

Glass Butte Communication Site Right-of-Way and RMP Amendment

Environmental Assessment DOI-BLM-ORWA-P000-2013-0017-EA

U.S. Department of the Interior, Bureau of Land Management
Prineville District, 3050 NE Third Street, Prineville OR 97754

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The Prineville District Bureau of Land Management (BLM) is accepting public input on this environmental assessment (EA), which analyzes the potential effects of a **planning level action** (an amendment the Resource Management Plan) and several **implementation level actions** (issuing communication facility grants/leases and requiring associated design features).

The BLM is accepting protests on the **planning level action** and comments on the **implementation level actions** through September 25, 2017. Please see the “Dear Reader” cover letter for instructions on how and where to send protests or comments, if you have any. After the BLM addresses public input, it will issue decisions. The implementation level decisions will have appeal periods, but the planning level Decision is final and will not.

Before including your address, phone number, e-mail address, or other personal identifying information in your comments on the implementation level actions, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee we will be able to do so.

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Chapter 1 Introduction

Background

The Bonneville Power Administration (BPA) and AT&T submitted applications to the BLM on March 31, 2015 and May 17, 2017, respectively, to construct, operate and maintain telecommunication facilities on public land atop Glass Butte, about 11 air miles southeast of Hampton, Oregon. The area is a designated communication site and there are three towers (40, 60, and 100 feet tall) and associated buildings on the butte already.

AT&T and BPA each propose to install a communication facility. AT&T's and BPA's facilities would be on .05 and .43 acres respectively, directly adjacent to each other. These acreages reflect only actual building and tower footprints. Each of the two facilities would include a 100-foot steel tower, propane tanks, and a building housing a generator and digital communication equipment. Power would be provided via about 60 feet of buried electrical line from an existing electrical power transformer vault southwest of the proposed new facilities. The Oregon Department of Transportation (ODOT) has applied to be co-located in the facility BPA proposes to construct. AT&T and BPA would jointly improve, use, and maintain 10.6 miles of an existing access road to the site from the highway. There would be a stipulation for site reclamation in the event the applicants abandon or relinquish their grant/lease.

Other actions the BLM would require the lease/grant holders to complete include conifer removal on 45 acres (to compensate for effects to Greater Sage-grouse), closure of a small section of duplicate route, and application of seasonal limits on construction activity. Another stipulation would be a requirement to adhere to a Programmatic Agreement (PA) that provides a plan to mitigate adverse effects to historic properties (see additional information on the PA later in this chapter and in Appendix D). Actions in the PA include:

- Collection of oral histories from each of the three tribes;
- A requirement to have three tribal cultural resource monitors (one from each tribe) on site to monitor road improvement and construction activities; and
- Evaluation of a proposed Glass Buttes Traditional Cultural Property (TCP) and determination of its eligibility for inclusion into the National Register of Historic Places pursuant to the National Historic Preservation Act and 36 CFR 800.

The BLM would issue a 30-year communication site **lease** to AT&T, a 30-year renewable right-of-way (ROW) **grant** to BPA, and a 30-year renewable right-of-way (ROW) **grant** to ODOT. The BLM would issue a three year temporary right-of-way **grant** to AT&T, and one to BPA, authorizing construction activities, including the communication site building and tower, road upgrades, use of three material/equipment staging areas, removal of conifer, and rehabilitation of a small spur route. Prior to issuing the grants/lease, the BLM would amend the Visual Resource Management (VRM) Class (see definitions in Appendix C) at the top of the butte from II to IV on 17.5 acres (see Purpose and need section, below).

All of the proposed actions summarized above are described in more detail in Chapter 2.

The **BPA** is a federal agency within the US Department of Energy and is a cooperating agency in the development of this EA. It owns and operates more than 15,000 circuit miles of transmission lines in the Pacific Northwest, providing power to utility customers throughout the region. BPA's radio communications facilities provide critical power system monitoring, line crew communications functions, and direct the instantaneous routing and delivery of electrical power throughout the western states. To help maintain the integrity and performance of BPA's radio communications, BPA has been upgrading its facilities from analog to digital, including facilities on the microwave radio communication path through Harney, Lake, Crook and Deschutes counties. One facility on this path, BPA's existing facility on Hampton Butte (about 10 miles north of Glass Butte), cannot be upgraded on-site due to "path loss" issues (terrain obstructions that cause reflection and refraction of radio signals). This path loss is a more significant problem with digital equipment than with analog equipment due to its higher degree of sensitivity, so the Hampton Butte facility would not be able to operate effectively if converted to digital. The facility at Glass Butte would mean BPA would abandon the existing Hampton Butte facility. BPA researched other locations but Glass Butte was the only viable placement option. The existing communication facilities on Hampton Butte would be left in place; BLM uses these facilities for radio coverage for employees working on the District, and would continue to do so.

The Glass Butte facility would provide BPA with upgraded telecommunications services to assure the secure and reliable operation of its power transmission network in Oregon and adjoining states. The proposed BPA facility would also host the State of Oregon's State Radio Project that Oregon Department of Transportation (ODOT) administers. That project is part of a statewide initiative to enhance emergency responder and other crucial communications services throughout the state. ODOT would be a tenant of BPA within the BPA facility, and BLM would issue ODOT its own ROW grant, permitting ODOT's operations on Glass Butte.

AT&T is a publically owned corporation that provides cellular data phone service to customers. It currently has a temporary permit from the BLM to provide cellular communication services from Glass Butte using a temporary mobile communication tower and equipment. This temporary use permit expires in December 2018. AT&T is now applying for a long term lease to install permanent facilities to replace the temporary tower. AT&T would remove the temporary tower and associated equipment when its new facility is functional.

Purpose and need

For a change in VRM Class

The first decision for the BLM to make is whether to amend the RMP's VRM Classification on Glass Butte. The need for an RMP amendment is to allow BLM to consider authorizing new facilities in an area that already has them. The purpose of the amendment to the Brothers/La Pine RMP is to change the VRM Class on top of Glass Butte so all existing and currently proposed communication facilities on the butte would be within VRM Class IV which says

“Management activities may attract attention but should not dominate the view of the casual observer.”

Section 102 of the 1976 Federal Land Policy & Management Act (FLPMA) sets forth the policy for periodically projecting the present and future use of public lands and their resources through a planning process. FLPMA Sections 201 and 202 are the statutory authorities for land use plans prepared by the BLM. The purpose or goal of the land use plan is to ensure agencies manage public lands and resources in accordance with FLPMA and the principles of multiple use and sustained yield.

For responding to requests for communication site leases and/or right-of-way grants

The second decision for the BLM to make is whether to grant, grant with conditions, or deny the applications. The need for this action is to respond to applications. This need arises from FLPMA, which establishes a multiple use mandate for management of federal lands.

Pursuant to 43 CFR § 2805.10, if BLM issues a grant or lease, the BLM decision maker may include terms, conditions, and stipulations which she or he determines to be in the public interest. This includes modifying the proposed use or changing the route or location of the facilities on public land. The purpose of this action, pursuant to 43 C.F.R. § 2801.2, is to provide the applicants with grants/leases and to control their use on public lands in a manner that:

- a) protects the natural resources associated with public lands and adjacent lands, whether private or administered by a government entity;
- b) prevents unnecessary or undue degradation to public lands;
- c) promotes the use of rights of way in common, considering engineering and technological compatibility, national security, and land use plans; and
- d) coordinates, to the fullest extent possible, all BLM actions under the regulations in this part with state and local governments, interested individuals, and appropriate quasi-public entities.

For including conifer removal and road closure

The Oregon Greater Sage-grouse Approved Resource Management Plan Amendment (ARMPA) (September 2015) amended the Brothers/La Pine RMP. It requires a net conservation gain for projects that authorize new human activities in sage-grouse General Habitat Management Areas (GHMA). In order to conform to the ARMPA, the BLM needs to ensure that all projects in sage-grouse habitat include actions to achieve net conservation gain for sage-grouse. Although there are a variety of methods to achieve net conservation gain, conifer removal, road closure, and reclamation within the project area would be most effective. The BLM would make a decision as to whether or not implement these actions.

Decision to be made

The BLM will make two types of decisions following this EA:

1. One planning level decision regarding whether to amend the Brothers/La Pine RMP by changing the Visual Resource Management (VRM) Class from II to IV on 17.5 acres; and

2. Several implementation level decisions on whether to deny the grant/lease applications (Alternative 1), or grant them with associated design features (Alternative 2). The decisions will describe protest and appeal opportunities.

Consultation, scoping, and issues for analysis

Consultation with Native American Indian tribes began in spring 2013 and is ongoing. Hereafter, the tribes are listed in alphabetical order and include the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes. The BLM met with the tribes on numerous occasions and modified alternatives to minimize potential conflicts. The Advisory Council on Historic Preservation (ACHP) recommended development of a Programmatic Agreement (PA) for this project, and they and the Oregon State Historic Preservation Office (OSHP) have been actively consulting with the BLM regarding the proposed action and the PA. The PA would legally bind the BLM and the grant/lease holders to complete and adhere to a mitigation plan that would mitigate any adverse effects to historic properties prior to the BLM issuing a Notice to Proceed permitting any ground disturbing or construction activities under the proposed action. Pursuant to 36 CFR Part 800, OSHP and the ACHP would sign the PA as invited signatories, and the tribes would be invited to be concurring parties to the agreement.

The BLM officially began external scoping on this project in July 2013 with publication in the Federal Register of a Notice of Intent to amend the Brothers/La Pine RMP. At that time, BLM also issued a media release and sent a scoping letter to 206 addresses, including private landowners, grazing permittees, and right-of-way holders in the area, county governments, Oregon agencies (e.g., Oregon Department of Fish & Wildlife), national agencies, and congressional representatives, local and regional organizations (hunting, water, wildlife, etcetera), and individuals.

In response to the scoping request, BLM received two comment letters:

1. **Oregon Wild:** Minimize ecological, cultural, and scenic impacts, and impacts on other uses in the area. Consider the cumulative effects of the VRM amendment and potential future developments in the area. Determine the carrying capacity and adopt a maximum footprint for future development of all types of built infrastructure on Glass Buttes. Include a decommissioning plan to restore the sites when the technology becomes obsolete or is abandoned. Keep lines underground as much as possible, and minimize the adverse effects of roads and weeds.
2. **US Fish & Wildlife Service:** Consider effects on sage-grouse from electromagnetic radiation from powerlines. Consider potential for sage-grouse and migratory bird collisions with towers. Prepare a mitigation and monitoring plan and an Avian Protection Plan.

The Environmental Protection Agency sent an email during the scoping period saying it had no comments on the project.

The BLM considered scoping comments in the design of alternatives in the EA. In many cases, scoping comments led to the incorporation of project design features into the proposed action, Alternative 2 (see Chapter 2). For example, the EA includes reclamation, as suggested by Oregon Wild.

The following issues are considered in detail in Chapter 3 of this EA.

Native American concerns and cultural resources

- How would construction of new communication facilities affect traditional religious practitioners at and away from the proposed communication facilities?

Historic properties

- How would ground-disturbing access road improvements and construction of new communication facilities affect historic properties listed or eligible for listing in the National Register of Historic Places?

Visual resources

- What effect would changing the Visual Resource Management classification from Class II to Class IV have on scenic quality?
- How would the installation of new structures on Glass Butte affect scenic quality?

Wildlife

- How would sage-grouse be affected by activity associated with communication facility construction, road upgrades and increased road use? How would conifer removal and road closure mitigate the effects to sage-grouse from the development of the communication sites and the development and increased use of an access road?
- What effect would this project have on nesting neotropical birds?
- What effect would construction activity and conifer removal have on elk and mule deer?

Recreation

- How would construction activities affect primitive camping, rockhounding, and motorized recreational use opportunities?

Issues considered but not analyzed in detail

Several issues were raised during scoping but are not considered in detail in the EA, as described below.

Wilderness characteristics

- How would the project affect wilderness characteristics?

There are no wilderness characteristics in the project area, therefore the alternatives would not have the potential to affect wilderness characteristics, and the issue is not analyzed in further detail in this EA. Explanation: In 1979, the Prineville BLM District conducted an intensive inventory evaluating wilderness values on BLM lands in the Glass Buttes area. Wilderness Inventory Unit OR-050-064 encompassed 10,898 acres of public land entirely within the BLM

Prineville District. In 2008, the BLM re-analyzed the past 1979 Wilderness Inventory Unit under new policy direction. This updated Wilderness Inventory Unit was numbered OR-054-006, and recorded a wider geographic area, encompassing 16,496 acres of BLM-administered public land. The 2008 inventory concluded that the unit does not have wilderness characteristics, which was the same determination made in the 1979 inventory.

Prior and existing uses

- How would the new communication facilities affect other grant/lease holders on the top of the butte?

All concerns have been avoided; therefore the issue is not considered further in this EA. BPA and AT&T have been in contact with the existing users on the mountain to ensure that any new construction would not interfere with the operation and use of existing facilities.

Chapter 2 Alternatives

This chapter describes a no action alternative that would continue existing management regarding visual resource management and deny the applications, an action alternative that would amend the VRM Class on 17.5 acres and issue the grants/lease as requested and with some stipulations. Several other alternatives were considered but eliminated (see later in this chapter), including one where the towers would be on the saddle instead of the top of Glass Butte, and one where the towers would be on a different butte entirely. The proposed action, Alternative 2, would meet the purpose and need described in Chapter 1.

The table below summarizes the alternatives considered in detail in this EA. In Alternative 2, BLM would grant AT&T and BPA each a long term (30-year) grant/lease for the operation and maintenance of the facilities. The BLM would also issue AT&T and BPA each a short term (3-year) ROW grant for construction activities.

Table 1. Summary of alternatives.

	Category	Alternative 1	Alternative 2
VRM Class	VRM Class	Do not amend RMP VRM Class.	Amend RMP to change VRM Class from II to IV on 17.5 acres on top of Glass Butte.
30-year grants/lease	Applications	Deny the applications.	Issue a lease to AT&T, a grant to BPA, and a grant to ODOT.
	Communication facilities	No action.	Allow grant/lease holders to use, operate, and maintain the towers, communication buildings, propane tanks, and buried electrical lines.
	Access road	No action.	Allow all three holders access on and maintenance of 10.6 miles existing road.
	Reclamation	No action.	Require AT&T and BPA to remove facilities and rehabilitate sites upon

			grant/lease relinquishment or abandonment.
	Programmatic agreement	No action.	Require AT&T and BPA to fund oral history studies with each tribe; evaluation of the area as a TCP; and tribal monitoring during construction.
	Conifer removal and closure of duplicate route	No action.	Require AT&T and BPA to remove conifer on 45 acres and close and rehab 1/5 mile of duplicate route.
3-year grants	Applications	Deny the applications.	Issue one ROW grant each to AT&T and BPA.
	Road improvement	No action.	Allow AT&T and BPA to use of 10.6 miles of existing road for access during construction. Allow them to improve 3.93 miles of this road, reconstruct 0.05 miles, and improve pullout at tower/building site, staying within existing road width.
	Staging areas	No action.	Allow use of three staging areas.
	Communication site structures	No action.	Allow construction of towers, communication buildings, propane tanks, gravel pads, buried electrical lines.

Alternative 1, no action

The BLM would not amend the Brothers/La Pine RMP and it would deny the applications.

Alternative 2, proposed action

Summary

The proposed action includes:

- The planning level action of amending the **VRM Class** in the RMP, and
- The implementation level actions of issuing **30-year grants/lease** to allow the requested uses, and **3-year grants** to allow construction activity. A number of design features are included in the alternatives and would be added as stipulations to the grants/lease.

These actions are described in detail below.

VRM Class

The BLM would amend the Brothers/La Pine RMP to change the VRM Class definitions for 17.5 acres on top of Glass Butte from II to IV (Map 3).

30-year grants/lease for communication facilities and road access

The BLM would issue AT&T a 30-year renewable communication site lease, and issue BPA and ODOT each a 30-year renewable right-of-way grant. The grants/lease would allow operation, maintenance, and reclamation (in the event of grant/lease relinquishment or abandonment) of communication facilities (communication buildings, radio towers, propane tanks, rock surfacing, electrical service) atop Glass Butte, and use and maintenance of an existing access road. Each of these components are described in more detail below. The 30-year lease to AT&T and the 30-year grant to BPA would each include stipulations that the holder would adhere to the Programmatic Agreement (to protect tribal, cultural and archaeological resources).

Each of the two communication facilities (.05 acres for AT&T and .43 acres for BPA) would be within the area of existing radio station facilities on Glass Butte. The facilities would not be fenced (minimize habitat fragmentation and reduce above-ground obstacles to birds in flight). The facilities would be located as close as possible to existing access roads to minimize unnecessary ground disturbance and clearing activities. The facilities would be unmanned, automated, and controlled remotely. A radio station operator would visit the facilities as needed weekly or monthly. Maintenance crews would perform maintenance on equipment as necessary.

Communications buildings

AT&T would have one, single-story 10-foot wide by 25-foot long by 12-foot high building, and BPA would have one, single-story 20-foot wide by 52-foot long by 15-foot high building. Each building would be concrete masonry unit block veneer with standing seam pitched metal roof. Each building would contain a communications room (digital microwave radios, communications racks, channel banks, fuse panel, and transmission cable dehydrator system) and a room containing a 50-kilowatt emergency generator (backup in event of loss of primary electrical power service). BPA's building would also include a tenant room occupied by the ODOT State Radio Project. Exterior lights would have a shielded beam pointed at and only lighting the immediate area in the vicinity of the door. These lights would be motion activated and have a limited time duration of five minutes or less.

Radio towers

Each facility would have a 100-foot tall self-supporting steel lattice tower with a 35-foot by 35-foot concrete foundation. The towers would use self-supporting steel lattice design that does not require the use of guy wires. The towers would not have solid or pulsating lights on the radio towers (FAA regulations do not require lights on towers under 200 feet). The BPA tower would host two BPA tower antennas and three ODOT tower antennas.

Propane tanks

Each facility would have two 2,000-gallon propane tanks installed on a concrete pad at least 25 feet from critical equipment. The propane would power the emergency generator if backup power were needed.

Rock surfacing

Each facility would have a graded and gravel surfaced entrance from the existing access road, and a parking area. BPA's graded and rock area would be 100 feet by 125 feet. Fill materials would primarily be from materials excavated on site, except when visual concerns require a different color material. Gravel would be obtained from a BLM approved site where there would not be effects on sage-grouse. The gravel would be weed free, and a color that matches the existing site.

Electrical service

Underground electricity spur lines would provide power to each of the new facilities. These spur lines would begin at an existing Harney Electric Cooperative Inc. electrical power transformer vault approximately 60 feet southwest of the proposed new BPA and AT&T facilities and terminate at each respective facility. Underground conduit would be installed throughout each communication facility's yard to connect the proposed communications building and radio tower to the fiber optic vault and electrical service vault in order to supply primary electrical power service and fiber optic cable for BPA and ODOT operations, and for AT&T's operations. A two-foot wide, three-foot long, one-foot deep concrete vault would be installed underground in the proposed BPA site to connect to ODOT's communication equipment in the proposed BPA communications building. Harney already has a ROW grant; it would be modified to reflect the new lines.

