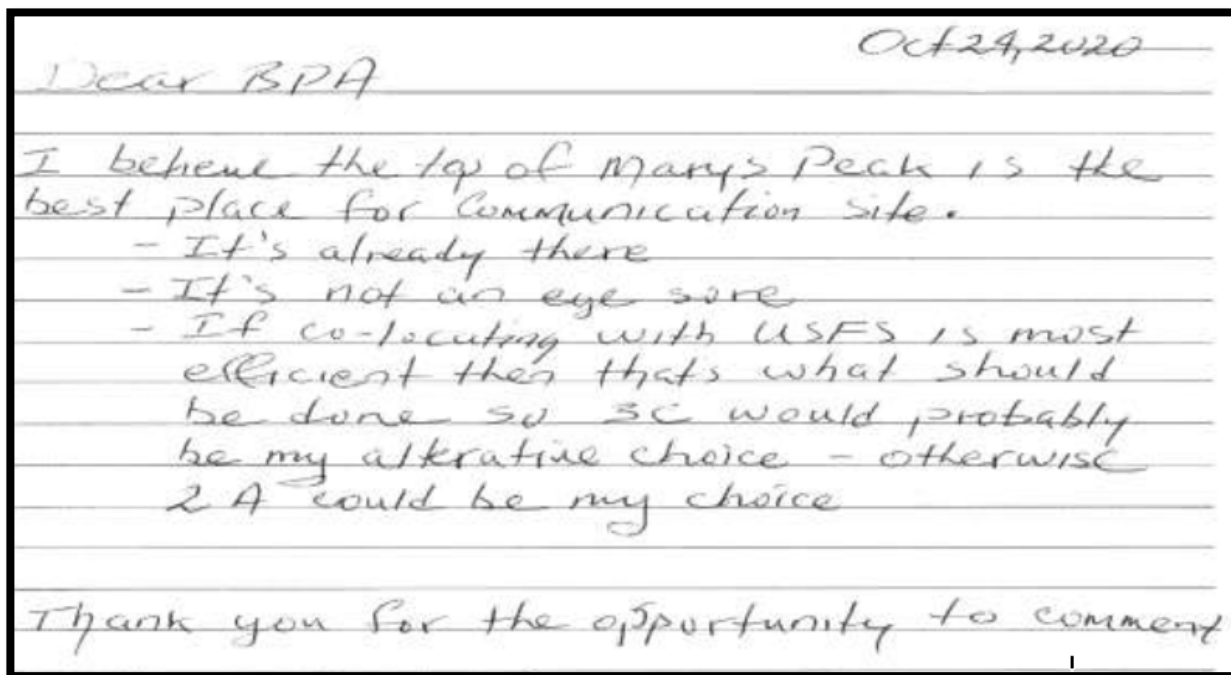
[Response to Comment 36-01 – Comment acknowledged.](#)

Comment 36-02

The Marys Peak Scenic Botanical Area should be restored. This is a unique plant community that draws thousands of visitors each year. The BPA building and tower should not be there.

[Response to Comment 36-02 – Comment acknowledged.](#)

Comment 37: Blanchard



Comment 37-01: Blanchard

Dear BPA, I believe the top of Marys Peak is the best place for communication site.

- It's already there
- It's not an eye sore

[Response to Comment 37-01 – Comment acknowledged.](#)

Comment 37-02: Blanchard

- If co-locating with USFS is most efficient then that's what should be done so 3C would probably be my alternative choice – otherwise 2A could be my choice.

[Response to Comment 37-02 – Comment acknowledged.](#)

Comment 38: Aolenback

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

MARYS PEAK BPA COMMUNICATIONS SITE PROJECT

"I'd like to tell you..."

Do you have comments on any of the proposed alternatives?

Alternative One/No Action preserve the Native Forest atop of Mary's Peak. The other Alternatives will cut trees and as the trees fill in the open space trees would be cut, also.

Do you have any comments on the description of the resources or analysis of potential impacts covered in the draft EA?

This is a popular recreation area along with a wildlife sanctuary and home to Oregon's State Champion Noble Fir tree.

Do you have ideas on other ways to lessen potential impacts to resources?

Alternative One/No Action

I have these other comments:

Please do not ruin this forest and peak with more infrastructure.

A return, postage-paid envelope was provided to submit your comments.

Name*: Makorany Aolenbach

Address: [Redacted]

City: W/ouae State: OR Zip: [Redacted]

* If you provide your name, it will be posted on the project website with your comment; addresses will not be posted.

