Jack-Ash Trail Project Environmental Assessment

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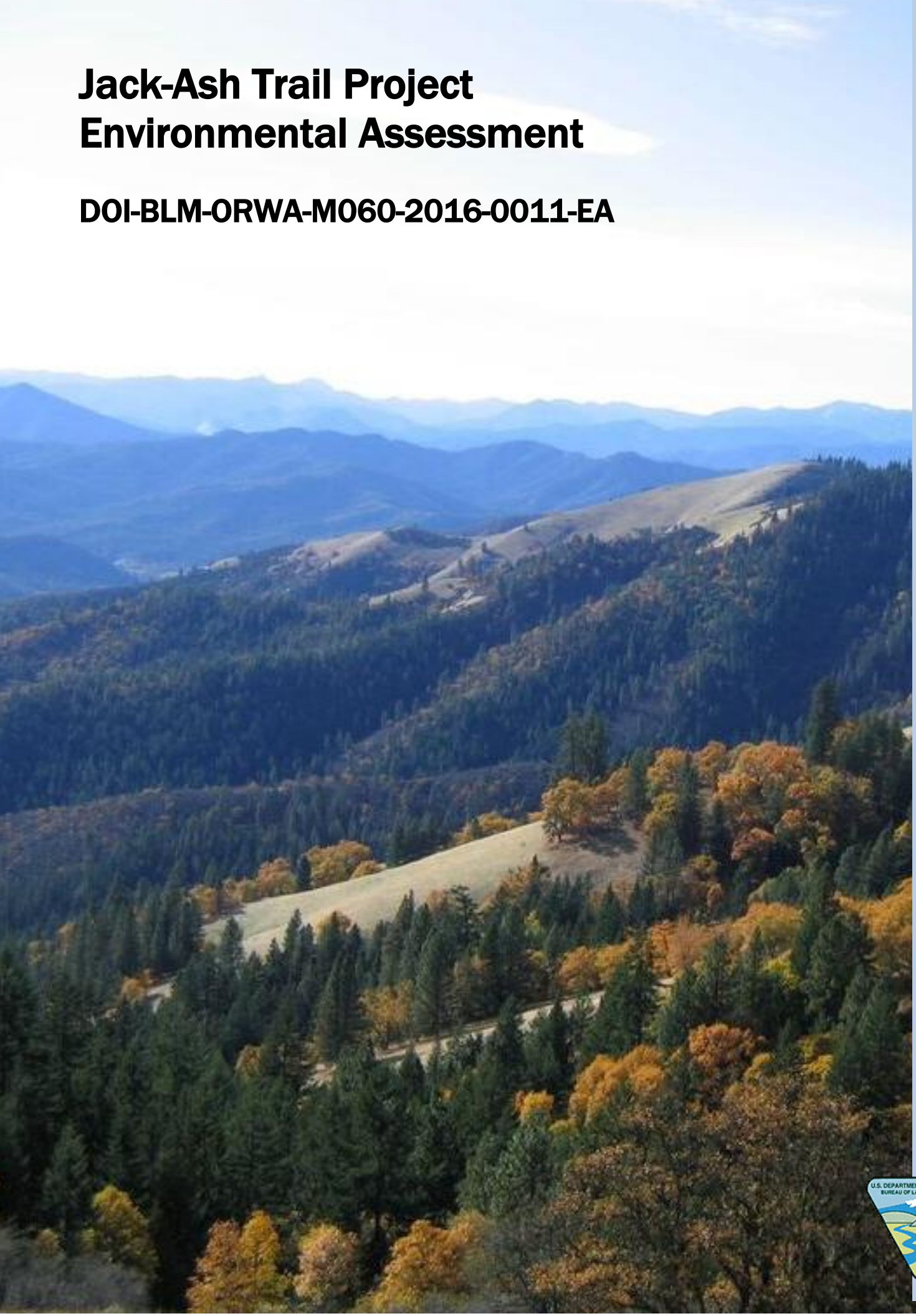

BLM

Medford District Office

June 2016

Dear Reader:

The Bureau of Land Management (BLM) has completed the environmental analysis for Phase I of the proposed Jack-Ash Trail Project. This environmental assessment (EA) documents that analysis.

This sustainable trail system would connect a Jacksonville trail system with an Ashland trail system. The Jacksonville to Ashland Trail, referred to as the Jack-Ash Trail, would run primarily along the ridges and crests of the Siskiyou Mountains in southwest Oregon, Jackson County, between the two cities. Phase 1 of the Jack-Ash Trail would connect to the north and south ends of the Sterling Mine Ditch Trail creating a large loop around and over Anderson Butte. The route would primarily utilize existing BLM roads and historic trails and, in a few places, new trails would be constructed. The trail would provide recreation opportunities for equestrians, hikers, runners, and mountain bikers. Where the route runs concurrent with existing multiple-use roads, it would be open to both motorized and non-motorized users.

Construction would be completed in phases as funding becomes available. Initially, approximately 4.7 miles of trail would be constructed for Phase 1. Potential future phases of the Jack-Ash Trail would be analyzed under a separate environmental analysis, which would connect the system to the Pacific Crest National Scenic Trail along existing BLM and U.S. Forest Service roads; and to the proposed Applegate Ridge Trail, which would connect with the Cathedral Hills Trail system near Grants Pass.