Access road

The 30-year ROW would allow AT&T, BPA and ODOT to use and maintain the 10.6 mile existing access road from Highway 20 to the proposed sites at such road's present widths (about 14 feet wide for an initial length of approximately 3 miles, then narrowing to 8 feet wide for its remaining length). The ROW holders would not be permitted to expand the road beyond its current prism, width, and drainage. The road would continue to be available to the public.

As stated in the BLM's 2010 Glass Butte Communication Site Management Plan, "Maintenance and repair would keep the road in a serviceable condition and prevent deterioration from erosion. Maintenance would include designs for long-term erosion control which may include drainage ditches as necessary to divert water from the road to vegetated areas. Maintenance would include spot graveling to fill pot holes and periodic road grading in areas where it is needed to ensure that they can access their facilities. Users who damage or disturb the access road, or any associated structures, such as ditches, culverts, roadside vegetation, signs and/or underground utilities or facilities, would be required to repair the road or associated structures, to conditions equal to or superior to those prior to any damage or disturbance. This work would be pre-approved by the BLM and done according to applicable road maintenance standards and may require the appropriate NEPA analysis."

The maintenance description would be included in stipulations in the ROW grant. Use on the road would increase for the short term (during construction, as described below), but not noticeably for the long term (increase of about three vehicles a month).

Reclamation

The BLM expects AT&T and BPA to request to renew their grant/lease indefinitely. However, at some point, technology may change and they may relinquish their lease/grant. The reclamation plan addresses that eventuality.

When AT&T, BPA, or subsequent holders abandon or relinquish their grant/lease, the holder would restore the area to its condition prior to the grant/lease issuance by removing all structures, gravel pads, access driveways, electrical vaults and other items associated with the grant/lease. The holder would clear and clean manufactured debris from the surface, and treat the area to ensure reasonable soil stabilization and re-vegetation with similar typical local materials. The BLM would not require the holders to restore the access road; it would be left as is. Additional details are contained in a reclamation plan that would be a condition of the ROW grant.

Programmatic Agreement

See Appendix D.

Conifer removal and duplicate route closure

To compensate for adverse effects to sage-grouse habitat, as described below in Section III., Wildlife, the ROW holders would fund 45 acres of conifer removal and closure of several steep/redundant spur roads (see Map 2). Road closure would be accomplished by placing boulders and scattering BLM approved seed on about 1/5 mile of road section).

Conifer removal would consist of cutting all conifer under 10 inches in diameter at breast height (dbh). Once cut, the conifer would be lopped and then scattered. Lopping consists of cutting and limbing branches from each conifer on foot with a chainsaw. Scattering consists of spreading cut limbs by hand. The trees would be cut in an irregular pattern with varied density, and the limbs lopped and scattered. Due to the light to moderate amount of juniper in the identified removal area, no burning would be associated or required. Actions associated with lopping and scattering (increased foot traffic and noise from chainsaws) would only be temporary, lasting up to 2-3 days. In order to be consistent with the Brothers/La Pine RMP and the 2015 Oregon Greater Sage-grouse Approved RMP Amendment (GRSG RMPA), the activities related to mitigation (design features) for this project would follow the same timing limited stipulations, RDFs for Greater Sage-grouse, and PDFs for general wildlife (pg. 15).

The area identified for conifer removal would be surveyed for nesting activity for neotropical migrants. Trees with raptor nests would be flagged and not removed. If found occupied, work near those individual trees would occur once the breeding season is finished, or after birds have fledged.

BLM mitigation policy H-1794-1 states, "As appropriate, the BLM should ensure that the responsible party is obligated to maintain the mitigation's durability and correct any loss of durability." To ensure the durability of the mitigation, the grant/lease holder would revisit the site every 20 years and cut any conifer trees exceeding 10 inches dbh. In order to limit the amount of ground disturbance, this work would be completed on foot by hand with chainsaws.

Three year grants for construction activities

The BLM would issue a three-year ROW grant to AT&T and another to BPA, allowing them to each upgrade the road, use staging areas, and construct their communication facilities.

Construction activities would be very similar for both the BPA and the AT&T communications facilities, as described in the following paragraphs. Building and tower construction would take about four months, and then another two months for post-construction electrical work and testing (install antennas and transmission coax cables on the tower, populate the building with electronics equipment, align microwave dishes, finish emergency generator, and test everything).

Construction would take place up to 10 hours a day, seven days a week. Construction of foundations, building, tower and equipment would involve up to eight individuals working on each facility at any one time. These individuals would be housed in two 10-foot by 12-foot trailers parked within the designated staging areas. Septic would either be contained within the trailers, or the applicants would provide a portable outhouse next to the trailer during the construction phase.

AT&T and BPA would conduct a preliminary geotechnical investigation at each of their proposed radio station sites by drilling two borings at each of the proposed communications building locations and one boring at each of the proposed tower locations. A truck-mounted hollow-stem auger and wire-line coring drill tools would be used to drill the borings, which would be 8 inches wide, and 20 to 30 feet deep. Borings would be backfilled in accordance with state regulations.

The heaviest construction period would be in the first month when AT&T and BPA would dig the building and tower foundations and pour concrete. If feasible, large equipment such as excavators and backhoes needed at each site would make one trip to the site and remain until the construction is finished. Utility trucks would make up to three trips a day to each facility project area. Approximately 12 cement truck trips per facility location would be needed to haul the cement for the foundations. Each cement and rock haul truck has a capacity of 8-10 cubic yards.

Equipment anticipated to be used for construction of each facility includes a backhoe, excavator, cement trucks, and utility trucks; however, since construction would be contracted out, specific equipment used would depend on the contractor. With the exception of the use of the staging areas noted below, all work would be completed within the proposed ROW boundary for each facility.

There would be three temporary equipment staging areas during construction. One staging area would be near the tower site. This staging area would be about 35 feet wide by 75 feet long (2,600 square feet) and located about 300 feet southeast of the construction area for BPA's facilities. A second staging area would be located along the east side of the access road to the Glass Butte communications sites area near its intersection with Highway 20. This intersection is at approximately milepost 77 of Highway 20. This staging area would be about 60 feet wide by 120 feet long (7,200 square feet). The third staging area would be about 1,500 feet

north of the first staging area. It would be 100 feet long by 220 feet wide (15,500 square feet). Material staging would all be within the communication facility footprint. AT&T and BPA would use the same staging areas.

Site grading at the BPA site would create about 125 cubic yards of excess fill material; a similar amount would be produced at the AT&T site. Rocks and soil excavated while building the facilities' foundations would be reused to grade around the new facilities as much as practicable; for example, larger rock material would be distributed along the planned 2:1 fill banks for the sites as much as possible. Excess rocks and soil would be removed from the area and lawfully disposed of by the projects' contractors (e.g., at State/County approved disposal sites). Weed free gravel would be used to stabilize the soil around the new facilities. The new facilities' site areas would be rocked after construction with three inches of rock. Disturbed areas would be restored to the natural grade through the use of native soil, as much as possible, and would be re-vegetated using a BLM approved seed mix. Native vegetation removed during construction would be used for site restoration and erosion and sediment control.

Construction activities at each respective facility project location would generate a sound intensity decibel (dB) reading during operation of up to 100 dB at a ten-foot distance from the boundary outline of each facility's proposed ROW siting area. Using standard noise attenuation, the foregoing sound intensity measurement would drop off by six dB per doubling of distance from the sound source.

Electrical service -- Harney Electric would install the spur lines using a motorized trenching machine. The machine would simultaneously dig a narrow 2.5-foot wide by 4-foot deep trench, place in the trench a two inch diameter protective plastic conduit containing the electric power line (1/0 gauge cable rated for 14.4 kV) for each facility, and close the trench behind the installation.

Access road

BPA's and AT&T's ROWs would each include the right to upgrade, use and maintain the 10.6 mile existing access road from Highway 20 to the proposed sites at such road's present widths (about 14 feet wide for an initial length of approximately 3 miles, then narrowing to 8 feet wide for its remaining length). The ROW holders would not be permitted to expand the road beyond its current prism, width, and drainage. Maintenance and upgrades are described in more detail below, and in the Glass Butte Communication Site Management Plan under Section VI(K), and would be included in stipulations in the ROW grant. The road would continue to be available to the public. Use on the road would increase for the short term (during construction, as described elsewhere), but not for the long term.

Limited specific access road improvement work would be conducted near the entrance to each of the proposed facilities locations for site accessibility, due to the steepness of the existing terrain in that area. The road improvements would be within the existing road prism (width varies 8-10 feet). As an additional safety improvement, both BPA and AT&T would be allowed to create a vehicle pull out directly across from the proposed site entrance. The pull out would

be about eight feet wide and 85 feet long. Weed free gravel would be used and the gravel's color would closely match the existing surface material color.

The above noted road improvements and pull out area would require about 30 cubic yards of fill material. This fill material would come from the excess excavated material of the proposed new radio sites. An additional 30 cubic yards of "2 1/2 inch minus" road rock would also be added to the road in the road improvement area; such rock would be brought to the site from a BLM approved rock source.

For the access road leading up to the mountain, several areas would need to be improved or reconstructed to allow the safe passage of vehicles and equipment needed for construction. Of the 10.6 miles of access road, 6.64 miles would not need any work, 3.93 miles would need to be improved, and 0.05 miles would need to be reconstructed.

Road improvement would involve mostly blading and rocking of the existing road surface. In some cases large rock that exists within the road surface would need to be removed, before blading and rocking. The existing road prism would be maintained and no work would take place outside of it.

One small steep section of road approximately 280 feet long is severely rutted from runoff and vehicle use, and needs to be reconstructed. This would involve blading the road surface, and sloping it outwards to improve drainage followed by installation of two waterbars and a rock surface. Some work would occur outside (3-5 feet) of the existing road prism in this area.

Design features included in Alternative 2

The grant/lease holders would be required to adhere to the following design features. These are in addition to ones listed earlier.

Wildlife

- Deer and elk winter range (which includes the entire project area) would be closed to construction activities from January 1 to April 30. ROW holders could request an exemption. Exemptions would be considered depending on snow depth, temperatures, animal conditions, and other factors.
- Greater Sage-grouse breeding habitat would be closed to all construction activity from March 1 to May 15 (or when no sage-grouse are attending the lek as documented by a BLM or ODFW Wildlife Biologist) from two hours before sunset to two hours after sunrise at the perimeter of an occupied or pending lek. Breeding habitat is those areas within four miles of occupied and pending leks. The area where this restriction applies is shown on Map 2.
- Greater Sage-grouse brood-rearing habitat would be closed to all construction activity from July 1 to October 31. See Map 2.
- Greater Sage-grouse winter habitat would be closed to all construction activities from November 1 to February 28. See Map 2.
- Minimize or avoid unnecessary ground disturbance and clearing activities during design and construction of communications buildings and radio towers.

The following “Required Design Features” from the Oregon Greater Sage-grouse Approved Resource Management Plan Amendment (ARMPA, Appendix C) (September 2015) were adopted into the design of the alternatives and/or would be included as stipulations of the ROW grants.

- Cluster disturbances, operations, and facilities.
- Restrict the construction of fences and tall structures to the minimum number and amount needed. Tall structures are any man-made structure that has the potential to disrupt lekking or nesting birds by creating perching and nesting opportunities for predators (e.g., raptors and ravens) or to decrease the use of an area by sage-grouse. This includes communication towers, meteorological towers, electrical transmission or distribution towers, power poles, wind turbines, and associated structures.
- Utilize perch deterrents or other anti-perching devices that discourage raptors and corvids from nesting.
- Clean up refuse and eliminate subsidized food sources for sage-grouse predators.
- Use existing roads or realignments or existing roads to the extent possible.
- Design roads to an appropriate standard no higher than necessary to accommodate their intended purpose.
- Train all personnel and contractors on sage-grouse biology, habitat requirements, and identification of local areas used by the birds.
- Power wash all vehicles and equipment involved in land and resource management activities prior to allowing them to enter the project area to minimize the introduction and spread of the invasive plant species (see additional requirements under “invasive and noxious weeds.”)
- Use...[geotextile or composite] mats to reduce vegetation disturbance, reduce soil compaction and maintain soil structure to increase likelihood of vegetation reestablishment.
- Use dust abatement practices on roads and pads when necessary.
- Remove all branches on cut juniper stumps to prevent regrowth. Remove branches on cut trees that extend more than four feet above the ground or more than one foot above the general height of the sagebrush to eliminate potential perch sites for sage-grouse predators.
- Include restoration objectives to meet sage-grouse habitat needs during reclamation. Address post-reclamation management in reclamation plan so that goals and objectives enhance and restore sage-grouse habitat. [see section above on decommissioning].
- Restore areas at final reclamation and eliminate duplicate roads to restore the predisturbance landforms and desired plant community.
- Restore disturbed areas at final reclamation, if necessary, to establish seedlings more quickly.
- Use mulch to expedite reclamation and protect soils.

Invasive and noxious weeds

Invasive plant species such as cheatgrass have been observed on areas included in the project area; this and other species may establish and/or spread due to disturbance along and use of

the roadways. Utilize methods for disposal of vegetation that prevent spreading or re-infestation of unwanted vegetation:

- All vehicles, transport equipment used in access, construction, maintenance and operations of project would be thoroughly cleaned prior to moving equipment across or onto BLM managed lands. Washing and/or brushing equipment to remove material that can contain weed or other propagates helps insure equipment transported across or onto BLM managed lands are weed and weed seed free. Use high pressure washing to treat the insides of bumpers, wheel wells, undercarriages, inside belly plates, excavating blades, buckets, tracks, rollers, drills, buckets, shovels, any digging tools, etc., to remove potential weeds, seeds, and soil carrying weed propagules, and vegetative material.
- In areas where activities disturb or remove vegetation, exposed soil would be minimized. A method of soil stabilization, approved by BLM, would be employed to effectively control erosion and weeds. Gravel, cinders or equivalent mulch are acceptable materials to be placed along pads and roadways.
- The ROW holders would inform BLM if noxious weed species are observed, to ensure the population is recorded and to decide on method of treatment. Following the recording and/or consultation with BLM, the ROW holder, per agreement, would be responsible for weed treatment within the area specified in the ROW grant. All treatments would adhere to federal guidelines and regulations and ensure that BLM-approved chemicals are used.
- All disturbed areas would be seeded with native grass species in the late fall to deter erosion and curtail the introductions of weeds. Native varieties of certified seed would be used, and BLM staff would review and approve any seed mixture and dispersal method prior to purchase and implementation. Seeding would be evaluated after the second year's growth and repeated if necessary, as authorized by BLM staff.

Visual resources

- Paint buildings a dark color to blend in with the background landform. For BPA building use Cool Weathered Copper/Rawhide Ash Gray or Cool Zinc Gray color AEP Span Metal Roof.
- Screen propane tanks or paint them a darker color to blend with the background landform or vegetation. Screening could be low walls, fences, or vegetation. Paint on walls or tanks would be the same colors as the buildings.
- Use a flat or low pitch roofline which enables reduced building height.
- Use dark gray galvanized finish for all lattice structures. Galvanized finish should be dark grey matte finish, not silver or shiny. Finish should be specified and verified as non-specular. Dish antennas on the lattice towers would be gray.
- BLM would approve final colors and materials after conducting a site study for color and texture. In general, colors would be earth or vegetation toned. Approved colors apply to all structures, including buildings, roofs and galvanized attachments to the buildings such as vents.

- If the exposed rock face on cut slopes for the building pads are a lighter color than the surrounding landform, and create an unacceptable color contrast, an oxidizing color treatment to darken these exposed rock surfaces would be required by BLM.
- Use surface salvaged rock and brush on fill slopes and trench lines to soften the color and texture contrast. Place salvaged rocks so their previously exposed faces are up, to retain the look of the surrounding landscape. This includes all fill slopes at building pads, the top of any trenched utility lines and the side of site access roads that have been widened for project access.
- Dispose of all spoil materials off-site.
- The BLM would require existing grant holders on Glass Butte to modify their existing facilities as listed below when grants/leases are renewed or transferred:
 - Screen propane tanks or paint them a darker color to blend with the background landform or vegetation. Screening could be low walls, fences, or vegetation on the downhill side of tanks. These screens would be the same color as the buildings on the site.
 - Paint buildings a dark color to blend in with the background landform better. Paint the buildings on the north side of the summit a darker color than the buildings on the south side of the summit. Choose a matching overall color for each side of the summit to decrease the contrast of the existing facilities. Apply to buildings, doors, roofs, exhaust stacks, and galvanized attachments to the buildings such as vents.
 - Change color on dish antennas to gray.

Other

- Minimize or avoid unnecessary ground disturbance and clearing activities during design and construction of communications buildings and radio towers.
- Do not drain equipment oil or fuel onto the ground. Haul oil, fuel and other chemicals to an approved site for disposal. All fuel storage tanks must meet current fire department, Federal, State and local government safety and hazardous materials requirements. Follow all additional design features listed in the “Fuel tanks” section of the 2010 Glass Butte Communication Site Management Plan (USDI 2010).
- Remove all trash from the sites and dispose of properly.
- Do not burn construction trash on public land.
- During construction, place signs (approved by BLM) at each intersection along the access road letting public know what hours and dates construction vehicles would be operating in the area.
- Do not allow radio frequency emissions from communication sites to exceed the applicable public safety limits, as set by the Occupational Health and Safety Administration (OSHA) and the Federal Communications Commission (FCC). If at any point radio frequency emissions are found to be exceeding applicable public safety limits, the operation of the proposed communication sites would immediately cease and remain suspended until the proposed communication sites can begin operating again without exceeding applicable safety limits.

Alternatives considered but eliminated

Place BPA tower at saddle location about ½ mile northeast of the top of the butte

This alternative was considered in some detail because it was the initial proposal from BPA. However, it was eventually dropped from the EA because the agency instead applied for a ROW at the top of the butte. Also, the saddle location would have been inconsistent with the RMP direction, “Applicants will be encouraged to locate new facilities (including communication sites) adjacent to existing facilities to the extent technically and economically feasible.” Brothers La Pine RMP, page 29. Consultation with the tribes indicated substantial concerns about adverse impact to traditional religious practitioners at and away from the proposed communication facilities with the saddle alternative.

Move BPA building to south side of butte, rather than right on the ridge

This alternative would have moved the BPA building pad about 50 feet south from the Alternative 2 proposed location, and accessed by the existing road going in to the Century Telephone tower site. The more southerly location would have reduced visual impacts, since the building would not be on the skyline as viewed from the highway. The amount of material that would need to be cut and filled would make the alternative technically and economically unfeasible, so it was not considered in detail.