How to comment:

Mail: Bonneville Power Administration Public Affairs - DKE-7 P.O. Box 14428 Portland, OR 97291-4428 Toll-free: 800-622-4519 FAX: 503-230-4019 Online: www.bpa.gov/comment

Please mention "Marys Peak BPA Communications Site Project" in your correspondence. For Project information visit: www.bpa.gov/goto/maryspeak

The comment period ends November 12, 2020



Comment 38-01: Aolenback

Alternative One/No Action preserve the native forest atop of Mary's Peak. The other Alternatives will cut trees and as the trees fill in the open space they would be cut, also.

Response to Comment 3-01 – Comment acknowledged.

Comment 38-02: Aolenback

This is a popular recreation area along with a wildlife sanctuary and home to Oregon's State Champion Noble Fir tree.

Response to Comment 38-02 – BPA acknowledges that Marys Peak is a popular recreation area that provides important wildlife habitat. Currently, noble fir trees are not listed as Champion Trees in State of Oregon (see <https://www.americanforests.org/get-involved/americas-biggest-trees/champion-trees-national-register/>).

Comment 38-03: Aolenback

Alternative One/No Action (In response to: Do you have ideas on other ways to lessen potential impacts to resources?)

Response to Comment 38-03 – Comment acknowledged.

Comment 38-04: Aolenback

Please do not ruin this forest and peak with more infrastructure.

Response to Comment 38-04 – Comment acknowledged.

Comment 39: Rudolph/Thompson Timber Company

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

MARYS PEAK BPA COMMUNICATIONS SITE PROJECT

"I'd like to tell you..."

Do you have comments on any of the proposed alternatives?

we prefer the option with the best ability for future communication and growth. All alternatives and existing solution is fine, preference for whichever solves the problem best.

Do you have any comments on the description of the resources or analysis of potential impacts covered in the draft EA?

no.

Do you have ideas on other ways to lessen potential impacts to resources?

no.

I have these other comments:

Focus on best site for times of need is fire, earthquake, flood, etc.

A return, postage-paid envelope was provided to submit your comments.

Name*: *Madeleine Rudolph*

Address: [REDACTED]

City: *Corvallis, OR* State: _____ Zip: _____

* If you provide your name, it will be posted on the project website with your comment; addresses will not be posted.

How to comment:

Mail:	Bonneville Power Administration Public Affairs – DKE-7 P.O. Box 14428 Portland, OR 97291-4428	Toll-free:	800-622-4519
		FAX:	503-230-4019
		Online:	www.bpa.gov/comment

Please mention "Marys Peak BPA Communications Site Project" in your correspondence.

For Project information visit: www.bpa.gov/goto/maryspeak

The comment period ends November 12, 2020



Comment 39-01: Rudolph

We prefer the option with the best ability for future communication and growth. All alternatives and existing solution is fine, preference for whichever solves the problem.

[Response to Comment 39-01 – Comment acknowledged.](#)

Comment 39-02: Rudolph

Focus on best site for times of need i.e. fire, earthquake, flood, etc.

[Response to Comment 39-02 – Comment acknowledged.](#)

Comment 40: Thompson

B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

MARYS PEAK BPA COMMUNICATIONS SITE PROJECT

"I'd like to tell you..."

Do you have comments on any of the proposed alternatives?
WAKES SENSE WE NEED BEST SITE FOR COMMUNIC

Do you have any comments on the description of the resources or analysis of potential impacts covered in the draft EA?
LOOKS GOOD

Do you have ideas on other ways to lessen potential impacts to resources?
NO

I have these other comments:
WE NEED BEST SITE FOR BEST COMMUNICATION
Especially to help in times of trouble, fire, earthquake
and more, etc. Get the best site for communication

A return, postage-paid envelope was provided to submit your comments.

Name*: Eric Thompson

Address: [REDACTED]

City: Cowwelle State: OR Zip: [REDACTED]


* If you provide your name, it will be posted on the project website with your comment; addresses will not be posted.

How to comment:

Mail: Bonneville Power Administration Public Affairs – DKE-7 P.O. Box 14428 Portland, OR 97291-4428	Toll-free: 800-622-4519	FAX: 503-230-4019	Online: www.bpa.gov/comment
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Please mention "Marys Peak BPA Communications Site Project" in your correspondence.
For Project information visit: www.bpa.gov/goto/maryspeak

The comment period ends November 12, 2020



Comment 40-01: Thompson

Makes sense we need best site for communication. In response to, “Do you have any comments on any of the proposed alternatives?”

[Response to Comment 40-01 – Comment acknowledged.](#)

Comment 40-02: Thompson

Looks good. In response to, “Do you have any comments on the description of the resources or analysis of potential impacts covered in the draft EA?”

[Response to Comment 40-02 – Comment acknowledged.](#)

Comment 40-03: Thompson

We need best site for best communication especially to help in time of trouble, fire earthquake, ????, etc. Get the best site for communication.

[Response to Comment 40-03 – Comment acknowledged.](#)