If you would like to provide us with written comments regarding the Jack-Ash Trail Project and EA, please send them to Bureau of Land Management (Attention: Shanna McCarty), 3040 Biddle Road, Medford, OR 97504. Email comments may be sent to blm_or_md_mail@blm.gov (be sure to include "Attention: Shanna McCarty" in the subject).

The 30-day comment period for this EA begins when the legal notice of the EA's availability is published in Medford's *Mail Tribune* newspaper. Any comments you may have regarding the Jack-Ash Trail Project must be received by July 18, 2016, in order to be considered in the final decision for this project.

If confidentiality is of concern to you, please be aware that comments, including names and addresses of respondents, will be available for public review or may be held in a file available for public inspection and review. Individual respondents may request confidentiality. If you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act, you must state this clearly at the beginning of your written comment. Such requests would be honored to the extent allowed by law. All submissions from organizations or officials of organizations or businesses will be made available for public inspection in their entirety.

Thank you for your continued interest in the management of your public lands. Your input plays an important part in our land management decisions.

Kristi J. Mastrofini
Field Manager
Ashland Resource Area

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CHAPTER 1.0 PURPOSE AND NEED FOR THE ACTION

1.1 INTRODUCTION

This EA (environmental assessment) documents the environmental analysis the BLM conducted to estimate the potential site-specific effects on the human environment that may result from implementation of this project. The EA will provide the BLM's authorized officer (Ashland Resource Area Field Manager) with current information to aid in the decision-making process. It will also determine if there are significant impacts not already analyzed in the Environmental Impact Statement (EIS) for the Medford District's 1995 ROD/RMP (Record of Decision and Resource Management Plan; USDI 1995a) and whether a supplement to that EIS is needed or if a Finding of No Significant Impact is appropriate.

Chapter 1 of this EA describes the action proposed by the BLM, why the BLM is proposing this action, and the location of the Proposed Action. It also identifies the factors the decision maker will use for choosing the alternative that will best meet the purpose of and need for this project.

1.2 PROPOSED ACTION

The Ashland Resource Area of the Medford District is proposing to authorize construction of Phase 1 of a sustainable non-motorized trail system, referred to as the Jack-Ash Trail, for equestrians, hikers, runners, and mountain bikers (see Project Vicinity Map 1). The trail would connect a Jacksonville trail system with an Ashland trail system primarily along the ridges and crests of the Siskiyou Mountains in southwest Oregon, Jackson County. Phase 1 of the Jack-Ash Trail would connect to the north and south ends of the Sterling Mine Ditch Trail (SMDT) creating a large loop around and over Anderson Butte. This proposal and its potential construction are in partnership with the Siskiyou Upland Trails Association (SUTA), a community volunteer organization.

Phase 1 of this project would include construction of 4.7 miles of trails to create a 36-mile-long trail loop by its connection near the north and south ends with the existing and highly popular SMDT trail. In addition, four new trailheads would be designated in areas that already receive some recreational parking use. The route would primarily utilize existing BLM roads and historic trails, and in a few places, new trails would be constructed. The Jack-Ash Trail would be for non-motorized users except where the route runs concurrent with existing multiple-use roads (Map 2). This system would open up opportunities for users to take advantage of the existing network of BLM gravel roads in the Anderson Butte area to use other loops from the SMDT trailheads.

The future vision of the Jack-Ash Trail would connect to the Pacific Crest National Scenic Trail along existing BLM and USFS roads; and to the proposed Applegate Ridge Trail, which would connect with the Cathedral Hills Trail system near Grants Pass. The vision for further development of the future Jack-Ash route connecting Jacksonville trails with Ashland Watershed trails would be analyzed in a separate environmental analysis. The SUTA has been working closely with the BLM to re-open and expand trail opportunities in the SMDT system, and is committed to continued partnership with the BLM in helping design, construct, and maintain the SMDT as well as the Jack-Ash Trail.

1.3 PROJECT LOCATION

Phase 1

Phase 1 of the Jack-Ash Trail would be located along existing BLM roads on and near the ridge between the Little Applegate River and Bear Creek watersheds (5^{th}-field hydrologic units, or HUC 5). The proposed new trail segments are located on the upper slopes of Anderson Butte, upper- and mid-slopes of Grub Gulch, and a short segment on the lower slopes of Grub Gulch just above Sterling Creek. All of the proposed new segments on BLM-administered lands (approximately 4.7 miles total) occur in the Lower Little Applegate River watershed (Map 2).

The Project Area for Phase 1 of the Jack-Ash Trail is located south of the cities of Jacksonville and

Medford, and west of the Ashland/Phoenix/Talent area. It is bordered on the west by Sterling Creek, on the south by the Little Applegate River, and on the east by Anderson Butte Road.

Land in the Project Area is predominantly managed by the BLM, and all segments of proposed new trail are on BLM-administered land. The existing BLM and county roads that make up the majority of Phase 1 would be Anderson Creek Road (also known as Rush Creek Road) from its junction with Little Applegate Road near the Little Applegate Trailhead of the Sterling Mine Ditch Trail (NW 1/4 of Section 25, T 39S., R 2W), up to the junction with Anderson Butte Road (BLM Road # 38-2-24) at Section Line Gap (Section 18, T 39S., R 1W). From there the route runs northwesterly along Anderson Butte Road and then west near Grub Gulch and ends along BLM Road # 39-2-3.