Upgrade BPA’s existing Hampton-Burns microwave path so new location is not needed

BPA considered this alternative (which would have meant no action for BLM to consider) but technological problems meant it would not meet their purpose for the project, which was to provide telecommunications services to assure the secure and reliable operation of its power transmission network in Oregon and adjoining states. See additional details on this in Background section in Chapter 1.

Place BPA facility on a different butte

BPA considered several other locations for its facility, including Juniper Ridge and several other sites in the general vicinity.

Install fiber optic line rather than radio tower

BPA considered this option but eliminated it due to costs and potential environmental effects associated with how long the line would need to be.

Conformance with BLM land use plan

The BLM issued the first communication facility lease on Glass Butte in 1967, and issued numerous other leases subsequently. The RMP identified the top of Glass Butte as a “developed communications site” (RMP page 31, Map 7) in 1989, and said, “Public lands will continue to be available for rights-of-way, including . . . communication sites” (RMP page 29). The action alternative would be in conformance with this direction.

Alternative 2 would amend the RMP, changing the VRM Class on 17.5 acres near the top of the butte to Class IV prior to issuing ROW grants. Class IV directs that, “Management activities may attract attention but should not dominate the view of the casual observer (RMP page 126 and page 129, Map 27).

Standard operating procedures on page 90 that state, “In crucial wildlife habitat ... work will be scheduled during the appropriate season to avoid or minimize disturbances” and “Surface disturbance at all project sites will be held to a minimum.”

Additionally, this RMP was amended in 2015 by the Record of Decision for the GRSG RMPA, and the action alternative would be in conformance with the amendment. For example, the proposed conifer removal on 45 acres conforms to the following direction from page 2-8 in the amendments, “In undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions.”

Chapter 3 Affected environment and effects

Introduction

The affected environment describes the present condition and trend of issue-related elements of the human environment that may be affected by implementing any of the alternatives. It includes the effects from past and ongoing actions that contribute to present conditions, and provides a baseline for analyzing environmental effects of the alternatives and cumulative effects of actions that are on-going and reasonably foreseeable future actions.

The effects are the known and predicted effects from implementation of the actions, limited to the identified issues. Direct effects are those caused by the action and occurring at the same time and place. Indirect effects are those caused by the action but occurring later or in a different location. For the analyses of the alternatives, direct and indirect effects are not separated out, but discussed together.

Cumulative effects result from the incremental impact of the action when added to other on-going and reasonably foreseeable future actions. Reasonably foreseeable future actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends.

Native American concerns and cultural resources

A number of laws protect sacred sites or religious and traditional practices and places. The American Indian Religious Freedom Act [42 U.S.C. 1996] requires federal agencies to avoid or minimize impacts to traditional religious places and practices. Executive Order 13007 directs federal land managing agencies to avoid harming sacred sites. According to 36 CFR Part 800, Section 106 of the National Historic Preservation Act [54 U.S.C. 306108] requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Council (Advisory Council on Historic Preservation) a reasonable opportunity to comment on such undertakings. The procedures in this part define how Federal agencies meet these statutory responsibilities. The section 106 process seeks to accommodate historic preservation

concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties. The Native American Graves Protection & Repatriation Act [Public Law 101-601; 25 U.S.C. 3001-3013] requires protection of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony.

The BLM complied with these laws by consulting with the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes, modifying the EA alternatives to include actions that protect tribal interests, and working with the tribes, project proponents, the State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation (ACHP) to develop project Programmatic Agreements (PA, Appendix D) to protect tribal, cultural and archaeological resources. Execution of these project PAs by the BLM and SHPO and implementation of their terms evidence that the BLM has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment pursuant to 36 CFR Part 800.

How would construction of new communication facilities affect traditional religious practitioners at and away from the proposed communication facilities?

Affected environment

The affected environment consists of the viewshed from and to the elevated peaks and saddles of Glass Buttes as experienced by traditional religious practitioners. The peak of Glass Butte, if not obscured by other landforms, is visible from beyond 80 miles away, while the existing 100-foot tall Verizon tower on its peak is identifiable by a human observer at 4.93 air-miles northwest from Highway 20. Furthermore, that tower is clearly identifiable and recognizable from 3.49 air-miles away at the town of Hampton, Oregon according to tribal consultation. Two other towers are located south and south-southeast of the Verizon tower. They include the 60-foot tall Century Telephone tower located approximately 195 feet south and 49 feet below the Verizon tower and the ODOT tower located approximately 473 feet south-southeast and 116 feet below the Verizon tower. Existing tower and communication facilities on the peak of Glass Butte and to the south of the peak have obstructed the direct use of this area by traditional religious practitioners.

Assumptions and methodology

For the analysis of this specific issue, BLM defines Glass Buttes (plural) as the large landform indicated on United States Geological Survey 7.5 minute series topographic maps containing a series of connected buttes beginning at a base elevation of at least 4,800 feet and rising above the high lava plains below (USDI & USGS 1981; USDI & USGS 1983). BLM defines Glass Butte (singular) as the highest peak and butte in the Glass Buttes landform (USDI & USGS 1983).

In addition, viewshed is defined as the geographical area that is visible from a location, including all surrounding points that are in line-of-sight with that location and excluding points that are beyond the horizon or obstructed by terrain and other features (e.g., buildings, trees).

The BLM consulted with the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes to determine locations potentially used by traditional religious practitioners on and away from Glass Buttes and the proposed communication facilities under each alternative. This consultation process was used by the BLM to determine the visual and physical effects apparent to traditional religious practitioners on and away from Glass Buttes and the proposed communication facilities.

The experience of each traditional religious practitioner or groups of traditional religious practitioners are unique, personal, and private, as are the locations they use when specifically engaging in traditional religious practices to and from the Glass Buttes landform; therefore, effects to traditional religious practitioners at and away from the proposed communication facilities are unquantifiable.

Effects

Alternative 1

The existing viewshed would remain as it is now and there would be no additional viewshed impacts or effects beyond those already present from the existing towers to traditional religious practitioners. Tribal consultation indicated that the Burns Paiute Tribe and the Klamath Tribes would prefer that Glass Buttes be in a pristine and natural condition with no communication towers, facilities, or other modern infrastructure located on that landform whatsoever.

Alternative 2

AT&T would build a 100-foot tall tower approximately 148 feet east-southeast of the existing 100-foot tall tower on the peak of Glass Butte at an approximate elevation of 6,351 feet, which is 30 feet lower than the peak of Glass Butte. BPA would also build a 100-foot tall tower approximately 224 feet south-southeast of the existing 100-foot tall tower on the peak of Glass Butte at an approximate elevation of 6,333 feet which is 48 feet lower than the peak of Glass Butte. The view to and from this location is already obscured by the existing tower on the peak of Glass Butte and two additional existing towers to the south of and within approximately 473 feet of the peak. Two additional towers and their facilities would be built within an area that already has viewshed impacts to traditional religious practitioners. Physical impacts from existing tower and communication facilities obstruct the use of the area by traditional religious practitioners. Tribal consultation indicated this alternative would have few impacts to traditional religious practices because, per the PA:

- oral histories/TCP studies would be gathered from each of the three, including their participating members who've used Glass Buttes;
- a proposed Glass Buttes TCP would be evaluated to determine its eligibility for inclusion into the National Register of Historic Places pursuant to the National Historic Preservation Act and 36 CFR 800; and

- three tribal cultural resource monitors, one person selected independently from each of the three tribes, would be used to monitor road improvement and construction activities associated with this alternative.

Cumulative effects

There are no planned or known additional communication facilities or other structures that are proposed to be built on or near Glass Buttes that would affect traditional religious practitioners according to previous tribal consultation. There would be no additional effects from other actions that would combine with the direct and indirect effects of the alternatives already described above.

How would ground disturbing access road improvements and construction of new communication facilities affect historic properties listed or eligible for listing in the National Register of Historic Places?

Affected environment

The affected environment consists of known cultural resources where they overlap with the access road ROW, communication facilities ROWs, easements, and the three staging areas proposed to be used during construction activities. One of those cultural resources is the proposed Glass Buttes Traditional Cultural Property (TCP) as indicated by the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes. These cultural resources have been evaluated for listing on the NRHP, and some have been recommended as eligible. Tribal and Section 106 consultation indicated the possible listing of the area as a TCP would be phased. The access road and the three existing communication facilities located on and south of Glass Butte's peak are also part of the existing environment. The surface of some of those cultural resources has been disturbed in the past from previous road construction/maintenance and communication facility construction. Soil disturbance from grading, vehicular traffic, and erosion in the access road prism where road improvements would occur has been ongoing for approximately 47 years and based on surface observations by BLM Prineville District Archaeologists, these activities have led to soil compaction, displacement, and erosion on the road surface. Therefore, soil compaction, displacement, and erosion have previously disturbed the surface of cultural resources where they intersect with the road prism. There are 12 cultural resources, including 11 archaeological sites and the proposed TCP, in the analysis area containing approximately 30,234 acres. Of these acres, approximately 12.1619 acres are already impacted by past actions including roads, communication facilities, and a cattle congregation area. Cultural Resources that are ultimately determined and identified as ineligible for the National Register of Historic Places would not be adversely affected by the proposed action according to the NHPA and 36 CFR Part 800, and therefore would not require avoidance or mitigation pursuant to the NHPA and 36 CFR Part 800. An initial identification of historic properties via BLM and Oregon SHPO records indicates that no historic properties have been previously identified within the analysis area; however, none of these sites have been previously evaluated within the analysis area.

A phased approach to National Historic Preservation Act Section 106 compliance, in accordance with 36 CFR PART 800 -- PROTECTION OF HISTORIC PROPERTIES, would defer final

identification, evaluation, and assessment of effects of historic properties as indicated in the PA and as agreed upon with Section 106 consulting parties. Consulting parties include the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, the Klamath Tribes, BPA, and their representatives, Oregon SHPO, & the ACHP. AT&T will utilize this consultation as their action is similar. Once determined, any adverse effects (as defined and determined via 36 CFR PART 800) from the proposed action that may potentially affect historic properties would be either be avoided or mitigated according to 36 CFR Part 800 and the PA. In addition, cultural resources would be evaluated to determine if they are historic properties eligible for the National Register of Historic Places.

Assumptions and methodology

Cultural resource or cultural property (definition): “a definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. (Cf. “traditional cultural property”; see “definite location”.) Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit described in this Manual series. They may be but are not necessarily eligible for the National Register (See “historic property” or “historic resource”.)” (USDI & BLM 2004)

Historic property (definition): “means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such cultural resources. The term includes cultural resources of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.” (36 CFR 800.16(l)(i))

The analysis area consists of areas of 12 cultural resources, including 11 archaeological sites and the proposed TCP, that intersect and overlap ground disturbing actions in this alternative, including road improvements, road easements, the use of staging areas, and the construction footprint of communication facilities including their underground electrical spur lines.

All proposed action, ground surface disturbance impacts from road improvements, road easements, use of staging areas, and construction of communication facilities including their underground electrical spur lines are assumed to affect cultural resources where those proposed actions overlap the undisturbed surfaces of cultural resources. These effects are assumed to include displacement and damage of artifacts and locations within cultural resources analysis area.

Proposed ground disturbing actions by BPA and AT&T communication facilities ROWs, BPA’s temporary 40-foot wide road easement, and AT&T’s proposed underground electricity spur line would be used to determine likely ground surface disturbance impacts to known cultural resources.

At present and for the purposes of this cultural resources' effects analysis, the proposed TCP is assumed to be 30,000 acres in size and to begin at a base elevation of 4,800 feet around the Glass Buttes landform; its actual size would be known once its eligibility for the National Register has been determined.

Programmatic Agreements (PA) for BPA's and AT&T's separate undertakings (see Appendix D) as defined by 36 CFR Part 800 would legally bind the BLM, BPA, & AT&T to determine a resolution of adverse effects, as defined by 36 CFR Part 800, to historic properties and complete a mitigation plan with consulting parties including the ACHP, SHPO, Klamath Tribes, Burns Paiute Tribe, Confederated Tribes of Warm Springs Reservation of Oregon, BPA, AT&T, and the public prior to the BLM issuing a Notice to Proceed for any construction or ground disturbing activities related to the proposed action. The ROW grant would incorporate these PAs by reference as stipulations and stipulate that they must be adhered to prior to the BLM issuing a Notice to Proceed. The BLM, BPA, and AT&T would be signatories to the agreement, as well as, the Oregon State Historic Preservation Office and the Advisory Council on Historic Preservation (ACHP) as dictated by 36 CFR Part 800. The Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes would be invited to be concurring parties to the agreement. And all parties would consult on the agreement. The PAs can be found in Appendix D.

Effects

Alternative 1

There would be no impacts to cultural resources or historic properties eligible or listed on the National Register of Historic Places.

Alternative 2

Twelve cultural resources, including 11 archaeological sites and the proposed TCP, overlap with proposed ground surface disturbing actions under this alternative.

Proposed road improvements overlap 8 cultural resources, including the proposed TCP, and those cultural resources have already been disturbed in the road prism where this overlap occurs. Therefore, the present, proposed action would not affect or disturb the surface of these cultural resources beyond their current state.

Three cultural resources, excluding the proposed TCP, would be partially overlapped by staging areas. And 100% of two staging areas would overlap the proposed TCP. Effects from the use of heavy equipment where staging areas overlap cultural resources would likely disturb the surface of those cultural resources. Cultural resource 15/2349-101 is approximately 66.4784 acres in size and the staging area overlap on this cultural resource is approximately .00912 acres in size. Therefore, approximately .014% of the cultural resource's surface would be disturbed. Cultural resource 15/2349-109 is approximately 3.14006 acres in size and the staging area overlap on this cultural resource is approximately .29252 acres in size. Past actions previously disturbed approximately .04124 acres of this cultural resource where the staging area would overlap with the cultural resource. Therefore the proposed action would disturb approximately .25128 acres of undisturbed ground surface within this cultural resource, and

approximately 8% of the cultural resource's surface would be disturbed by the staging area. Cultural resource 15/2349-105 is approximately 1.21706 acres in size and the staging area overlap on this cultural resource is approximately .00627 acres in size. Past actions previously disturbed approximately .00627 acres of this cultural resource where the staging area would overlap with the cultural resource. Therefore the proposed action would disturb zero acres of undisturbed ground surface within this cultural resource, and approximately 0% of the cultural resource's surface would be disturbed by the staging area. The proposed TCP is approximately 30,000 acres in size and the staging area overlap on this cultural resource is approximately .41423 acres. Past actions previously disturbed approximately .04744 acres of this cultural resource where the staging area would overlap with the cultural resource. Therefore the proposed action would disturb approximately .36679 acres of undisturbed ground surface within this cultural resource, and approximately .00122% of the cultural resource's surface would be disturbed by the staging area.

The construction of BPA's proposed communication facilities and temporary 40-foot wide road easement would overlap approximately .3176 acres of the 3.046 acre cultural resource, 15/2349-106. In addition, construction of AT&T's communication facilities and the underground electricity spur line would overlap approximately .07335 acres cultural resource 15/2349-106. Past actions previously disturbed approximately .75436 acres of this cultural resource's surface where the communication facilities, temporary easement, and underground electricity spur line would overlap the cultural resource. The undisturbed surface where the communication facilities, temporary easement, and underground electricity spur line would overlap the cultural resource totals approximately .25175 acres. Therefore the proposed action would disturb approximately .25175 acres of undisturbed ground surface within this cultural resource, and approximately 8.3% of the cultural resource's surface would be disturbed by the the communication facilities, temporary easement, and underground electricity spur line.

Construction of both BPA's and AT&T's communication facilities would disturb approximately .60331 acres of the approximately 30,000 acre proposed TCP. Therefore, approximately .00201% of the proposed TCP's surface would be disturbed.

The closure of a steep/redundant spur road would likely be a beneficial impact to any cultural resources found to be overlapping, adjacent to, or below this road which begins approximately 600 feet northeast of Glass Butte's peak. The road would likely be closed with large surface boulders blocking each end of the spur road and would not impact cultural resources. The only cultural resource overlapping the entire spur road is the proposed TCP. Beneficial impacts would likely include the reclamation of approximately 2.30303 acres and an end to additional soil compaction, displacement, and erosion on the spur road from driving heavy equipment currently used at times for existing communication facilities' maintenance. Consulting parties including the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes have indicated that this redundant road leading to the existing communication facilities and proposed communication facilities should be closed.

Tree cutters on foot and using chainsaws to cut a 45-acre area with dispersed junipers would not have any surface disturbing impacts to any known or unknown cultural resources or historic

properties given that only small, juvenile juniper trees less than 10 inches in diameter at breast height would be felled, lopped, and scattered in this area. Furthermore, if tree cutting is determined to have potential effects to cultural resources or historic properties, then the area would be surveyed and any cultural resources or historic properties that would be disturbed by tree cutting would be completely avoided by this action and result in no effects or impacts to cultural resources or historic properties.

Under Alternative 2, two additional and separate communication facilities and underground electricity spur lines would be built within a preferred area, as indicated by tribal consultation with the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes and other consulting parties including the SHPO; this preferred area already has a partially disturbed ground surface from previous construction and the use of existing communication facilities.

Cumulative effects

Past, present, and proposed actions combined would disturb 13.54085 acres of ground surface within 12 cultural resources given proposed ground surface disturbing actions under Alternative 2. When assuming that the Midnight Point Geothermal Exploration project has already occurred and when assuming that all of the proposed well pad and road improvement related ground surface disturbance associated with that project falls within the proposed TCP, then an additional 51.73 acres of ground surface disturbance would occur to the proposed TCP under each alternative (USDI BLM 2012). At the end of the geothermal lease period in 2019, these ground surface disturbed areas are to be reclaimed and made natural (USDI BLM 2012). Likely cumulative effects from the present to the end of the lease period would disturb 65.27085 acres of ground surface within 12 cultural resources under Alternative 2. Cumulative impacts to cultural resources would ultimately be known once they are evaluated and found to be either ineligible properties or historic properties eligible for the National Register. Historic properties listed or eligible for listing in the National Register of Historic Places would be determined through an existing regulatory threshold created for that purpose, 36 CFR PART 800 -- PROTECTION OF HISTORIC PROPERTIES (incorporating amendments effective August 5, 2004). And a phased approach to National Historic Preservation Act Section 106 compliance, in accordance with 36 CFR PART 800 -- PROTECTION OF HISTORIC PROPERTIES, would defer final identification and evaluation of historic properties as indicated in the PA and as agreed upon with Section 106 consulting parties.

Visual resources

What effect would changing the Visual Resource Management classification from Class II to Class IV, building two communication facilities and towers and removing conifer have on scenic quality?

Affected environment

Existing setting

Glass Buttes is a highly visible landmark seen from State Highway 20 and surrounding lands. It is a series of small peaks and larger, rounded landforms. The highest peak tapers to a prominent cone, located about 2 to 3 miles south of State Highway 20. In general, the lower slopes of Glass Buttes have stands of juniper, while the upper portions are treeless. Stands of mountain mahogany on the middle slopes of Glass Buttes provide some variety.

Slopes range from flat and gently sloping alongside State Hwy 20, to moderate and steep slopes on the upper portions of Glass Butte. The upper portions of the butte do not contain any large scale, prominent rock outcrops. The very top of the peak is composed mostly of small pieces of broken basalt and is dark grey in color. At a distance of 40 feet below the peak, the ground cover is broken rock mixed with sagebrush, bitterbrush, and native grasses.

The Glass Buttes landform is visible from State Highway 20 at a distance of up to 12 miles. The largest of the existing towers (100-foot Verizon Tower) on Glass Butte first becomes noticeable at a distance of about 6 miles, depending on atmospheric conditions. As the viewing distance decreases, an additional, shorter tower (60-foot Century Telephone tower) becomes more apparent.

Although the area does contain built structures such as fencelines, reservoirs and several single pole powerlines – the character of the landscape is mostly natural. The wood pole powerline (Harney Electric ROW) to the southeast of, and leading up to the peak, was recently buried. This has slightly reduced the amount and noticeability of built features in the area. This line runs in an east west direction between the foreground and background ridgelines on the south flank of Glass Buttes, and ends near the top of the butte.

Public land visitors use the main access road to the communication site and many other unimproved roads in the area. In general, the lower elevation slopes and areas to the east of the project are regularly used for rockhounding (obsidian collection) and camping. The area is nationally known, and highlighted on numerous recreation, county government and tourism websites.

The largest number of viewers of the site are motorists using State Highway 20. Other viewers include public land visitors using the rockhounding area on the east slopes of Glass Butte and other visitors using the entire area. Rockhounding is an extremely popular activity in the area, although it is likely over time hiking and other trail use may increase in the area as well.

BLM maintains an inventory of visual resources on all lands under its jurisdiction. This inventory is a summation of the various inventories of Scenic Quality, Distance Zones, and Public Sensitivity (as defined from key observation points) in relation to landscape characteristics. Based on the results of this analysis, visual resources are classified as Inventory Class (VRI) I through IV, depending on the overall remarkability of the resource, juxtaposition in the landscape, and sensitivity of key users. These inventory classes are informational in nature, and provide the basis for considering visual values in a Resource Management Plan (RMP) process. Visual Resource Management (VRM) Classes are subsequently identified for an RMP, and provide allocations for the allowable degree of contrast from management activities and the level of change to the character of the landscape. VRM Classes range from Class I to IV, with Class I preserving the existing character of the landscape, while Class IV allows for management activities that may dominate the view and form a major modification to the existing landscape character. Specific definitions of each management class are located in Appendix C – Visual Resource Management Classes.

A detailed description of scenic quality, distance zones and sensitivity levels in the vicinity of Glass Buttes is included in the VRM Specialist Report for this project. The following is a general description of the visual resources of the project area (defined for visual resources as the highest peak of Glass Buttes, and a surrounding area of about 3 to 4 miles, with State Highway 20 being the key observation point and generally forming the northern boundary).

Scenic Quality

Scenic Quality is rated as A (high quality, distinctive scenery); B (moderate quality) and C (common or non-distinctive scenery). Generally, lands to the north of State Highway 20 have non-distinctive or common scenic quality. That is, these lands contain landscape features that are common in the physiographic region such as gentle slopes, little vegetative variety or interest, and no water features.

Lands adjacent and south of State Highway 20 at the base of Glass Buttes have moderate scenic quality. These lands are moderately to steeply sloping, have peaks and skyline ridges, and some vegetative variety. Generally, these are the lower slopes and upper ridgelines of the Glass Buttes landform.

Lands south of the highway and east of Glass Buttes (near the State Highway 20/Glass Buttes access road intersection) do not have notable landform features, and have common scenic quality typical of the region.

Visual Sensitivity Levels

BLM assigns public lands sensitivity levels (degree of concern for scenic quality) of High, Medium and Low. These determinations reflect the relative degree of concern that people viewing the landscape would have for scenic quality, and are based in part on numbers of viewers and their expectations.

State Highway 20 has the largest number of viewers of the project area. The foreground seen area from the highway, and the foreground viewshed of the area east of the buttes and south of the highway where rockhounding and camping occurs in greatest frequency has a high

degree of visual sensitivity, based on numbers of viewers, and the high public interest in Glass Buttes as a destination for rockhounding, camping and dispersed recreation.

Distance Zones

Glass Buttes can be seen from State Highway 20 at a variety of viewing distances. The south face of the butte is not visible from the highway, but the west, north and east face side of Glass Butte is visible from the highway. These views range from 11 miles at the furthest extent (near Hampton) to about 1 to 2 miles at the highway immediately north of the landform.

Most of the lands on the north side of Glass Buttes are seen in the foreground/middleground distance (from 3 to 5 miles or closer). The views from the west are of a broad landform ridge with one prominent, strongly pyramidal peak. Views from the north on the highway are of the the lower foreground slopes of shrub steppe, and middle elevation slopes of a juniper/sagebrush mix. At a particular spot on the highway, views are oriented up a side drainage and motorists can briefly see the highest peak with communication site towers.

For viewpoints from the east, Glass Buttes is seen as a grouping of smaller peaks and a large, rounded hillside stretching to the north of the primary peak. From this direction, the highest peak of Glass Buttes is not as visible or dominant as in views from the west. This is due to a greater landform complexity from various smaller peaks/hills in the view.

Viewing conditions from six locations were documented by photographs and described in detail in the VRM Specialist Report.

Visual Resource Inventory Class

By combining the elements of Scenic Quality, Visual Sensitivity, and Distance Zones, a general description of Visual Resource Inventory Classes emerges:

- Lands north of State Highway 20, with the exception of prominent foreground basalt cliff, are inventoried as Class III (Scenic quality C, Foreground/middleground distance, High Sensitivity).
- Lands south of State Highway 20 that are visible from the highway, and have moderate scenic quality due to landform and vegetation (i.e., the buttes) are inventoried as Class II (Scenic Quality B, foreground/middleground distance, High Sensitivity).
- Lands south of State Highway 20 that are not visible from the highway (seldom seen), and have moderate scenic quality due to landform and vegetation (i.e., the buttes), and are adjacent to more common landscapes to the south are inventoried as Class IV (Scenic Quality B, seldom seen, moderate sensitivity).

It is important to note that the top of glass buttes receives two visual resource inventory ratings, due to whether the land is visible from State Highway 20 or not. Thus, the north side of Glass Buttes is a higher inventory rating than the south side.

Views of the existing communication site facilities from most of the rockhounding areas are screened by intervening landform. However, some visitors engaging in dispersed uses such as

hiking, hunting or camping see the existing facilities and the additional towers from a variety of locations on Glass Buttes.

Visual Resource Management Class

Visual Resource Inventory Classes are considered, along with other resource values, when assigning Visual Resource Management Classes through a Resource Management Plan (in this case, the Brothers Grazing Management Program EIS as incorporated by the Brothers/La Pine RMP). The VRM Classes for the area closely follow the inventory classes, with the north side of the Butte designated as VRM Class II, and the south side (not seen from State Highway 20) designated as VRM Class IV.

Existing Communication Site Structures

The site has various towers and associated buildings in three different locations and base elevations. Glass Butte summit is a sharp cone, with a lower elevation, more rounded, and rockier secondary summit located about 850 feet to the southeast. Between the two high points is a saddle, all of which fall on a northwest to southeast trending ridge. The north face of this ridge faces State Highway 20, which is located 1.5 to 2 miles away. The south face of this ridge is not visible from the State Highway. An access road crosses this ridge, then switchbacks up a northern summit ridge before reaching this saddle. From this saddle, three different access roads, of varying degrees of improvement, lead to each of the three groups of existing facilities.

A 100-foot tall Verizon lattice tower is at the summit peak (see Figure 19¹), with several buildings located close by on the north side of the summit. This lattice tower has multiple dish antennas on it, with the bottom of the dish on the lowest of these being approximately 20 feet from the base of the tower. Communication cables run from the base of this tower and across a catwalk structure to the 12- by 32-foot RCC building (Figure 20) about 25 feet below and east of Verizon tower's base. The building has a textured aggregate surface and is tan/light brown in color. A large white propane tank is located next to this building.

A similar building (Facility 7 - Crook County RSA) is located on a second pad immediately east and below the Verizon building pad. This 12- by 20-foot concrete building has an aggregate finish, and also has a white propane tank next to it. The 100-foot Verizon tower is connected to this building with similar cabling and catwalks (see Figure 20 and 21).

At a lower elevation and 200 feet to the south (on the south side of Glass Buttes) there is a 60-foot Century Telephone lattice tower (Facility 4 – Figure 17) and a 14-foot by 19-foot white colored concrete block building (Facility 5 - Charter Cable) with approximately 12-foot high lattice tower on roof with three dish antennas (Figure 17).

¹ This figure and others referenced in this section of the EA refer to the VRM specialist report that is on file at the BLM.

The remaining facilities on the peak consist of a 40-foot lattice tower (PacifiCorp) and buildings located even lower down the summit, about 500 feet southeast of the summit peak (Figures 14 – 16). This facility is on the south side of the saddle between the two high points and includes:

- 12-foot by 20-foot desert tan concrete block building (ODOT) with a pitched roof and propane tank
- 8-foot by 12-foot fiberglass generator building
- 8-foot by 8-foot metal building

Another 8 to 10 feet below the base of Facility 7 (Crook County RSA building) and further east is a third level pad (see Figure 21). This is the location close the ridge where the access road to a new 100-foot tower and a building is proposed. The tower location is on the ridgeline to about 50 feet east of the access road. This pad elevation is 36.5 feet lower than the base of the Verizon Tower (based on the 2010 topographic survey of the site done by Bonneville Power Administration).

Assumptions and methodology

There are two separate actions that could affect visual resources in this project. One is the amendment of the RMP objectives for visual resource management on the buttes, and the other is the development of the communication facilities (and the associated conifer removal).

The RMP amendment would result in a change of 17.5 acres from a VRM Class II designation to a VRM Class IV designation. This change would allow for additional development on the north side of the summit peak of Glass Buttes that may be noticeable and dominate the view (see Appendix C – Visual Resource Management Classes). The impacts of the change in the RMP objectives for visual resources include those addressed in the analysis of project development impacts, but there could be additional impacts because the change would allow future development or upgrading of other facilities.

The development plans in the ROW application specify what type and location of facilities are proposed. The effects of the specific facility type and location are assessed through BLM's contrast rating process, identifying the degree of contrast before and after the project and whether the project meets the applicable VRM Class objectives. The analysis includes project locations and development assumptions for both the BPA and AT&T towers.

Effects on visual quality were assessed from four viewpoints, as well as considered in general due to the combined effects of the existing facilities on Glass Buttes. Methodology for the analysis consisted of developing line of sight images of the tower placement as seen from each viewpoint, in order to visualize the horizontal spread of the existing and proposed towers on the ridgeline. General estimates of new tower height were based on the known base elevations and tower height for the existing facilities, and the planned based elevations and tower height of the two proposed projects. Landform profiles from each viewpoint to the new facility locations were also produced to gauge the degree with which base facilities (buildings) would be visible. With this information in hand, the viewpoints were visited and a contrast rating done. Contrast rating worksheets used in the analysis are included in the project record.

Effects

Alternative 1

There would be no change in Visual Resource Management Class Designations for the area. The existing facilities on the buttes would continue to be seen, but they are not a dominant feature from most views from the key observation point (State Highway 20). New facilities could be considered, with those located on the south slope of the peak in areas designated as VRM Class IV having higher potential to meet the existing visual resource objectives for the area, depending on location and design. Additional development on the north side of the summit peak would be constrained by the existing VRM Class II designation.

No additional communication site development would be authorized under this alternative. Existing communication site facilities would be maintained under ROW grant stipulations and communication site plan guidance.

Alternative 2

The RMP amendment would change Visual Resource Management Class designations from VRM Class II to VRM Class IV on 17.5 acres on the north side of the Glass Butte summit (See VRM Specialist Report for map). This would result in a relatively small, site specific change in the Brothers/La Pine RMP planning area, which is comprised of 1,111,100 acres total. However, it would have the potential to lower the scenic quality at Glass Buttes – a prominent location in the eastern portion of the RMP planning area. The additional acreage of VRM Class IV designated lands may result in several additional towers and associated buildings being added to the top of Glass Buttes, in addition to the three existing towers and associated buildings currently located within the existing communication site. This has the potential to increase the structural contrast in the view for viewpoints within roughly 5 miles of the summit, particularly for travelers on State Highway 20. The exact degree of impact would depend on the facility proposed and the viewing distance and characteristics of the view.

The proposed development in Alternative 2 would add two lattice towers to the area immediately south of the summit tower. The AT&T tower would be seen closest to the summit (Verizon) tower, while the new BPA tower would be located close to the existing Century Telephone tower. The increase in towers would be visible and attract attention; however at the typical highway viewing distance, they still would not be a dominant visual element. Views from the east on the highway include a fairly complex landform of various minor peaks and broad ridges, helping to minimize the effect of the towers. For views from the west and directly north, the additional towers would tend to have higher structural contrast, as they are seen on a prominent pyramidal peak. Base buildings for the AT&T tower would likely be seen against the backdrop of the existing landform (rock cap and summit slopes) for views from the east. With appropriate coloration, these structures may not be noticeable or apparent. The BPA building would be the single largest building on the peak, and it (as well as the fill slope/pad) would be more visible and noticeable for views from the east, because they would be located on the skyline ridge. Using a dark color and non-reflective surfaces for the building and roof would help minimize the color contrast, but the line and form contrast would be moderate as

the building would be visible on the ridgeline in some views. The BPA building would not be seen from views to the west, since they are blocked by the summit landform.

Summary: This alternative would meet the objectives of VRM Class IV, which allows for projects that may dominate the view and be a major focus of viewer attention. The project would be noticeable and attract attention from different locations on State Highway 20, although the impacts would be minimized to some degree by the viewing distance, duration or angle of view, and the scale of the landform itself. The project design features for visuals that are listed in Chapter 2 would help decrease contrast created by the development to better meet or exceed the VRM Class IV standard to avoid unnecessary or undue degradation of visual resources (FLPMA Section 302b provides authority for requiring such features).

Proposed conifer removal would occur in areas located south of State Highway 20 that are designated as VRM Class II. These lower slopes contain light to moderate stands of juniper in a varied pattern, visible at a distance of between 1 to 2 miles from State Highway 20. The foreground view from the highway is of a uniform stand of sagebrush with few, if any trees.

At this viewing distance, conifer removal would create additional openings and density patterns that are similar to the existing varied patterns on the landscape. Since the cuts would be in irregular shapes and of a varied density pattern, and include lopping and scattering, there would be no long term changes to form, line, color or texture of the characteristic landscape.

Cumulative effects

Alternative 1

The Glass Buttes area is a naturally appearing area, with minimal built features due to human activities. These include dirt roads, rangeland fences, stock ponds and infrequent wood pole powerlines. The contrast created by these features is low and they are dispersed across the landscape. Recently, the single wood pole powerline on the east side of Glass Buttes leading to the summit was changed from an above ground line to a buried line. This improved the visual quality of the area by reducing the visibility of this structural element.

Under the no action alternative, there would be no change in VRM Class from VRM II on the north side of the butte to VRM IV. The potential for future development on the Communication site would be lower, and fewer changes to the landscape or introduction of noticeable contrast would occur. Existing uses such as grazing, recreation and test wells for geothermal exploration to the east and west of the landform would continue. These actions would not create highly noticeable changes in the visual quality of the area.

Alternative 2

With the change in VRM classification from VRM Class II to VRM Class IV, there is likely to be additional, future developments considered at the Glass Buttes communication site. If this development is located on the south side of the landform, instead of the north, this would tend to decrease additional visual contrast as seen by the majority of the public. The cumulative impact of a larger communication site boundary and VRM Class IV plan amendment change would emphasize future facility development on the north side of the buttes, which is the side

viewed more prominently from State Highway 20. Careful siting of facilities and use of consistent colors, low building heights and other project design features may help to minimize, but not eliminate visual resource impacts of this additional development.

Geothermal test wells pads have been authorized for two areas adjacent to Glass Buttes. One of these areas is on flat ground located three miles west of the Glass Butte summit. This is the Mahogany project area, which is on private property. The other is located on moderately rolling terrain about 5 miles east of the Glass Buttes summit. This is the Midnight Point project area.

One geothermal well in the Midnight Point project area (east of the communications site) associated with the Glass Buttes Geothermal project has been drilled. Other well pads are proposed.

The Glass Buttes Geothermal applicant proposed to evaluate the geothermal resources that potentially exist within the federal geothermal lease areas on the west and east sides of Glass Buttes. Under the chosen geothermal alternative C, the applicant proposed to drill up to two wells within the Mahogany project area (west of the communications site) and seven wells within the Midnight Point project area to determine if commercially viable geothermal resources are present and if so, to characterize those resources. Each exploratory well would be located within a defined area called a well pad. Each well pad would accommodate a drill rig and other structures and facilities related to the drilling operation.

Spot improvements to the roads leading to these pads and the pads themselves (approximately 4 acres in size) would not be noticeable from State Highway 20. During drilling operations there would be a short term effect of a mobile drilling rig (approximately 30 to 70 feet high) at these sites for an approximately 15 day drilling period. For most of these sites, this short-term effect would not attract attention of viewers due to the distance (over 2 miles) from State Highway 20.

Given the small scale, temporary or short term effect of equipment use, and dispersed nature of these exploratory wells, the cumulative effect of the proposed communication site developments and exploratory geothermal wells as seen from key observation points (i.e., State Highway 20) would be consistent with the VRM Class IV designation for the Communication Site.

Wildlife

Introduction

The BLM considered how the proposed actions might affect species federally listed under the Endangered Species Act, other special status species (BLM/USFS Interagency Special Status/Sensitive Species Program), neotropical migratory birds, and other wildlife. Of these species, the ones that occur and have habitat in the project area and would potentially be affected by the alternatives include Greater Sage-grouse, elk, mule deer, and neotropical migratory birds. The potential effects to these species are summarized below.

How would Greater sage-grouse be affected by activity associated with communication facility construction, road upgrades, and increased road use? How would conifer removal and road closure mitigate the effects to sage-grouse from the development of the communication sites and the development and increases use of the access road?

Affected environment

Currently, Greater Sage-grouse (*Centrocercus urophasianus*) distribution and sagebrush habitat encompasses parts of 11 states in the western United States and 2 Canadian provinces, occupying 56 percent of their historical range (Schroeder et al. 2004). Greater Sage-grouse distribution is strongly associated with distribution of sagebrush (*Artemisia* spp.), and in particular, big sagebrush (*A. tridentata*) (Schroeder et al. 2004).