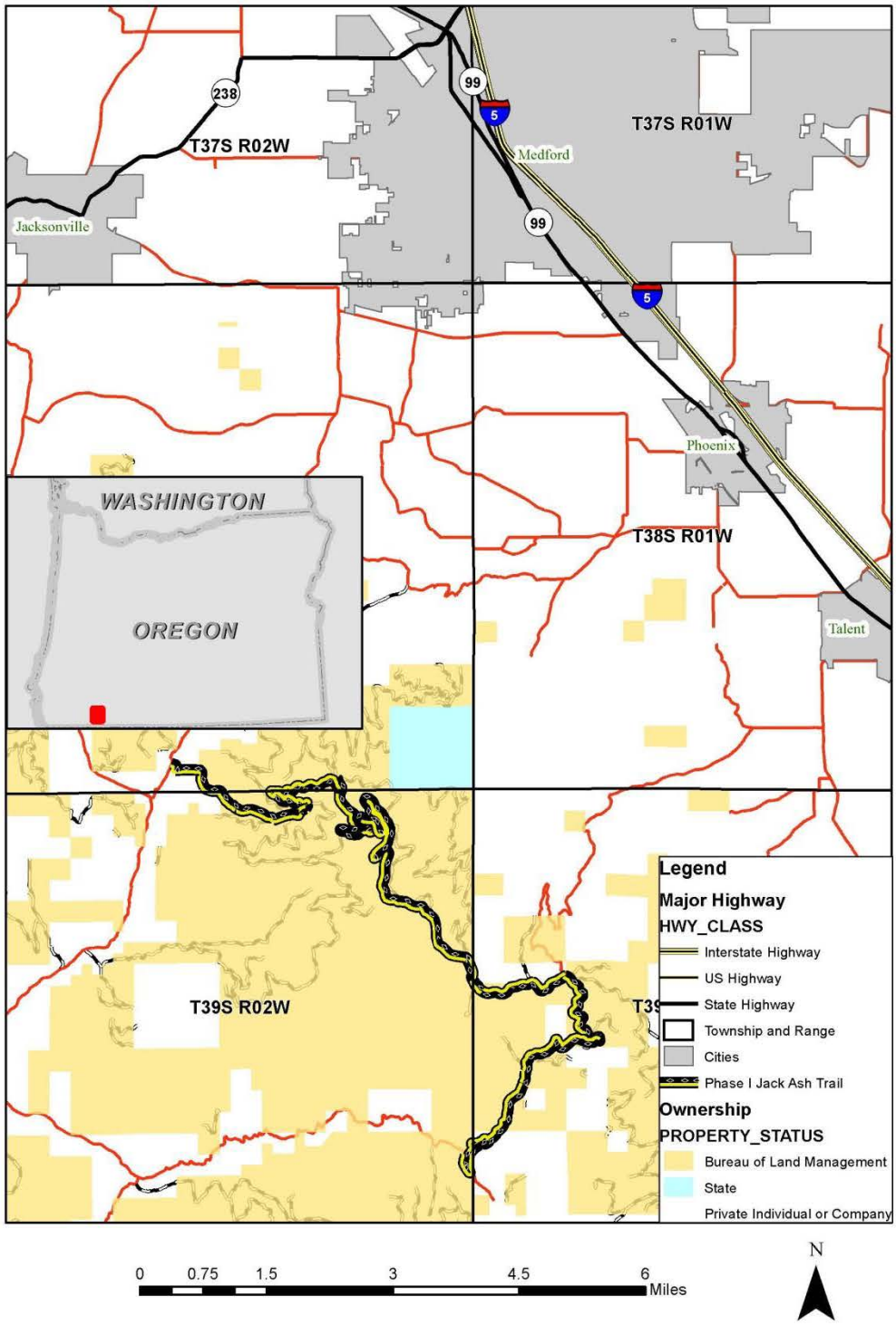
Future Phases

Future potential phases of the Jack-Ash Trail would continue north and south over BLM-administered and private land.