Greater Sage-grouse show high fidelity to an area. During the breeding season (March–May), male sage-grouse gather together to perform courtship displays at known locations called “leks.” Leks are generally areas of little or no vegetation or cushion plant communities. Leks can be formed opportunistically or near nesting habitat (USFWS 2010). Females have been documented to travel more than 12.5 miles to their nesting site after mating (Connelly et al. 2000), however, roughly 80 percent of hens nest within four miles of the lek they attended (SGNTT 2011). Greater Sage-grouse nesting habitat is generally described as sagebrush that has a canopy cover between 10 and 25 percent, and heights between 11 and 31 inches (BLM 2015b). During the first 2-3 weeks, hens rear their broods in what is considered early brood-rearing habitat. They transition to late-brood rearing habitat when the chicks have fledged and are more mobile. Early and late brood-rearing habitat is typically near water with an abundance of insects and forbs (5 to 10 different species present). Sagebrush cover for these habitats is 10 to 25 percent (BLM 2015b). Greater Sage-grouse begin to transition to their winter habitat in late fall. This habitat typically contains areas where at least 10 percent of sagebrush is available and is at least ten inches above the snow (BLM 2015b). This allows Greater Sage-grouse for sufficient cover and food source to last through winter. There are four leks in the project area.

Greater Sage-grouse were originally proposed for protection under the endangered species list on July, 2002. In 2010, the US Fish & Wildlife Service (USFWS) issued a proposed rule of, “Warranted, but precluded by higher priority listing actions” (USFWS 2010). Due to this rule, the Sage-grouse is not listed at this time. On September 15, 2015, the Oregon Greater Sage-grouse Approved Resource Management Plan Amendment (ARMPA) was signed. The ARMPA provides goals, objectives, management decisions, required design features, and best management practices for sage-grouse and its habitat. The ARMPA also designated three types of habitat on lands managed by the BLM. These habitat designations are Priority Habitat Management Areas (PHMA), General Habitat Management Areas (GHMA), and Sagebrush Focal Areas (SFA). PHMA is habitat that has been identified as having the highest conservation value to maintaining sustainable sage-grouse populations. These areas include breeding, late brood-rearing, and winter concentration areas. GHMA is seasonal or year-round habitat outside of priority habitat. SFA is habitat identified by the USFWS that represent recognized strongholds for sage-grouse. They have been noted and referenced by the conservation community as having the highest densities of sage-grouse and other criteria important for the persistence of

sage-grouse (BLM 2015b). SFA is a subset of PHMA. There is no SFA habitat within the Prineville District.

The entire Glass Butte Communications Site project area is located completely within GHMA as designated by the Oregon Greater Sage-grouse Approved Resource Management Plan Amendment (2015) (ARMPA). Habitat in the area is slightly fragmented due to the limited number of existing two-tracks in the area and the previously disturbed communication site that has numerous communications towers and related facilities. There are four leks within four miles of the project area; only two are occupied. There is male lek attendance data for both. The first lek shows a ten year average of about 14 male sage grouse per day for 1997-2006, and about 18 per year 2006-2015. The other lek was not surveyed prior to 2010. But, it shows a ten year average of about 10 male sage-grouse per day for 2010-2016.

Map 2 shows where the proposed actions intersect with nesting, brood-rearing, and winter habitat in the project area. Seasonal habitats were determined using Habitat Assessment Framework (HAF) transects (BLM Technical Reference 6710-1 June 2015) (Stiver 2015) and past observation records (visual observations and clocker piles). The Brothers/North Wagontire PHMA is located to the west of the project area. This PHMA has had a declining population since 2011 (BLM 2015b). There are a variety of suspected reasons causing the population decline in the Brothers/North Wagontire PHMA. Some of the suspected causes are a lack of mesic vegetation used by sage-grouse during the late brood-rearing season, habitat fragmentation associated with infrastructure, and juniper encroachment. All of these suspected causes can be found in the Glass Buttes project area. It is likely that sage-grouse from the Brothers/North Wagontire PHMA utilize habitat near or around Glass Buttes. After compiling site scale HAF data and visual observations throughout the project area, the BLM categorized the sage-grouse habitat suitable. Suitable habitat is habitat that provides the necessary environmental conditions for survival and reproduction to sustain viable populations (Stiver 2015). Although the habitat within the project area is suitable, there is juniper encroachment in the area between Glass Buttes and HWY 20. Young juniper outcompete other native plants for water, nutrients and sunlight, causing a decline in plant diversity and shrub/native grass abundance, an eventual increase in bare ground, and a potential increase in invasive weedy species. If the conifer are not removed, the sagebrush is likely to begin dying off in 10-20 years, making the site unsuitable.

Assumptions and methodology

Actions that currently affect sage-grouse in the project area include rockhounding, camping at existing campsites along the access road, seasonal livestock operations (livestock herding/moving, filling water troughs, etc.), and 5 vehicle trips per month for tower maintenance. The actions that would potentially affect sage-grouse include disturbance from construction traffic, disturbance from installation of towers that could provide perches for predators, and direct loss of habitat from installation of communication site buildings and other structures. Indirect effects include habitat avoidance and degradation due to construction noise, change in traffic use (type of vehicle, amount and timing of traffic, tall structures, and increased human presence).

Hanser et al (2011) found that sage-grouse use decreases within one kilometer of state and federal highways. Appendix B. of the ARMPA indicates that road effects extend out to 5 km and communication site (under the tall structures category) effects extend out to 3.3 km.

The area of analysis is 40,500 acres, following Highway 20 as a northern boundary, south through Perry Flat and Parmele Ridge as a western boundary, southwest along the toe of the slope of Glass Buttes, northeast in between Glass Buttes and Round Top Butte, then due north (east of Sand Flat) to Highway 20. This area was analyzed to include the four nearby leks. There are about 135 miles of identified roads/two-tracks/trails in the area of analysis. Assuming the average road/two-track/trail has a width of twelve feet, the amount of disturbance from roads/two-tracks/trails is 196.5 acres. There is approximately 0.9 acres of disturbance at the existing communication site.

Effects

Alternative 1

Disturbance from human presence and activities within the project area would remain the same as current levels. Current levels include about 5 vehicle trips per month to the existing communication site for maintenance. Rockhounding and camping at existing campsites along the access road are common activities during the spring, summer, and fall months. Seasonal livestock grazing occurs within the project boundary. Ranching operations associated with livestock grazing include trips to fill livestock water troughs and moving livestock from pasture to pasture. The current activities affect sage-grouse by temporary displacement due to noise and presence of vehicles. Currently there are 5 maintenance trips/month, 10 rockhounding trips/month, and 5 grazing trips/month (these trips may vary seasonally) totaling 20 trips/month. No additional direct or indirect impacts to Greater Sage-grouse would occur with the no action alternative.

Alternative 2

The Proposed Action would result in 2 additional maintenance trips per month and a direct loss of 3.92 acres of sage-grouse potential winter, nesting/breeding, and brood-rearing habitat, due to development of the communication site. The Proposed Action also has a possibility to carry out activities that may be disruptive to wintering, breeding/nesting, and brood-rearing birds. Activities that would be disruptive to sage-grouse would be noise and human presence from construction equipment at the communication site and noise and human presence from road upgrades. Therefore, the BLM would assign timing limited stipulations to certain activities and areas throughout the project (see Map 2). These timing limited stipulations would limit the direct and indirect effects of the Proposed Action by protecting wintering, breeding/nesting, and brood-rearing Greater Sage-grouse.

Management Decision Lands and Realty 7 from the ARMPA states that GHMA is open to other ROWs/Land Use Authorization/Permits but must adhere to screening criteria in Special Status Species (SSS) 13. The following information addresses the screening criteria in SSS 13:

- The project is located in GHMA only. The disturbance cap does not apply to GHMA.

- No new anthropogenic disturbance would occur within 1.0 mile of an occupied or pending lek in GHMA.
- Development would meet noise restrictions in GHMA (see analysis below).
- Seasonal protection and timing limitations of occupied and pending leks in PHMA and GHMA are analyzed in this document.
- All disturbance is subject to net conservation gain to sage-grouse and sage-grouse habitat (see below).
- All new permitted activities will follow Required Design Features (Appendix C) in GHMA (see Wildlife Project Design Features on pages 15-16).
- The proposed action is located within a previously disturbed communications site.
- Buffer and seasonal restrictions in Table 2-3 (1.0 mile spatial buffer for leks in PHMA and GHMA) do not apply. The project location does not fall within the 1.0 mile buffer of leks.

Construction activities at each respective facility project location would generate a sound intensity decibel (dBA) reading during operation of up to 100 dBA at ten feet from the boundary outline of each facility's proposed ROW siting area. Using standard noise attenuation, the foregoing sound intensity measurement would drop off by six dBA per doubling of distance from the sound source. The nearest occupied or pending lek is 3.5 miles away. Using the standard noise attenuation model, at 3.5 miles, the noise level would be 38.8 dBA. Ambient levels range from 16-20 dBA in undisturbed wilderness areas up to 39 dBA in rural areas (Patricelli 2013). Taking into account for HWY 20 and nearby ranches, it is assumed that ambient noise levels at the leks are approximately 25 dBA. Therefore, the noise from the construction activities at the project site would exceed 10 decibels of ambient noise at the perimeter of the leks. In order to protect Greater Sage-grouse breeding habitat, surface disturbing and disruptive activities would not be allowed from two hours before sunset to two hours after sunrise at the perimeter of an occupied or pending lek between March 15 and May 15 (or when no sage-grouse are attending the lek as documented by a BLM or ODFW Wildlife Biologist).

Upon completion of the towers in the proposed location, the towers would not add additional aversion areas for sage-grouse. This is due to the existing communication sites. No additional roads would have been created in relation to this proposed action. Additional traffic, related to maintenance, has the potential to cause an increase in traffic. Frequent maintenance visits are not anticipated.

In addition to the timing limited stipulations, BLM would apply the thirteen Required Design Features (RDFs) to the project (see Wildlife Design Features on pages 15-16). They include limiting the amount of disturbance in Greater Sage-grouse habitat, preventing new potential perching opportunities for predators, reducing the amount of refuse/trash that could potentially draw in predators to the area, limiting the creation of new roads that could further fragment Greater Sage-grouse habitat, reducing the amount of dust and sediment in the air from travel, reducing the threat of spreading noxious and invasive weeds, incorporating mats to prevent soil compaction, and reclamation guidelines for better chances at successful reclamation.

Proposed mitigation involves cutting encroaching conifer in an identified location and blocking off and seeding a 0.20 mile spur road. Potential disturbance from conifer removal would be temporary displacement from nesting or roosting locations. In order to mitigate for the disruptive activities of the conifer removal under the Proposed Action, Management Decision Vegetation 4 from the ARMPA (September 2015) would be followed. This allows conifer removal within 4.0 miles of an occupied or pending lek during the breeding season from two hours after sunrise to two hours before sunset.

An area to remove encroaching conifer, specifically juniper (*Juniperus occidentalis*), has been identified in potential sage-grouse nesting habitat within the analysis area. Encroaching juniper reduces sage-grouse nesting habitat condition because it outcompetes native shrubs and grass, reducing their cover below suitable levels. Juniper can also serve as perches for raptors, deterring grouse use near trees. Conifer removal in the identified area would benefit nesting and brood-rearing sage-grouse. The reduction of conifer in this area would allow for an increase in grasses and forbs for sage-grouse to utilize. Conifer removal would help keep the sage-grouse habitat in the suitable state and prevent it from changing to marginal and eventually unsuitable, if left untreated. Following Project Design Feature Common to All #20 would reduce the amount of potential perch sites for sage-grouse predators. Performance measures associated with the spur road closure include the establishment of 5-10% cover of native grasses and forbs in the cutting area. This would be monitored through the use of a Line Point Intercept transect. A BLM Wildlife Biologist would monitor the site within three years of cutting.

In addition to the conifer removal, a spur road near the communication site (see Map 2) would be blocked off with boulders and seeded with a BLM approved seed mix. The spur road is located in winter range habitat for sage-grouse. The road is currently experiencing erosion and has no vegetation to slow down or stop erosion. Blocking the road would prevent further use. Once vegetation is established, erosion would slow down and potentially cease. Performance measures associated with the spur road closure include the establishment of 5-10 percent cover of native vegetation. This would be monitored through the use of a Line Point Intercept transect. A BLM Wildlife Biologist would monitor the site within 3 years of seeding. Established vegetation would reduce fragmented habitat at the top of Glass Buttes. Disruptive activities associated with boulder placement and seeding would involve temporary (1-2 days) displacement of sage-grouse until spur road reclamation is complete. Given the seasonal limits on activity, the required PDFs, and the conifer removal, there would be a net conservation gain for sage-grouse and sage-grouse habitat.

Changing the VRM class from II to IV would allow for management activities that may dominate the view and form a major modification to the existing landscape character. It would be difficult to speculate the effects of any future development because the amount of future development is unknown. Although, any long term impacts would be reduced through proper mitigation and project design features.

Cumulative effects

Introduction

Past human disturbance in the project area include rockhounding throughout Glass Buttes, dispersed camping, monthly access to the existing communication towers for maintenance actions, and livestock operations associated with the grazing permits in the area.

Current human disturbance in the project area includes rockhounding throughout Glass Buttes, dispersed camping, monthly access to the existing communication towers for maintenance actions (5 trips per month), and livestock operations associated with the grazing permits in the area. These activities are sporadic and cause low amounts of disturbance. One geothermal well in the Midnight Point project area (east of the communications site) associated with the Glass Buttes Geothermal project has been drilled. Each well pad associated with the geothermal project was proposed to be 4.1 acres.

Reasonably foreseeable impacts from projects include continuation of livestock grazing, rockhounding, and the implementation of the rest of the Glass Buttes Geothermal project. Impacts to sage-grouse associated with livestock grazing and rockhounding would continue to stay similar to the past and present direct and indirect impacts.

The Glass Buttes Geothermal applicant proposed to evaluate the geothermal resources that potentially exist within the federal geothermal lease areas on the west and east sides of Glass Buttes. Under the chosen alternative, Alternative C, the applicant proposed to drill up to two wells within the Mahogany project area (west of the communications site) and seven wells within the Midnight Point project area to determine if commercially viable geothermal resources are present and if so, to characterize those resources. Each exploratory well would be located within a defined area called a well pad. Each well pad would accommodate a drill rig and other structures and facilities related to the drilling operation.

If the Glass Buttes Geothermal project is implemented at maximum levels, it would remove a total of 44.1 acres (well pads and road upgrades) of PHMA and GHMA. Sage-grouse would avoid the geothermal project areas due to human presence and noise from construction activities. Proposed mitigation for the geothermal project is the removal of 89 acres of juniper. The identified area for conifer removal is located near Parmele Ridge, Midnight Point, and east of Round Top Butte. Each location is within or adjacent to the area of analysis. Impacts from the conifer removal would be short term (1-2 days), but would provide a net conservation gain through improvement of yearlong habitat.

Alternative 1

If Alternative 1 is selected and the new communication facilities are not permitted, the cumulative effect of the project would be as described directly above: 44.1 acres of disturbance but 89 acres of conifer removal, for a net conservation gain through improvement of yearlong habitat.

Alternative 2

If the proposed communication facilities are constructed there would be an additional 3.92 acres of disturbance to the analysis area, but also an additional 45 acres of conifer removal. When combined with effects of other potential future actions described above in the cumulative effects introduction, the result is still a net conservation gain.

What effect would this project have on nesting neotropical birds?

Affected environment

Numerous neotropical migrants, specifically sagebrush obligate birds, utilize similar habitat required by sage-grouse. Neotropical migratory birds breed and raise young in the planning area in the spring and summer then migrate south to areas in Mexico and South America during the fall and winter. These birds range from small sparrows and warblers to large woodpeckers and raptors. Species that were observed in the project area during field visits included Cooper's hawk (*Accipiter cooperii*), Red-tailed hawk (*Buteo jamaicensis*), Sagebrush sparrow (*Artemisiospiza nevadensis*), Sage thrasher (*Oreoscoptes montanus*), and Vesper sparrow (*Poocetes gramineus*).

During a field inspection on December 1, 2016 of the area proposed for conifer removal, a nest in good condition (nest cup still formed, nest was not falling apart, faint white wash observed) was observed in a juniper. Due to the size of the nest and the material used for construction of the nest, it is presumed to be a Red-tailed hawk nest. The nest was visited twice during the spring (3/23/2017 & 4/20/2017). During both field visits, no Red-tailed hawks or any other raptor were seen in the area and there was no new greenery or whitewash present on the nest. For these reasons, the nest is deemed not occupied for the 2017 breeding season (March 1- August 31). See the sage-grouse section for a description of the affected environment.

Assumptions and methodology

Actions that currently affect neotropical birds in the project area include rockhounding, camping at existing campsites along the access road, seasonal livestock operations (livestock herding/moving, filling water troughs, etc.), and 5 vehicle trips per month for tower maintenance. The area potentially impacted by the Proposed Action would be similar to the area analyzed for Greater Sage-grouse. The acres of previously disturbed habitat in the area of analysis would be similar as well.

Effects

Alternative 1

Disturbance from human presence and activities within the project area would remain the same as current levels. Current levels include about five vehicle trips per month to the existing communication site for maintenance. Rockhounding and camping at existing campsites along the access road are common activities during the spring, summer, and fall months. Seasonal livestock grazing occurs within the project boundary. Ranching operations associated with livestock grazing include trips to fill livestock water troughs and moving livestock from pasture to pasture. The current activities affect neotropical birds by temporary displacement due to noise and presence of vehicles. Currently there are 5 maintenance trips/month, 10

rockhounding trips/month, and 5 grazing trips/month (these trips may vary seasonally) totaling 20 trips/month. No additional direct or indirect impacts to Neotropical birds would occur with the no action alternative.

Alternative 2

The Proposed Action would result in two additional maintenance trips per month and the direct loss of 3.92 acres of potential nesting habitat for Neotropical birds, due to development of the communication site. It is unlikely that the loss of 3.92 acres of habitat as a result of the Proposed Action would have any major impacts on Neotropical birds, because the site already has existing communication towers and associated facilities. The Wildlife PDFs section (Page 15-16) provides guidelines and timing limited stipulations that would reduce impacts to Neotropical birds. The elk and mule deer winter range stipulation (no surface disturbing or disruptive activities from January 1-April 14) would reduce the threat of take during the nesting and brood-rearing time frame of Neotropical birds. The seasonal avoidance period for brood-rearing sage-grouse from July 1-October 31 would reduce the threat of collision which could potentially result in take. The following PDFs limit ground disturbing and disruptive activities:

- minimizing and avoiding unnecessary ground disturbance and clearing activities during the design and construction of communications building and radio tower;
- Locate the facility close to existing access roads as possible to minimize unnecessary ground disturbance and clearing activities;
- Do not fence the facilities (minimize habitat fragmentation and reduce above-ground obstacle to birds in flight);
- Shield all exterior lights to keep light within the boundary of the site

By limiting ground disturbing and disruptive activities, there would be a reduced threat of removing/destroying nests along with a reduced threat of nest failures. By implementing design requirements for the tower and related facilities, there would be a reduced threat of fatal collisions. In addition to shielding all exterior lights to keep light within the boundary of the site, not installing solid or pulsating lights on the radio towers would help limit disturbance of any night movement of Neotropical birds (Evans et al. 2007). Most, if not all, nesting Neotropical birds would benefit from the PDFs required for Greater Sage-grouse. Because of the small number of acres removed and implementation of the PDFs for Greater Sage-grouse and the PDFs for general wildlife, the project may temporarily impact some individuals or habitat, but would not likely contribute towards to a loss of viability to the population or species.