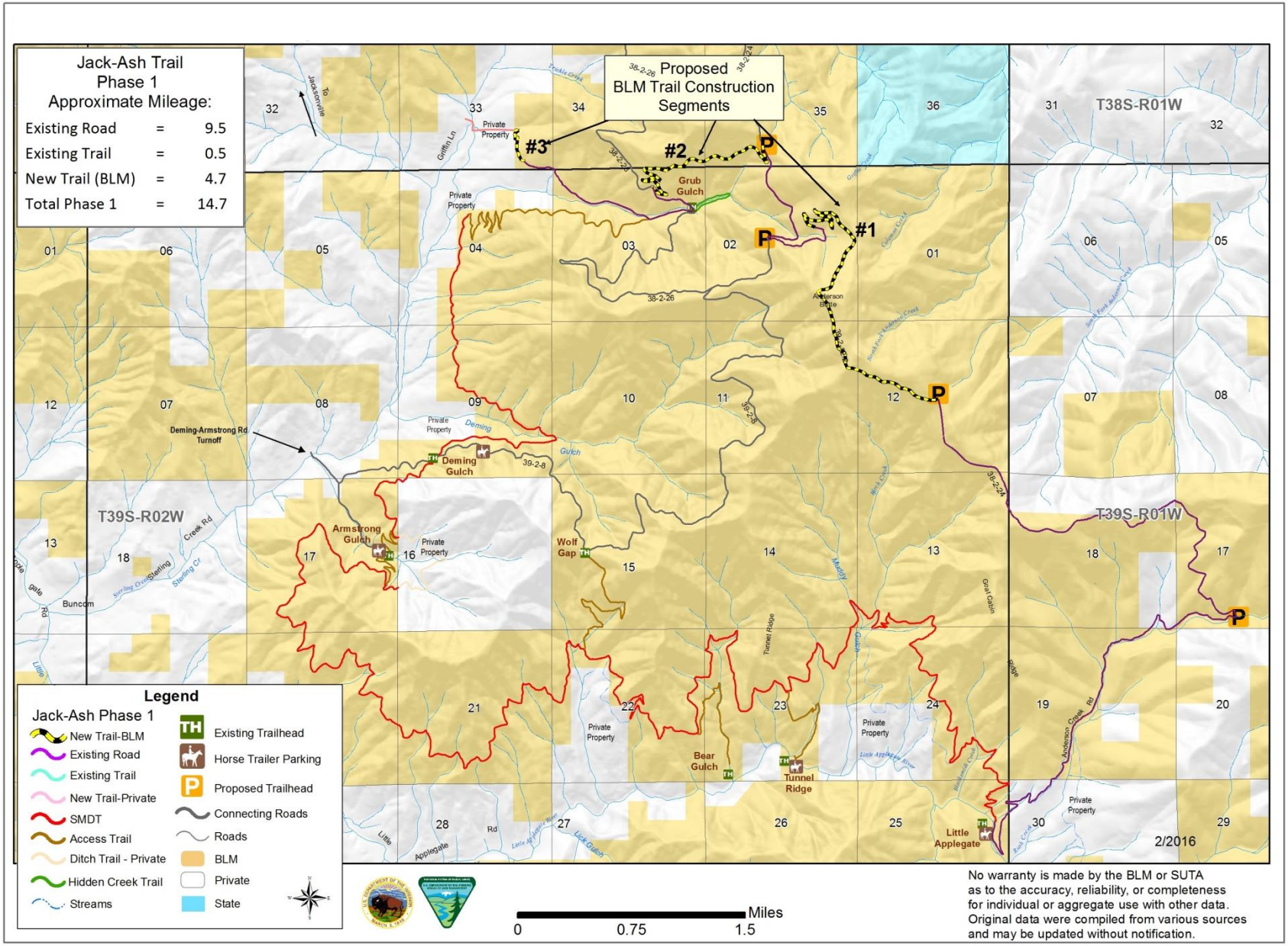
Map 3 shows the location of Phase 1 and SMDT in relation to the vision of the future Jack-Ash Trail, the Pacific Crest National Scenic Trail (PCNST), trail systems near Jacksonville, Ashland, and Grants Pass, and the proposed Applegate Ridge Trail.

View from the proposed route of the Jack-Ash Trail, from Anderson Butte looking westerly.

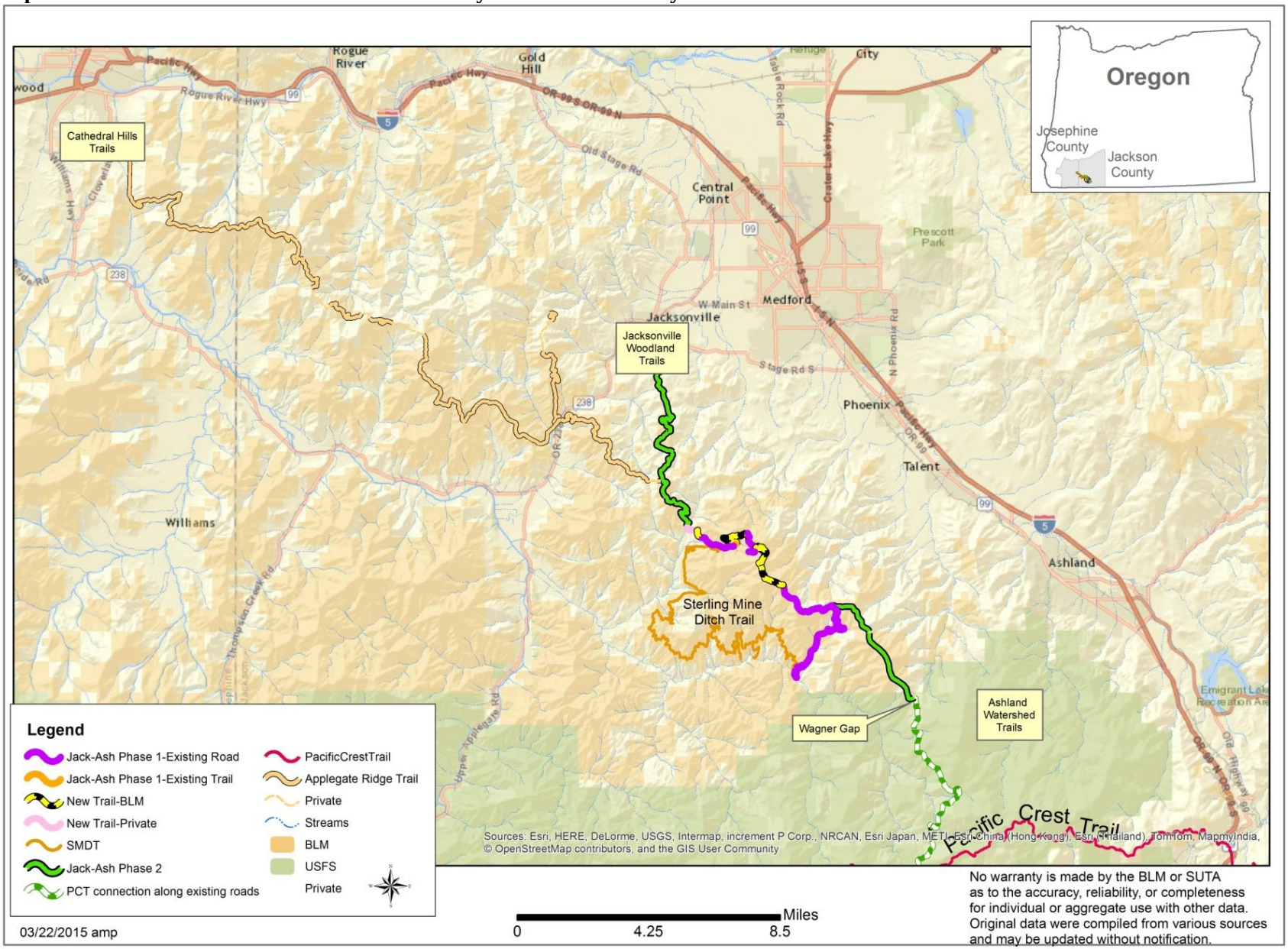
Map 1. Jack-Ash Trail Project – Phase 1 Project Vicinity