Actions associated with lopping and scattering of conifer removal under the Proposed Action (increased foot traffic and noise from chainsaws) would only be temporary, lasting up to 2-3 days. Trees with raptor nests or cavity nesting birds would be flagged and not removed. Timing stipulations from sage-grouse would help reduce impacts (i.e. overall avoidance of the project area or potential nest failure due to disruptive activities) to Neotropical birds.

If the known Red-tailed hawk nest is occupied in future years, then there would be a timing limited stipulation place on all activities within a ½ mile radius of the nest from March 1 through August 31. No surface disturbing activities would be allowed during this time frame.

Vehicle trips associated with the project would be limited to eight trips during this period. This would reduce the amount of disruptive activities to the nesting birds. These dates were chosen by the BLM in coordination with ODFW as directed by the Brothers/La Pine RMP (1989). A BLM wildlife biologist would determine if the nest is occupied or not before March 1.

Although there would be a loss in perching opportunities for raptors due to conifer removal, there are still numerous perching opportunities within the area of analysis. Conifer removal would allow for an increase in forbs and grasses to establish. Additional forbs would attract additional pollinating insects that some neotropical birds prey upon.

Changing the VRM class from II to IV would allow for management activities that may dominate the view and form a major modification to the existing landscape character. It would be difficult to speculate the effects of any future development because the amount of future development is unknown. Although, any long term impacts would be reduced through proper mitigation and project design features.

Cumulative effects

Introduction

See description of relevant past, present and future actions above in the previous cumulative effects section introduction. These actions would also disturb neotropical birds and remove their habitat.

In addition to disturbance, the future actions would remove habitat. If the Glass Buttes Geothermal project is implemented at maximum levels, it would remove a total of 44.1 acres (well pads and road upgrades) of nesting and foraging habitat. Neotropical birds could potentially be affected by increased noise levels associated with project construction. However, operational noise levels from Glass Buttes Geothermal would not be loud enough to disrupt neotropical birds. Neotropical birds, specifically raptors, vary in their susceptibility to nest abandonment from industrial activities. Some individual hawks and falcons are accustomed to the presence of heavy equipment and associated noise and dust, while others are more susceptible to disturbance. Due to the timing stipulation associated with this project (March 1-August 15), effects would be minimized and exploration activities would not interfere with nesting of neotropical birds.

Alternative 1

If Alternative 1 is selected, there would be no additional effects other than those described above in the cumulative effects introduction.

Alternative 2

If the current proposed action were implemented at the same time as the geothermal exploration, neotropical birds would be temporarily displaced from both project areas, thus reducing the amount of available habitat.

What effect would construction activity and conifer removal have on elk and mule deer?

Affected environment

Mule deer (*Odocoileus hemionus*) occur throughout North America in a wide variety of habitats from deserts, riparian areas, broken grasslands, shrublands, foothills, forests to tundra (Clark and Stromberg 1987). Mule deer are common and relatively abundant on the District. In Oregon, mule deer provide recreational, aesthetic, and economic values to hunters, wildlife enthusiasts, and local businesses throughout the state. The project area is located in winter range for mule deer as identified by ODFW. Mule deer winter range vegetation is typically comprised of pinyon-juniper woodlands, sagebrush, and bitterbrush (Cox et al. 2009). Sagebrush and old growth juniper woodlands are present throughout the project area, with some juvenile juniper encroachment occurring in the sagebrush habitat.

Elk (*Cervus elaphus nelson*) once ranged from northern Canada southward along the California coastline, and throughout much of the United States (Clark and Stromberg 1987). Today, the range has been reduced, however, due to reintroduction efforts; the elk is being restored in many parts of the historical range. In Oregon, they occur from deserts to forested areas, and occupy habitats dominated by shrubs and grasses to high mountain meadows of grasses and forbs. The project is located in winter range for elk as identified by ODFW.

The project is located in ODFW Wildlife Management Unit (WMU) 73, Wagontire. The current estimated deer population for this WMU is 2,946 individuals, which is almost 18 percent above the population objective of 2,500 (ODFW 2016a). The current estimated elk population in the Wagontire WMU is 1,700 individuals, which is approximately 70 percent above the population objective of 1,000 (ODFW 2016b).

Assumptions and methodology

The area of analysis for the Proposed Action follows HWY 20 as a northern boundary, south through Perry Flat and Parmele Ridge as a western boundary, southwest along the toe of the slope of Glass Buttes, northeast in between Glass Buttes and Round Top Butte, then due north (east of Sand Flat) to HWY 20. The area of analysis is approximately 40,500 acres. There are about 135 miles of identified roads/two-tracks/trails in the area of analysis. Assuming the average road/two-track/trail has a width of twelve feet, the amount of disturbance from roads/two-tracks/trails is 196.5 acres. There are 0.9 acres of disturbance at the existing communication site. The area of analysis is approximately two percent of the Wagontire WMU.

Actions that currently affect elk and mule deer in the project area include rockhounding, camping at existing campsites along the access road, seasonal livestock operations (livestock herding/moving, filling water troughs, etc.), and 5 vehicle trips per month for tower maintenance. Elk and deer would be affected by the project in two ways: one is direct loss of habitat from the communication site developments (building, graveled area, etc.), and the second is from disturbance from construction traffic on the access road.

Harassed elk move more often than elk left alone and use of habitat decreases as road density increases (Witmer 1985). Therefore, there is a chance of short term temporary displacement for elk and mule deer. Displacement would mainly occur during surface disturbing and

disruptive activities. Animals would be able to return to the area immediately after construction and reclamation occurs. These impacts would be reduced by implementing a timing limitation stipulation to restrict construction or other surface disturbing and disruptive activities from December 1 to April 15 each year.

Researchers have reported decreased use of areas adjacent to roads for distances ranging from 0.4 to 0.8 kilometers (0.25 to 0.5 mi) (Perry and Overly 1977, Ward 1976). For this analysis, we assumed deer and elk would be disturbed by traffic in a 0.5 mile buffer on the access road for Glass Butte.

Juniper woodlands provide two forms of cover for deer and elk: thermal and hiding cover (Olsen 1992). Thermal cover allows mule deer and elk opportunities to not use as much energy to keep warm during colder months. Hiding cover offers protection from predators and other disturbance. Encroaching juniper eliminates the healthy understory that elk and mule deer rely upon throughout the year (Wasley, 2004). Removing encroaching conifer through the form of juniper cuts would allow for restoration of understory vegetation while not reducing hiding or thermal cover.

Effects

Alternative 1

Disturbance from human presence and activities within the project area would remain the same as current levels. Current levels include about 5 vehicle trips per month to the existing communication site for maintenance. Rockhounding and camping at existing campsites along the access road are common activities during the spring, summer, and fall months. Seasonal livestock grazing occurs within the project boundary. Ranching operations associated with livestock grazing include trips to fill livestock water troughs and moving livestock from pasture to pasture. The current activities affect elk and mule deer by temporary displacement due to noise and presence of vehicles. Currently there are 5 maintenance trips/month, 10 rockhounding trips/month, and 5 grazing trips/month (these trips may vary seasonally) totaling 20 trips/month. No additional direct or indirect impacts to elk and mule deer would occur with the no action alternative.

Alternative 2

The Proposed Action would result in two additional maintenance trips per month and the direct loss of 3.92 acres of deer and elk habitat due to the installation of structures and gravel surfaces at the communication site. This would be less than one percent of the analysis area. Because of the relatively small size of the direct impact area, it is unlikely that the loss of 3.92 acres of habitat as a result of the Proposed Action would have any major impacts on big game herds.

Animals that use this habitat year round would be temporarily displaced from an estimated 6,446 acres along the access road during construction activities. Because of the small number of acres removed and the implementation of the winter range timing limited stipulation for road construction activities, the project may impact some individuals or habitat, but would not likely contribute to a loss of viability to the population or species.

Conifer removal proposed under this Alternative would consist of lopping and scattering in elk and mule deer winter habitat. The area identified for conifer removal is located within the same WMU. Actions associated with lopping and scattering (increased foot traffic and noise from chainsaws) would only be temporary, lasting up to 2-3 days. The temporary disturbance to wintering elk and mule deer would be mitigated by restricting the activities from December 1 to April 15 each year. These dates were chosen by the BLM in coordination with ODFW as directed by the Brothers/La Pine RMP (1989).

The area identified for conifer removal has a light to moderate amount of conifer cover that would be marginal winter habitat. The marginal rating is due to a lack of suitable horizontal and vertical cover that would be used for hiding and thermal cover. However, elk and mule deer would benefit from the effects of conifer removal in the long run with openings in the sagebrush, causing an increase in abundance of forbs and grasses available for forage throughout each season. Because the proponent would reenter the area identified for conifer removal and cut any new encroaching, elk and mule deer would benefit from the additional forbs and grasses for up to 30-40 years.

Changing the VRM class from II to IV would allow for management activities that may dominate the view and form a major modification to the existing landscape character. It would be difficult to speculate the effects of any future development because the amount of future development is unknown. Although, any long term impacts would be reduced through proper mitigation and project design features.

Cumulative effects

Introduction

See description of relevant past, present and future actions above in the previous cumulative effects section introduction. These actions would also disturb mule deer and elk and remove their habitat.

In addition to disturbance, the future actions would remove habitat. If the Glass Buttes Geothermal project is implemented at maximum levels, it would remove a total of 47.5 acres associated with well pads, 6.0 acres associated with and road upgrades, and 5.0 acres associated with the gravel pit. Increased vehicle activity in the project area could displace animals or cause additional movement of elk and mule deer at a time when they have a need to conserve energy. The noise associated with the project (construction, normal well pad operation, and vehicle traffic) would reduce habitat quality. Due to the timing stipulation associated with this project (12/1-4/30), effects would be minimized and exploration activities would not interfere with wintering elk and mule deer. Impacts from the conifer removal would only occur during low use periods by elk and mule deer and would provide a net conservation gain through improvement of foraging habitat that is still close to areas with suitable thermal cover.

Alternative 1

The project would not produce any effects that would add to those described in the above introduction.

Alternative 2

Construction of the proposed communications site, geothermal wells, and associated mitigation would add to those described above in the cumulative effects introduction. If these projects were implemented at the same time, elk and mule deer would be temporarily displaced from both project areas, thus reducing the amount of available habitat.

Recreation

How would construction activities affect primitive camping, rock-hounding, and motorized recreational use opportunities?

Affected Environment

The existing recreational activities occurring in the Glass Buttes area include rock-hounding (rock collecting), primitive camping, back-country exploration, OHV driving, and hunting. There are no developed recreational sites near the project area and recreation use in the area is primarily dispersed. The majority of recreation use occurs east of the proposed access road. The primary recreation activity is rock-hounding for a variety of obsidian, minerals, and semi-precious gemstone resources. The Glass Buttes area is one of the most popular and accessible designated rock-hounding areas on the BLM Prineville District. There are approximately 25,000 visitor days per year for rock-hounding in the Glass Buttes area with an estimated 3,750 visitor days per month occur during the peak season of August through October. The BLM has noticed an increase in use since 2010, and expects this trend to continue (USDI BLM 2012).

Camping within the area is primitive in nature. Dispersed campsites have been created by recreationists over time and are primarily used by those rock-hounding, as evidenced by the presence of rock debris at the majority of sites. Dispersed campsites are typically located adjacent to roads, under juniper trees for shade, and/or in an area that provides enough space to park an RV camper.

10.6 miles of public access road in the proposed project area are currently used for recreation access. BLM lands surrounding the project area are designated by the Brothers/La Pine RMP as limited to OHV use (USDI BLM 1989), and this RMP was further amended by the ARMPA (USDI BLM 2015) to state: "Unless already designated, limited or closed, all PHMA and GHMA shall be designated as limited to existing roads, primitive roads, and trails, including existing SRMAs."

There are no existing Special Recreation Permits in the area. With expected and continued overall increases in recreational use in the area, it is reasonable to expect there would be SRP requests in future years. The effects described below are for BLM land only and not private lands.

Assumptions and methodology

This analysis evaluates how the proposed action alternatives would affect recreational use and opportunities. The methodology for the analysis consisted of reviewing recreational use data. Map 2 shows the proposed access road which was used for the road mileage in this analysis.

Effects

Alternative 1

Under the No Action alternative, the BLM would not amend the RMP or allow development of new communication facilities and ROW road access improvements. No direct effects to recreation visitors would occur to the estimated 25,000 visitor days per year. The primary recreation activities of rock-hounding and use of primitive dispersed campsites within the public lands project area would not be affected. In addition, the 10.6 miles currently being used for motorized access would remain available with no temporary effects occurring on these roads.

Alternative 2

The direct effects on recreation are largely related to the project's proposed road access. Under the Proposed Action, public access to the top of Glass Butte would be temporarily restricted to authorized project personnel for site safety during construction phases. This precaution would result in a temporary disruption to any recreation and rock-hounding use along the road or at the proposed construction site locations.

Primary effects on recreation use in the area include increased noise, dust, and traffic generated by the proposed construction activities (per the proposed action: of the 10.6 miles of access road, 6.64 miles would not need any work, 3.93 miles would need to be improved, and 0.05 miles would need to be reconstructed.) and the proposed conifer removal project. These actions, as described in the proposed action, would inconvenience visitors in the project area but are not expected to impact overall recreational use in the area. Impacts do include the potential for temporary traffic congestion along the proposed access road. The project would include temporary road closures that may cause congestion on about 4 miles of the 10.6 miles currently used for recreation access.

In addition, recreational use of the primitive campsites adjacent to the proposed access road would likely be avoided by campers due to the noise, dust, and traffic generated during project construction and drilling activities – in particular, two dispersed campsite locations located adjacent to the project's proposed access road. These effects would be temporary and a short-term inconvenience to public visitors based on the project's timeline. It is possible that the project's construction activities may overlap with peak recreation months. Recreation users displaced from campsites along the project's proposed access road would likely camp further east in areas away from the project area that are also adjacent to the rock-hounding sites. Any future SRP requests would be subject to the same temporary effects as general recreation users.

Cumulative Effects

Alternative 1 and 2

The 2015 Oregon Greater Sage-grouse RMP Amendment has impacts on Special Recreation Permit issuance in the area, requiring a state-level conformance review that would extend the permit process and seasonal restrictions that might restrict SRP activities during certain times of year. The GRSG ARMPA SRP stipulations are in addition to the temporary effects of the proposed actions and depending on how the timing of those effects and the seasonal wildlife restrictions overlap, the feasibility of the SRP permittee's proposal may require additional flexibility with the scheduling of the SRP activities.

Alternative 2

As a result of the proposed project development, an expected increase of an estimated two trips per month for maintenance visits to Glass Butte are expected. Current impacts from the maintenance of existing permitted developments in the project area are estimated at five vehicle trips per month. Both the existing use and proposed future use of these maintenance visits to Glass Buttes is a negligible impact on recreation users in the area. These visits do not result in any closures or congestion for public visitation.

Chapter 4 Public and other involvement

Tribes

The Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes.

Individuals, organizations, and agencies consulted

Ranchers, private landowners, and other right-of-way holders in the area. Lake County Judge, Harney County Judge, Harney County Planning Department, Crook County Judge, Deschutes County Soil & Water Conservation District (SWCD), Harney SWCD, Crook County SWCD, Crook County and Deschutes County Extension offices (Oregon State University), the US Fish & Wildlife Service in Bend, Oregon Department of Fish & Wildlife (ODFW) in Bend, ODFW Prineville, ODFW Hines, T Oregon Department of Transportation, Oregon Department of Environmental Quality, Oregon Department of Energy, Oregon Department of Geology & Minerals, Oregon Division of State Lands, Oregon Department of Water Resources, Oregon Parks & Recreation Department, Oregon Employment Department, the Oregon Governor, Congressmen Ron Wyden, Earl Blumenauer and Peter Defazio, USDA Deschutes National Forest, USDA Ochoco National Forest, Crook County Stockgrowers, Deschutes County Four Wheelers, Oregon Natural Desert Association, Native Forest Council, Blue Mountain Biodiversity Project, Deschutes Basin Land Trust, Crooked River Watershed Council, Ochoco Chapter Oregon Hunters' Association (OHA), Redmond Chapter OHA, Central Oregon Juniper Working Group, The Wilderness Society, National Wildlife Federation, The Nature Conservancy, Oregon Wild, Northwest Environmental Defense Council, Oregon Chapter Sierra Club, Sierra

Club Juniper Group, Oregon's Wildlife & Land Usage Alliance, Renewable Northwest Project, Center for Water Advocacy, Natural Resource Conservation Service, and Canaries Who Sing.