Map 2. Jack-Ash Trail Project – Phase 1



Map 3. Future Vision: Jack-Ash Trail Connectivity with Other Trail Systems



1.4 PURPOSE AND NEED FOR THE PROPOSAL

For a proposal to be considered as a reasonable alternative with implementation potential, any action alternative must meet the objectives provided in the 1995 Medford District ROD/RMP (USDI 1995a).

- *Provide a wide range of developed and dispersed recreation opportunities that contribute to meeting projected recreation demand within the Planning Area* (USDI 1995a, p. 63).

Non-motorized recreation use of trails, especially local trails, is growing rapidly and is Oregon's most popular form of outdoor recreation. Implementation of Phase 1 of the Jack-Ash Trail would provide long-distance trail loop options for non-motorized trail users by its connection near the north and south ends of the existing and highly popular SMDT. This trail system would:

  - provide close-to-town/easy access from towns in the Rogue and Applegate Valleys,
  - further connect existing trail systems,
  - be a complete trail system loop, even without future further development of the Jack-Ash Trail segments, and
  - provide opportunities for both short- and long-distance non-motorized recreation.

- *Enhance recreation opportunities provided by existing and proposed watchable wildlife and wildflower areas and national back country byways* (Medford District ROD/RMP, p. 63).

The proposed Phase 1 route takes advantage of many scenic views offered from Anderson Butte, including using the old fire lookout as a vantage point for sweeping views of the entire region. Many portions of proposed new trail segments also pass through or are in view of spectacular wildflower areas.

- *Manage off-highway vehicle (OHV) use on BLM-administered land to protect natural resources, provide visitor safety, and minimize conflicts among various users* (Medford District ROD/RMP; USDI 1995a, p. 63).

Phase 1 Jack-Ash Trail would also help to reduce potential conflicts between motorized and non-motorized users by creating non-motorized trail segments around the slopes of Anderson Butte and Grub Gulch, allowing separation of motorized and non-motorized users.

- *Pursue recreation opportunities that will benefit local community economic strategies consistent with BLM land use objectives* (Medford District ROD/RMP; USDI 1995a, p. 63).

A well-designed trail system would draw trail runners and hikers from around the Rogue Valley and the Pacific Northwest, which would benefit local businesses. A number of local businesses have expressed support for this project and see it as a draw that could promote retail and service-related businesses in the greater Jacksonville and Applegate areas (Phase 1) and Rogue Valley (including restaurants, grocery stores, general and hardware stores, and gift shops).

- *Consider the interests of adjacent and nearby rural residential land owners during analysis, planning, and monitoring activities occurring within managed rural interface areas* (Medford District ROD/RMP; USDI 1995a, p. 88).

The BLM would consider possible impacts to private properties located near or adjacent to the proposed trail system and parking area. Adjacent land owners have expressed concerns about increased noise, litter, target shooting, and trespass from trail users.

- *Protect and conserve federal listed and proposed species, and manage their habitats to achieve their recovery* (Medford District ROD/RMP; USDI 1995a, p. 50).

The BLM would consider possible impacts to cultural artifacts or botanically sensitive areas in trail design and location. Impacts from trail users would be monitored and addressed if they occur.

The Southwest Trails Planning Region in the 2012 Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP) emphasized trail connectivity within urban areas and adjacent public lands as a top priority, *to connect communities with nearby parks and open spaces and connect land-based trails with water trails*. Two other top statewide trail objectives identified *the need for more trails in close proximity to where people live, and the need for additional non-motorized trails*.