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Appendices


Appendix A – Maps


Glass Butte Communication Site Right-of-Way and RMP Amendment


August 2017


Map 1: Project Area

Greater Sage-grouse Habitat


 Priority Habitat Management Area (PHMA)


 General Habitat Management Area (GHMA)


 Roads


 Highways

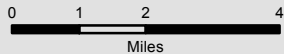
Administered Lands

 Bureau of Land Management

 U.S. Forest Service

 State

 Private



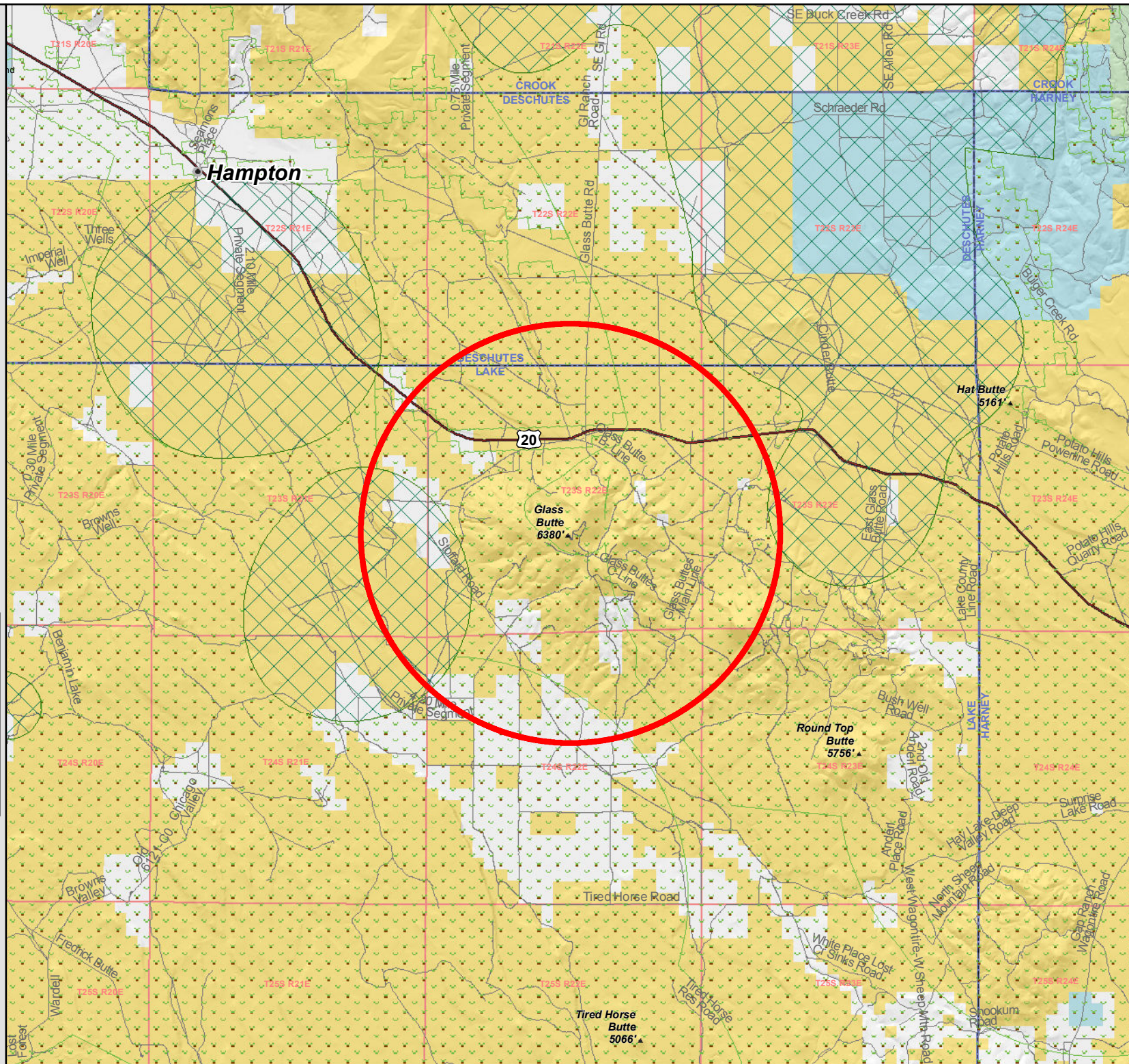
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Bureau of Land Management



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Proposed staging areas, access route, and conifer removal

August 2017

Map 2

-  Staging area
-  Conifer removal

Access routes and sage-grouse seasonal restrictions on surface disturbance:

-  Breeding habitat: 3/1-5/15; Brood-rearing habitat: 7/1-10/31
 -  Brood-rearing habitat: 7/1-10/31
 -  Breeding habitat: 3/1-5/15; Winter habitat: 11/1-2/28
 -  Decommission
 -  No restrictions
 -  Bureau of Land Management
 -  Private/Unknown
- 0 0.5 1
Miles

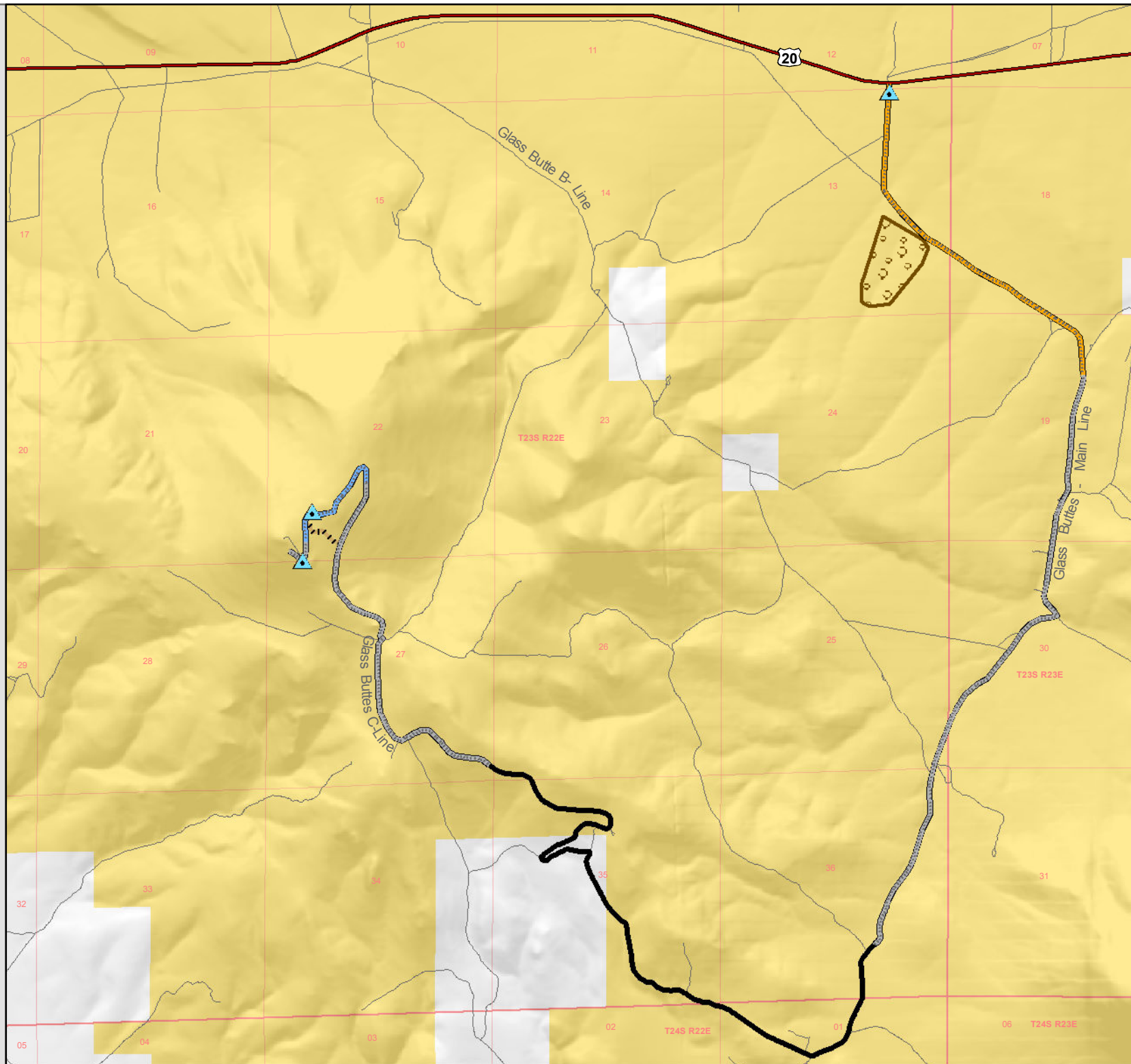
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


Proposed communication facilities and VRM Class modification

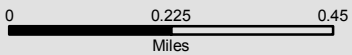
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Map 3

-  Communication site facilities
-  Proposed access road
-  Proposed VRM change from class II to class IV
-  Roads

Existing VRM Classes

-  VRM II - Largely retain the existing character of the landscape
-  VRM IV - Modification of the character of the landscape is allowed
-  Bureau of Land Management



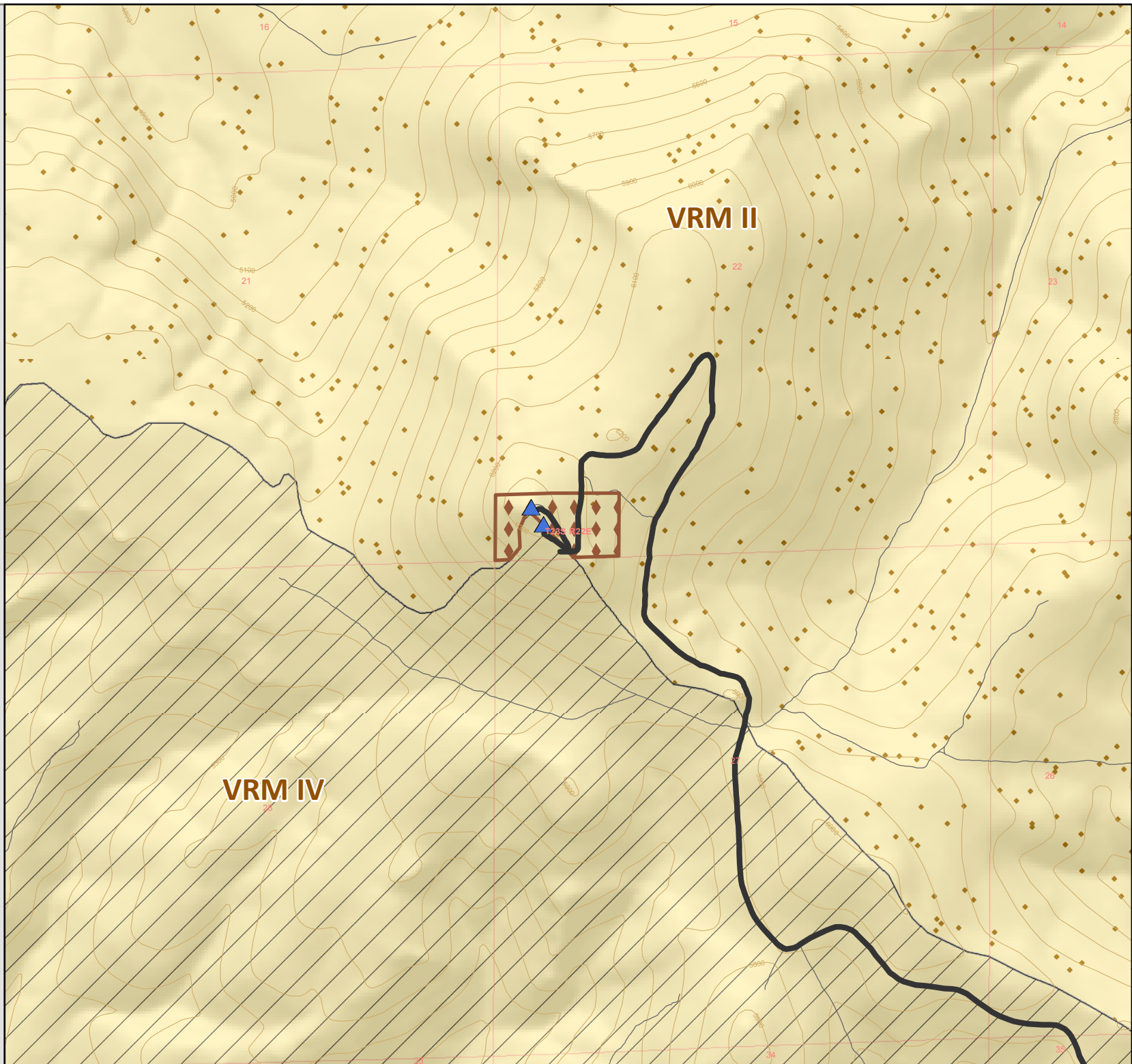
**U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management**



PRINEVILLE DISTRICT

3050 NE Third Street, Prineville, OR 97754
Phone: 541-416-6700

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.



Appendix B – References

- Clark, T.W. and M.R. Stromberg, 1987. Mammals in Wyoming. University Press of Kansas, Lawrence, KS.
- Connelly, J.W., M.A. Schroeder, A.R. Sands and C.E. Braun, 2000. Guidelines to manage sage grouse populations and their habitats. *Wildlife Society Bulletin* 28(4):967-985.
- Cox, M., D. W. Lutz, T. Wasley, M. Fleming, B. B. Compton, T. Keegan, D. Stroud, S. Kilpatrick, K. Gray, J. Carlson, L. Carpenter, K. Urquhart, B. Johnson, and C. McLaughlin, 2009. Habitat Guidelines for Mule Deer: Intermountain West Ecoregion. Mule Deer Working Group, Western Association of Fish and Wildlife Agencies.
- Evans, W.R. Y. Akashi, N.S. Altmand, and A.M. Manville, 2007. Response of night-migrating songbirds in cloud to colored and flashing light. *North American Birds*. Vol. 60: 476-488.
- Hanser, S.E., Aldridge, C.L., Leu, M., Rowland, M.M., Nielsen, S.E., and Knick S.T., 2011, Greater Sage-Grouse: General Use and Roost Site Occurrence with Pellet Counts as a Measure of Relative Abundance, p. 112–140 in S. E. Hanser, M. Leu, S. T. Knick, and C. L. Aldridge, eds., Sagebrush ecosystem conservation and management: ecoregional assessment tools and models for the Wyoming Basins: Allen Press, Lawrence, KS.
- Olsen, R. 1992. Mule Deer Habitat Requirements & Management in Wyoming. B-965. Department of Renewable Resources.
- Oregon Department of Fish and Wildlife (ODFW), 2015a. Mule deer population trend in Oregon by Wildlife Management Unit 2010-2015. Downloaded August 26, 2016 from http://www.dfw.state.or.us/resources/hunting/big_game/controlled_hunts/docs/hunt_statistics/15/Mule_Deer_10-15_26Jun15.pdf
- Oregon Department of Fish and Wildlife (ODFW), 2015b. Rocky Mountain elk population size, bull ratio, and cald ratio by WMU in Oregon 2010-2015. Downloaded August 26, 2016 from http://www.dfw.state.or.us/resources/hunting/big_game/controlled_hunts/docs/hunt_statistics/15/RM_Elk%2010-15_27Jun15.pdf
- Patricelli, G.L., J.L. Blickley, S.L. Hooper, 2013. The impacts of noise on greater sage-grouse: A discussion of current management strategies in Wyoming with recommendations for further research and interim protections. University of California, Davis, CA
- Perry, C and R. Overly. 1977. Impact of roads on big game distribution in portions of the Blue Mountains of Washington, 1972-1973. Washington Game Dep. Appl. Res. Sect., Bull. 11, 39 p. Olympia

Sage-grouse National Technical Team Report, 2011. A report on National Greater Sage-grouse Conservation Measures.

Schroeder, M. A., C. L. Aldridge, A. D. Apa, J. R. Bohne, C. E. Braun, S. D. Bunnell, J. W. Connelly, P. A. Deibert, S. C. Gardner, M. A. Hillard, G. D. Kobriger, S. M. McAdam, C. W. McCarthy, J. J. McCarthy, D. L. Mitchell, E. V. Rickerson, and S. J. Stiver. 2004. Distribution of sage-grouse in North America. *Condor* 106:363-376.

Stiver, S.J., T.E. Rinkes, D.E. Naugle, P.D. Makela, D.A. Nance, and J.W. Karl, eds. 2015. Sage-grouse Habitat Assessment Framework: A Multiscale Assessment Tool. Technical Reference 6710-1. Bureau of Land Management and Western Association of Fish and Wildlife Agencies, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management, 1980. Wilderness Inventory – Oregon/Washington, Final Intensive Inventory Decisions.

U.S. Department of the Interior, Bureau of Land Management, 1989. Brothers/La Pine Resource Management Plan Record of Decision. BLM – OR-ES-89-14-2410.

U.S. Department of the Interior, Bureau of Land Management, 2004. 8100 (Manual) – The Foundations for Managing Cultural Resources.

U.S. Department of the Interior, Bureau of Land Management, 2010. Glass Butte Communication Site Management Plan. 31 pp.

U.S. Department of the Interior, Bureau of Land Management, 2012. Midnight Point and Mahogany Geothermal Exploration Projects, Glass Buttes, Oregon, 2012 BLM – Prineville and Burns Districts, DOE/EA-1925

U.S. Department of the Interior, Bureau of Land Management, 2015. Draft Handbook 1780-1 Improving and Sustaining BLM-Tribal Relations (P).

U.S. Department of the Interior, Bureau of Land Management, 2015b. Oregon Greater Sage-grouse Approved Resource Management Plan Amendment.

U.S. Department of the Interior, U.S. Fish and Wildlife Service, 2010. Endangered and Threatened Wildlife and Plants; 12-month findings for the Petitions to List the Greater Sage-grouse (*Centrocercus urophasianus*) as Threatened or Endangered; Proposed Rule. 50 CFR Part 17. Federal Register, Volume 75, Number 55, Tuesday March 12, 2010, pp. 13910-14014.

U.S. Department of the Interior, U.S. Geological Survey, 1981. Hat Butte Quadrangle Oregon 7.5 Minute Series (Topographic), Hat Butte, Oregon N4430- W11952.5/7.5 1981 DMA 2071 III SW_Series V892.

U.S. Department of the Interior, U.S. Geological Survey 1983. Glass Butte Quadrangle Oregon 7.5 Minute Series (Topographic), Glass Butte Oregon Provisional Division 1983 43120-E1-TF-024.

Ward, A. Lorin. 1976. Elk behavior in relation to timber harvest operations and traffic on Medicine Bow Range in south-central Wyoming. In Proceedings of the elk-logging-roads symposium, Moscow, Idaho, Dec. 16-17, 1975, p. 32-43. Susan R. Hieb, ed. Univ. Idaho, Moscow.

Wasley, T. 2004. Mule Deer Population Dynamics: Issues and Influences. Nevada Department of Wildlife Biological Bulletin No. 14.

Witmer, G.W. and D.S. DeCalesta, 1985. Effects of forest roads on habitat use by Roosevelt elk. Northwest Science (2): 122-125.

Appendix C – Visual Resource Management Classes

- Class I – The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II – The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.
- Class III – The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- Class IV – The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Appendix D – Programmatic Agreement

DRAFT

**PROJECT PROGRAMMATIC AGREEMENT
BETWEEN THE
BUREAU OF LAND MANAGEMENT,
THE BONNEVILLE POWER ADMINISTRATION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND THE
OREGON STATE HISTORIC PRESERVATION OFFICE
REGARDING THE GLASS BUTTE RADIO STATION PROJECT**

WHEREAS, the Bureau of Land Management (BLM) is considering the issuance of a federal right-of-way (ROW) grant, as applied for by the Bonneville Power Administration (BPA), for the proposed Glass Buttes Radio Station Project (undertaking) pursuant to Section 106 of the National Historic Preservation Act (NHPA), and its implementing regulations (54 USC § 306108; 36 CFR 800); and

WHEREAS, the BLM has determined that issuance of the ROW grant triggers the requirements of Section 106 of the NHPA for the undertaking as defined at 36 CFR 800.16(y); and

WHEREAS, the proposed undertaking consists of the construction, operation, and maintenance of a communication facility, use of staging areas for construction equipment during construction, and use and improvements to an existing access road (road) linking U.S. Route 20 to the undertaking's proposed communication facility near the peak of Glass Butte, and more specifically, the proposed communication facility would include a 100 foot tall self-supporting steel lattice tower with a 35 foot by 35 foot concrete foundation, a one-story communication building that would be an approximately 20 feet wide, 52 feet long, and 15 feet high concrete masonry unit block veneer building, and one 2000 gallon propane tank installed on a concrete pad all within a graded and rocked 2.3 acre area amongst and in between several existing communication facilities and approximately 120 feet southeast of Glass Butte's peak, and furthermore, the undertaking would provide BPA the ability to assure the secure and reliable operation of its power transmission network in Oregon and adjoining states and allow enhanced real time monitoring and management of the power grid ensuring against the possibility of significant power transmission failures; and

WHEREAS, the undertaking would provide communications reinforcement for power system information and controls as required by NERC standard COM-001-1, and the undertaking would provide protection and restoration of Critical Infrastructure which are among the highest priority for Homeland Security coordination as provided in Executive Order 13228 and Homeland Security Presidential Directive (HSPD) -7, and the undertaking would provide increased communications and data path reliability for the operation of the power system which is in accordance with the Western Electric Coordinating Council (WECC) requirement for critical communications circuits and for Remedial Action Schemes (RAS); and

WHEREAS, BPA is directed by the Federal Columbia River Transmission System Act to construct improvements, additions, and replacements to its transmission system necessary to maintain electrical stability and reliability, and to provide service to BPA's customers (16 U.S.C. § 838b(b-d)); and

WHEREAS, NHPA sites, as well as, properties of traditional religious and cultural importance to Indian tribes (also known as Traditional Cultural Properties) that have not yet been evaluated for potential inclusion into the National Register of Historic Places will hereafter be referred to in this agreement as properties and the Glass Buttes TCP respectively; and

WHEREAS, properties and the Glass Buttes TCP include those cultural resources analyzed in the *Glass Butte Communication Site Right of Way and Brothers/La Pine Resource Management Plan Amendment Environmental Assessment DOI-BLM-ORWA-P000-2013-0017-EA*; and

WHEREAS, the federally recognized tribes mentioned in this document will hereafter be listed in alphabetical order and include the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes; and

WHEREAS, background research, consultation with consulting parties, and an appropriate level of field investigation has established the presence of properties within the APE and that the undertaking may have an adverse effect on those properties if they are determined eligible for listing in the National Register of Historic Places, and the BLM has consulted with the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, the Klamath Tribes, the ACHP and SHPO pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the NHPA; and

WHEREAS, through consultation with consulting parties the BLM has defined the undertaking's area of potential effects (APE) as described in Attachment I.; and

WHEREAS, the BLM is the lead federal agency involved in the undertaking as defined at 36 CFR 800.2(a)(2); and

WHEREAS, the BLM intends to issue a ROW grant for the construction, operation, and maintenance of the undertaking, following the issuance of the Decision Record authorizing the ROW grant, and the ROW grant will incorporate by reference this PA; and

WHEREAS, the BPA intends to construct, operate, and maintain the undertaking according to the approved Plan of Development for the undertaking, which shall be appended to and made a part of the Decision Record authorizing the ROW grant; and

WHEREAS, the Advisory Council on Historic Preservation (ACHP) decided to participate in consultation for this undertaking, because the undertaking presents issues of concern to Indian tribes as permitted by 36 CFR 800 Appendix A (c)(4), furthermore the ACHP has elected to be a signatory to this PA; and

WHEREAS, the BPA intends to eventually decommission the undertaking according to the stipulations within ROW which would include the use of three tribal cultural resource monitors individually selected by the BPT, CTWSRO, and Klamath Tribes that would be funded by the BPA to monitor construction activities within the proposed and finalized ROW, and these cultural resource monitors would follow the inadvertent discovery plan that is part of this PA; and

WHEREAS, consulting parties include the BPT, CTWSRO, Klamath Tribes, BPA, ACHP, and SHPO, all of which include those invited to consult on the undertaking, requested to consult on the undertaking, or are consulting on the undertaking pursuant to 36 CFR 800; and

WHEREAS, the BLM has consulted and continues to consult with the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, the Klamath Tribes, BPA, ACHP and Oregon State Historic Preservation Office (SHPO) pursuant to 36 CFR 800; and

WHEREAS, the BLM through its government-to-government relationship with tribal governments has consulted and will continue to conduct tribal consultation with the BPT, CTWSRO, and Klamath Tribes regarding the undertaking and requirements of other statutes, as applicable, such as the National Environmental Policy Act (NEPA), the Native American Graves

Protection and Repatriation Act (NAGRPA), the American Indian Religious Freedom Act (AIRFA), ARPA, Federal Land Policy and Management Act (FLPMA), and agency-specific legislation pursuant to 36 CFR 800.2(a)(4), furthermore consultation will also continue as applicable regarding Executive Order 13007, the Religious Freedom Restoration Act (RFRA), and Executive Order 13175; and

WHEREAS, during consultation amongst the BLM, BPA, BPT, CTWSRO, and Klamath Tribes and subsequent consultation with consulting parties including the SHPO and ACHP, it was determined that alternative 3 or “Option #3”, a proposed location for the undertaking, was not the preferred location for the undertaking and that other alternative locations for the undertaking should be considered given tribal concerns and that “Option #4”, “Option #2” or “Option #1” are the preferred locations for the undertaking as depicted in Attachment II.; and

WHEREAS, “Option #3 corresponds to the “Alternative 3” saddle location for BPA’s Glass Butte Radio Station as documented in the *Glass Butte Communication Site Right of Way and Brothers/La Pine Resource Management Plan Amendment Environmental Assessment DOI-BLM-ORWA-P000-2013-0017-EA*; and

WHEREAS, during subsequent consultation amongst consulting parties, “Option #4” was determined to be the preferred location of BPA’s Glass Butte radio station; and

WHEREAS, “Option #4” corresponds to the “Alternative 2” proposed action location for BPA’s Glass Butte Radio station as documented in the *Glass Butte Communication Site Right of Way and Brothers/La Pine Resource Management Plan Amendment Environmental Assessment DOI-BLM-ORWA-P000-2013-0017-EA*; and

WHEREAS, the BPA contracted and funded a cultural resource management firm to conduct background research and a field survey within the APE to prepare information, analyses and recommendations regarding the undertaking’s potential effect to historic properties as permitted at 36 CFR 800.2(a)(3), and the BPA funded two archaeologists and one archaeology technician individually selected by each consulting tribe to survey with and aid the cultural resource firm in identification of religious and cultural historic properties of significance to the tribes within the APE, and the cultural resource survey contracted and funded by the BPA is ongoing, and the BPA contracted and funded three separate and ongoing oral history or Traditional Cultural Property (TCP) studies regarding the APE and Glass Buttes landform with the BPT, CTWSRO, and Klamath Tribes; and

WHEREAS, the cultural resource survey has been documented in the *Cultural Resource Survey of the Proposed Glass Buttes Radio Station Project, Lake County, Oregon* (report) and consultation with all consulting parties has been sought, has occurred, and will continue regarding the eligibility of historic properties identified and evaluated within that report prior to the report’s finalization, and finalization of the report will be phased; and

WHEREAS, TCP studies for the APE will be carried out in phases, as set forth in this PA and as those studies are able to be completed and are released by the tribes, they will then be used in concert with field survey data for a Glass Buttes TCP evaluation on a National Register of Historic Places Form that BPA has contracted a cultural resource management firm to complete; and

WHEREAS, the BLM has consulted and will continue to consult with the BPT, CTWSRO, and Klamath Tribes, to determine if the undertaking would have an adverse effect on potentially eligible historic properties or a Glass Buttes TCP with religious and cultural significance to these tribes; and

WHEREAS, the BLM has consulted with and invited the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, and the Klamath Tribes to be concurring parties to this PA; and

WHEREAS, the BPA, a potential grantee of the ROW, through signature to this PA, agrees to carry out the stipulations herein under the oversight of the BLM, and is an invited signatory to this PA per 36 CFR 800.6(c)(2)(iii); and

WHEREAS, the BLM will not issue a Notice to Proceed permitting any ground disturbing or construction activities authorized by the ROW prior to completing a Mitigation Plan in accordance with the stipulations in this PA; and

WHEREAS, the BLM will require that the undertaking be executed in accordance with the conditions of the ROW granted by the BLM and in accordance with the stipulations of this PA, which shall be appended to and made part of the Decision Record authorizing the ROW grant; and

WHEREAS, the stipulations of the ROW will include and require the execution and resolution of adverse effects as determined through the stipulations of this PA; and

NOW, THEREFORE, the BLM, BPA, SHPO, and ACHP agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

The BLM shall ensure that the following measures are carried out:

I. Identification and Evaluation of Historic Properties

- A. The BLM will ensure that all Section 106 of the NHPA work, completed to satisfy the terms in this PA, follows the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716) (Federal Register, September 29, 1983) and any applicable National Register Bulletins.
- B. Identification and Evaluation of Historic Properties by the BPA, BLM, and consulting parties will occur in the following phases.
 1. Phase 1: the Cultural Resource Survey Report for this undertaking, titled *Cultural Resource Survey of the Proposed Glass Buttes Radio Station Project, Lake County, Oregon*, will be finalized. Finalization will include, at a minimum, the identification and evaluation of historic properties documented in the report (excluding the Glass Buttes TCP) within the ROW being considered including the road, staging areas, and communication facility that may have adverse effects from the undertaking. And the BLM will seek consensus determinations of eligibility with the SHPO for all of these properties pursuant to 36 CFR 800.4(c)(2).
 2. Phase 2: BPA's contractors will complete three separate and finalized oral history or TCP studies regarding the APE and Glass Buttes landform with the BPT, CTWSRO, and Klamath Tribes. Final drafts shall be received at the latest by (select an appropriate date with consulting parties). If final drafts

are not received from or released by the BPT, CTWSRO, and Klamath Tribes by that date, Phase 3 shall proceed. Otherwise, Phase 3 shall proceed once final drafts are received by the BLM or BPA. In addition, if tribes seek not to release final drafts to a contracted private archaeological firm through BPA, then tribes can release the final drafts to the BLM and BPA instead, and if necessary, they can provide their own Glass Buttes TCP National Register of Historic Places evaluations to the BLM for review and the subsequent insertion into the form described below.

3. Phase 3: the Glass Buttes TCP will be evaluated to determine if it is a historic property by BPA's contractor on a Glass Buttes TCP National Register of Historic Places Form. If necessary, the BLM will complete the form or the applicable portions of the form if confidentiality concerns regarding the information in the form arise from the Burns Paiute Tribe, the Confederated Tribes of Warm Springs Reservation of Oregon, or the Klamath Tribes. The determination of eligibility will incorporate research, applicable national register bulletins, the applicable findings and historic properties identified and evaluated in the survey report including those with religious and cultural significance to the BPT, CTWSRO, or Klamath Tribes, and the available oral history or TCP Studies. The Glass Buttes TCP will be evaluated pursuant to Section 106 of the NHPA, 36 CFR 800.4(c)(1) and 36 CFR 800.4(c)(2). And thus, the SHPO, BPT, CTWSRO, Klamath Tribes, and the BLM will consult on the eligibility of the Glass Buttes TCP, and the BLM will seek a consensus determination of eligibility with the SHPO. Phase 3 will occur within a 90 day period once Phase 2 is complete.

- C. If properties are determined to be historic properties, then an assessment of adverse effects to those historic properties would occur.

II. Assessment of Adverse Effects to Historic Properties

1. After Phase 3, the BLM would apply the criteria of adverse effect to historic properties pursuant to 36 CFR 800.5(a)(2) and this would be completed by the BLM in consultation with the SHPO and the BPT, CTWSRO, and Klamath Tribes. Within 40 days of that assessment, the BLM would consider any views concerning those effects as provided by consulting parties and the public in two separate meetings. The BLM would also gather views from consulting parties and the public through correspondence or by phone, if that is their preferred method. Once effects are determined, resolution of any adverse effects would occur.

III. Resolution of Adverse Effects

- A. Previous BLM Consultation with the BPT, CTWSRO, Klamath Tribes, BPA, ACHP, and SHPO regarding the resolution of potential adverse effects to historic properties resulted in the following list of potential mitigation:
 1. A total of three tribal cultural resource monitors individually selected by the BPT, CTWSRO, and Klamath Tribes would be BPA funded to monitor construction activities within the proposed and finalized ROW. The inadvertent discovery plan would be followed when inadvertent discoveries occur, new historic properties are discovered, or when unanticipated effects occur to known historic properties.

2. BPA would ensure that their contractors and any other BPA project personnel do not go outside of and beyond the ROW or clearly marked designated construction work areas for any purposes, to ensure that historic properties are not purposely or inadvertently harmed by any of their personal activities.
3. Potential Mitigation for Adverse Effects to a Glass Buttes TCP: the BLM would begin and follow through with the National Register (NR) nomination process to list a NR eligible Glass Buttes TCP on the NR once a Glass Buttes TCP National Register of Historic Places Form is complete and this would be conducted with the SHPO as appropriate.
4. Potential Mitigation for Adverse Effects to a Glass Buttes TCP: the BLM would conduct a total of 150 acres of cultural resource survey as mitigation for this and a similar project proposed by AT&T. The timing and locations of those surveys on public lands would be determined through future consultation.
5. Potential Mitigation for Adverse Effects to Historic Properties: a kiosk celebrating over 14,000 years Glass Buttes obsidian use would be constructed near the intersection of the ROW and U.S. Route 20. This would be completed by the BLM and funded by AT&T and BPA. Consulting parties would be invited to consult on the kiosk, its placement, and its content.
6. Potential Mitigation for Adverse Effects to Historic Properties: an ARPA message or other similar message may be put on the kiosk, as well as, information regarding current “rockhound” rules and regulations.
7. Potential Mitigation for Adverse Effects to Historic Properties: additional ARPA signs would be placed along roads as necessary. Signs would be funded by BPA and installed by the BLM.
8. Potential Mitigation for Adverse Effects to Historic Properties: the BLM would develop a rockhounding management plan for Glass Buttes.
9. BPA may avoid impacts to Historic Properties along the road through the use of temporary geotextile fabric and gravel during construction and would then remove geotextile fabric and gravel after construction.
10. Staging areas proposed for use by BPA would seek to minimize or avoid impacts to historic properties through the use of temporary fencing, the placement of geotextile fabric, the presence of tribal cultural resource monitors or any combination thereof.
11. BPA would ensure that their contractors adhere to an Inadvertent Discovery Plan written by the BLM.
12. A total of three tribal cultural resource monitors individually selected by the BPT, CTWSRO, and Klamath Tribes would be BPA funded to monitor the decommissioning of BPA’s radio station (communication facility) when that process occurs.
13. When decommissioning occurs, BPA would ensure that their contractors and

any other BPA project personnel do not go outside of and beyond the ROW or clearly marked designated construction work areas for any purposes, to ensure that historic properties are not purposely or inadvertently harmed by any of their personal activities.

B. The BLM would resolve adverse effects to historic properties pursuant to 36 CFR 800.6(a) through consultation with the BPT, CTWSRO, Klamath Tribes, BPA, ACHP, SHPO, and the public within 40 days of the assessment of adverse effects to historic properties. The BLM would consider any views concerning those effects as provided by consulting parties and the public in two separate meetings. The BLM would also gather views from consulting parties and the public through correspondence or by phone, if that is their preferred method. The BLM would then provide the mitigation measures **via a Mitigation Plan** to the consulting parties, and the BLM with BPA would assure that the necessary mitigation measures are completed during and after all construction activities.

IV. Duration

This PA will expire if its terms are not carried out within 15 years from the date of its execution. Prior to such time, BLM may consult with the other signatories to reconsider the terms of the PA and amend it in accordance with Stipulation VII below.

V. Post-Review Discoveries

If properties are discovered that may be historically significant or unanticipated effects on historic properties found, the BLM shall implement the *Inadvertent Discovery Plan* included as Attachment III. within this PA.

VI. Monitoring and Reporting

Each year, by January 31st, following the execution of this PA until it expires, terminates, or the terms of the PA are met, the BLM shall provide all parties to this PA a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in the BLM's efforts to carry out the terms of this PA.

VII. Dispute Resolution

Should any signatory* or concurring party to this PA object at any time to any actions proposed or the manner in which the terms of this PA are implemented, the BLM shall consult with such party to resolve the objection. If the BLM determines such objection cannot be resolved, the BLM will:

- A. Forward all documentation relevant to the dispute, including the BLM's proposed resolution, to the ACHP. The ACHP shall provide the BLM with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the BLM shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. The BLM will then proceed according to its final decision.
- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the BLM may make a final decision on the dispute and proceed

accordingly. Prior to reaching such a final decision, the BLM shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the PA, and provide them and the ACHP with a copy of such written response.

- C. The BLM's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

VIII. Amendments

This PA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

IX. Termination

If any signatory to this PA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop an amendment per Stipulation VII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the PA upon written notification to the other signatories.

Once the PA is terminated, and prior to work continuing on the undertaking, the BLM must either (A) execute a Memorandum of Agreement pursuant to 36 CFR § 800.6, (B) execute a project Programmatic Agreement pursuant to 36 CFR § 800.14(b) or (C) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The BLM shall notify the signatories as to the course of action it will pursue.

Execution of this PA by the BLM and SHPO and implementation of its terms evidence that the BLM has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.**

Notes:

** This document assumes that the term "signatory" has been defined in the agreement to include both signatories and invited signatories.*

*** Remember that the agency must submit a copy of the executed MOA, along with the documentation specified in Section 800.11(f), to the ACHP prior to approving the undertaking in order to meet the requirements of Section 106. 36 CFR § 800.6(b)(1)(iv).*

**PROJECT PROGRAMMATIC AGREEMENT
BETWEEN
THE BUREAU OF LAND MANAGEMENT, THE BONNEVILLE POWER
ADMINISTRATION, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND THE OREGON STATE HISTORIC PRESERVATION OFFICE
REGARDING THE GLASS BUTTE RADIO STATION PROJECT**

CONCURRING PARTIES:

The Klamath Tribes

_____ Date _____
Don Gentry, Tribal Council Chairman

The Burns Paiute Tribe

_____ Date _____
Joe DeLaRosa, General Council Tribal Chair

The Confederated Tribes of the Warm Springs

_____ Date _____
Eugene "Austin" Green, Jr., Tribal Council Chairman

**PROJECT PROGRAMMATIC AGREEMENT
BETWEEN
THE BUREAU OF LAND MANAGEMENT, THE BONNEVILLE POWER
ADMINISTRATION, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND THE OREGON STATE HISTORIC PRESERVATION OFFICE
REGARDING THE GLASS BUTTE RADIO STATION PROJECT**

INVITED SIGNATORIES:

Bonneville Power Administration

_____ Date _____
F. Lorraine Bodi, Vice President, Environment, Fish and Wildlife

SIGNATORIES:

Bureau of Land Management

_____ Date _____
H.F. "Chip" Faver, BLM Prineville District CORA Field Manager

Oregon State Historic Preservation Officer

_____ Date _____
Christine Curran, Deputy SHPO

Advisory Council on Historic Preservation

_____ Date _____
John M. Fowler, Executive Director