In 2011 the SUTA, a community trails group, approached the BLM with an interest in connecting the existing trail systems of Ashland and Jacksonville. SUTA submitted a formal project proposal to the BLM with suggested trail locations for a trail system that would be constructed in phases as funding becomes available. In 2013 SUTA applied for Secure Rural Schools and Community Self-Determination Act, Title II funding and received partial funding to initiate the trail project.

As part of the process for revising the resource management plans for BLM-administered lands in western Oregon, the BLM held a series of public recreation outreach meetings from 2013 to 2015 in Medford, Roseburg, Eugene, and Salem that focused on recreation management issues. Findings from all of these meetings identified the need to improve recreational access, develop trail systems, and work with community partners. At the Medford meeting, participants specifically identified the need for non-motorized trail development in the region.

The new trail segments would provide additional loop and viewpoint opportunities for non-motorized trail users and direct non-motorized trail users away from motorized users, roads, and target shooting areas in the area of Anderson Butte. Completion of Phase 1 of the Jack-Ash Trail would be an important first step in the eventual implementation of the approximately 36 mile Jack-Ash route connecting trails near Jacksonville, Oregon to trails near Ashland, Oregon and to the Pacific Crest Trail west of Mount Ashland along Wagner Gap Road. Ultimately the trail would connect to trails near Grants Pass as well via the connection with the proposed Applegate Ridge Trail near Sterling Creek Road. Completing the Phase 1 route would also result in many new options for other short and long-distance loops using existing BLM roads on Anderson Butte.

The proposed Jack-Ash trail system would be located and constructed to create sustainable non-motorized trails that are low maintenance, fun to use, and that help manage risk, environmental impact, and user conflict.

1.5 SCOPING AND ISSUES

1.5.1 Scoping

Scoping is used to encourage public involvement in proposed BLM projects. The BLM conducted scoping to identify the desires, expectations, and concerns of interested and affected publics regarding the proposed used of available resources in the Jack-Ash Trail Project.

The BLM began public outreach for this project on December 22, 2014 by mailing a scoping flyer to 31 individuals, adjacent landowners, businesses, other government agencies, and organizations that might be interested in or affected by the Proposed Action. The purpose of the flyer was to encourage public

participation in the development of the project. The letter requested comments, issues, or concerns regarding this project that might help in its development.

Ten individuals or groups provided written comments during the scoping period. All received comments supported the project, with two expressing stipulated support if OHV use is not adversely affected. Nearly all of the commenters expressed concerns for user safety and quality of experience pertaining to current illegal trash dumping and unsafe target shooting. Some comments expressed concern that unauthorized motorcycle use on the non-motorized trails would damage trails and user experience.

1.5.2 Issues Identified for Detailed Analysis

All scoping comments received from the public and the BLM interdisciplinary team (IDT) were considered in developing the key issues for detailed analysis. Key issues are points of dispute or contention, and areas of concern or uncertainty. The key issues represent those issues that the decision maker needs to consider in selecting an alternative, and drive the National Environmental Policy Act (NEPA) analysis. Guided by the appropriate management plans, the IDT developed Project Design Features to address the key issues identified during scoping. These key issues provided the focus of this EA in Chapter 3. A brief description of the key issues identified for this project are:

Northern Spotted Owl

Issue: How would the proposed trail potentially affect the northern spotted owl?

Recreation

Issue: How would the proposed trail affect recreation?

1.5.3 Issues Considered but Not Analyzed in Detail

The following issues were also raised by the public or BLM during scoping for this project. They have been considered but eliminated from detailed analysis in Chapter 3 since protection of these resources are incorporated into the project's design. Section 3.8 of the EA summarizes the effects to resources that do not meaningfully differentiate between the No Action and Proposed Action alternatives. Resource-specific appendices are included in this EA to more fully describe how this conclusion was reached.

Issue: Would the proposed trail impact cultural artifacts or botanically-sensitive areas?

Cultural surveys were completed in August 2015 for areas proposed for new ground disturbance for the Jack-Ash Trail Project. No cultural resources were located during the most recent survey. No significant cultural resources are within the Area of Potential Effect (APE). No historic properties have been located within the APE. If any objects or sites of cultural value on federal lands are found activities would be suspended. The project may be redesigned to avoid and protect the cultural resource values present, or evaluation and mitigation procedures would be implemented based on recommendations from the Resource Area archaeologist and concurrence by the Ashland Field Manager and State Historic Preservation Office.

The proposed trail construction corridors and parking areas have been surveyed for Special Status plant and noxious weed species. Since no Special Status plant species were found in close proximity to the proposed activity areas, the project would have no adverse effects to managed plant species. State-listed (Oregon Department of Agriculture [ODA] 2016) noxious weeds in or adjacent to ground-disturbing activities for the project would be treated prior to implementation and in subsequent years. Treatment of weeds and application of Project Design Features, such as washing equipment and seeding highly

disturbed areas, would limit the project's contribution of noxious weed spread to be indistinguishable from the No Action Alternative.

Issue: How would the proposed trail potentially affect wildlife?

Effects to terrestrial Special Status species would be limited to the northern spotted owl (threatened), which are analyzed in Section 3.6 of this EA. No other terrestrial Special Status species are expected to be affected as the project would not occur in their habitat, the species is not present in the Analysis Area, or Project Design Features would protect reproductive or rendezvous sites.

Issue: *Would the proposed trail limit use of the existing class III motorcycle trails in the area?*

Issue: *How would the BLM prevent motorcycles from being used on the proposed non-motorized trail? Would there be a barrier?*

Issue: *How would the high OHV use on Anderson Butte be addressed so that it does not affect the recreational experience of hikers on the proposed trail?*

As a part of the proposed project, the BLM would use various methods to inhibit motorized vehicles on the non-motorized portions of the trail including where the trail would intersect a road or where vehicle trespass is evident. Such methods include blocking areas with boulders and large woody debris, width restrictors, and pass-through gates at trailheads for foot traffic, bikes, and horses.

Additionally, potential conflicts between non-motorized and other trail users in the vicinity of Anderson Butte would be minimized by providing non-motorized users with the proposed new trail segments, thus separating conflicting uses in areas of narrow trails. This would improve the recreation experience for all users.

Issue: How would the BLM address illegal dumping at landings and parking areas along Anderson Butte Road?

Issue: *How would the BLM address safety concerns for hikers regarding target shooting and Tannerite explosions within the range of the trail?*

Trash dumping and recreational target shooting would be addressed by increasing law enforcement and maintenance patrols in an area. Year-round patrols, especially during anticipated high-use seasons of spring and fall, would be initiated by both volunteers and BLM staff. The cooperative law enforcement effort between the BLM and the Jackson County Sheriff's Office would also be used to monitor use and address problems. Signs would be posted in areas of trailheads and patrols would help with this enforcement. Concrete barriers would be installed where conflicts with target shooting and explosives are within range of Phase 1 of the trail. The BLM will also continue its education efforts regarding responsible shooting.

1.6 DECISION FACTORS

In choosing the alternative that best meets the purpose of and need for this project, the BLM will consider the extent to which each alternative would:

- provide recreation opportunities that contribute to meeting projected recreation demand within the Project Area,
- enhance recreation opportunities provided by existing and proposed watchable wildlife and wildflower areas and national back country byways,

- manage OHV use on BLM-administered land to protect natural resources, provide visitor safety, and minimize conflicts among various users,
- provide recreation opportunities that would benefit local community economic strategies consistent with BLM land use objectives,
- consider adjacent landowners, and
- minimize impacts to federally listed and proposed species and their habitats.

1.7 LAND USE CONFORMANCE AND LEGAL REQUIREMENTS

1.7.1 Conformance with Land Use Plans

This project has been reviewed and found to be in conformance with and tiered to the *1995 Medford District Record of Decision and Resource Management Plan* (USDI 1995a). The 1995 RMP incorporated the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl* (USDA and USDI 1994).

The Jack-Ash Trail Project is consistent with the Medford District Resource Management Plan as amended by the 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (USDI 2001); the *BLM Vegetation Treatments Using Herbicides Final Programmatic EIS Record of Decision* (USDI 2007); *Record of Decision (BLM): Vegetation Treatments Using Herbicides on BLM Lands in Oregon* (USDI 2010a); *Medford District Integrated Weed Management Plan Environmental Assessment* (USDI 1998) and tiered to the *Northwest Area Noxious Weed Control Program* (EIS, USDI 1985). This project utilizes the December 2003 Survey and Manage species list. This list incorporates species changes and removals made as a result of the *2001, 2002, and 2003 Annual Species Reviews* (ASRs) with the exception of the red tree vole (*Arborimus longicaudus*).

1.7.2 Consultation

Native American Tribal Consultation

An invitation to consult was sent to local federally recognized Native American Tribes on December 22, 2014. Further consultation in the form of meetings, phone calls, and emails did not identify any concerns with the proposed activities.

State Historic Preservation Office

In accordance with the National Historic Preservation Act of 1966, as amended, and the guidance for managing cultural resources on lands administered by the BLM under the 2015 State Protocol (USDI 2015), a literature review and a cultural resource survey were conducted for the Jack-Ash Trail Project Area. No significant cultural resources are within the APE. No historic properties have been located within the APE. Documentation of this finding shall be reported to the Oregon State Historic Preservation Office as outlined in Section VI.H. of the 2015 State Protocol (USDI 2015).

U.S. Fish and Wildlife Service

Formal consultation with the U.S. Fish and Wildlife Service (USFWS) was initiated in April 2016 with the Medford BLM Nedsbar Forest Management Project and Jack-Ash Trail Construction Biological Assessment (BA) (Nedsbar BA; USDI 2016). This consultation is required to assess effects to northern spotted owls as a species listed as threatened under the Endangered Species Act (ESA). The decision for this project will comply with the terms and conditions of the Biological Opinion from USFWS. If the

fisher (currently proposed for listing as threatened under ESA) becomes listed, conferencing may be required with USFWS, and would be completed in a timely manner.

National Oceanic and Atmospheric Administration (NOAA)
Consultation for the Endangered Species Act with NOAA is not needed as the Proposed Action would not affect listed species or their habitat. No consultation is needed under the Magnuson-Stevens Fishery Conservation and Management Act as there is no adverse effect to Essential Fish Habitat for coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha)* within the Rogue Basin.

1.7.3 Special Status Species

The Jack-Ash Trail Project is consistent with BLM Manual 6840 (USDI 2008), the purpose of which is to provide policy and guidance for the conservation of BLM Special Status Species and the ecosystems upon which they depend on BLM-administered lands. BLM Special Status Species include those species listed or proposed for listing under the ESA, as well as those designated as Bureau Sensitive by the State Director. The objectives of the BLM Special Status policy are to:

- conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species; and
- initiate proactive conservation[1] measures that reduce, or eliminate, threats to Bureau Sensitive species to minimize the likelihood of and need for listing of these species under the ESA (USDI 2008, Section .02).

1.7.4 Statutes and Regulations

The Proposed Action is designed in conformance with the direction given for the management of public lands in the Medford District and the following:

- **Oregon and California (O&C) Lands Act of 1937**. Requires the BLM to manage O&C lands for permanent forest production. Timber shall be sold, cut, and removed in accordance with sustained-yield principles for the purpose of providing for a permanent source of timber supply, protecting watersheds, regulating stream flow, contributing to the economic stability of local communities and industries, and providing recreational facilities.
- **Federal Land Policy and Management Act of 1976**. Defines the BLM's organization and provides the basic policy guidance for the BLM's management of public lands.
- **NEPA of 1969**. Requires the preparation of environmental impact statements for major federal actions which may have a significant effect on the environment.
- **National Historic Preservation Act of 1966**, as amended. Section 106 directs all federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the National Register of Historic Places, and Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties.
- **Protocol for Managing Cultural Resources on Lands Administered By the Bureau of Land Management in Oregon (USDI 2015).** Implements the Bureau of Land Management's national cultural resources Programmatic Agreement in Oregon.

[1] Conservation: as applied to Bureau Sensitive species, is the use of programs, plans, and management practices to reduce or eliminate threats affecting the status of the species, or improve the condition of the species' habitat on BLM-administered lands (USDI 2008, Glossary p. 2).

1.8 RELEVANT ASSESSMENTS AND PLANS

1.8.1 Little Applegate Watershed Analysis (WA) (USDI 1995b)

Watershed analysis is a procedure used to characterize conditions, processes and functions related to human, aquatic, riparian and terrestrial features within a watershed. Analysis teams of resource specialists identify and describe ecological processes of greatest concern in a particular "fifth field" watershed (also referred to as 5th-Field Hydrologic Unit Codes, or HUC5s), and recommend restoration activities and conditions under which other management activities should occur. Watershed Analysis is not a decision making process. The resulting WA is not a decision document under NEPA, and there is no action that is proposed for implementation with the completion of the analysis. Rather, Watershed Analyses provides information and non-binding recommendations for agencies to establish the context for subsequent planning, project development, regulatory compliance and agency decisions (Regional Ecosystem Office 1995, p. 1).

The Phase 1 Jack-Ash Trail Project Area falls within the Little Applegate Watershed Analysis Area. The Watershed Analysis focused on the use of existing information available at the time the analysis was conducted, and provides baseline information. Additional information, determined to be necessary for completing an analysis of the Jack-Ash Trail Project, has been collected and is considered, along with existing information provided by the 1995 *Little Applegate River Watershed Analysis.* Management Objectives and Recommendations provided by the Watershed Analysis were considered and addressed as they applied to the project proposal.

The Little Applegate Watershed Analysis describes the condition of the lands affected in the Project Area resulting from a multitude of natural processes and human actions that have taken place over many decades. The current conditions of the lands affected by the Proposed Action are described in Chapter 3 under the Affected Environment sections specific to each resource. The current conditions described in the Affected Environment reflect the natural processes and human actions that have taken place over many decades within the Watershed. This EA will address the effects of the Phase 1 Jack-Ash Trail Project by analyzing the potential for cumulative impacts that may result when adding the incremental effects of the proposed action together with the effects of past, current and reasonably foreseeable future actions.

1.8.2 U.S. Department of Interior, Bureau of Land Management, Western Oregon Districts, Transportation Management Plan (1996, updated 2002 and 2010; USDI 2010b)

This transportation management plan is not a decision document; rather, it provides guidance for implementing applicable decisions of the 1995 Medford District Resource Management Plan (which incorporated the Northwest Forest Plan).

1.8.3 Southwest Oregon Fire Management Plan

The Southwest Oregon Fire Management Plan (FMP) provides Southwest Oregon with an integrated concept in coordinated wildland fire planning and protection among federal, state, local government entities, and citizen initiatives.

The FMP introduces fire management concepts addressing fire management activities in relation to resource objectives stated in the current land and resource plans (parent documents) of the federal agencies, the laws and statutes that guide the state agencies and private protective associations, and serve as a vehicle for local agencies and cooperators to more fully coordinate their participation in relation to those activities.

1.9 DECISIONS TO BE MADE

The following decisions will be made through this analysis:

- To determine if a Supplemental EIS (SEIS) should be prepared based on whether the proposed action would result in significant impacts to the human environment not already analyzed in the EIS prepared for the Medford District ROD/RMP and its amendments. If there are any such additional impacts that are significant, we will determine whether the project proposal could be modified to mitigate the impacts so an SEIS would not be necessary. If we determine there is no need to prepare an SEIS, we will document this determination in a Finding of No Significant Impact.
- To authorize or to not authorize the proposed trail and trailhead project on BLM-administered lands within the Phase 1 Project Area.

View along proposed trail route. Picture taken from the base of Anderson Butte Lookout, facing southwest.

CHAPTER 2.0 ALTERNATIVES

2.1 INTRODUCTION

This chapter provides a description of the Proposed Action as well as Project Design Features that serve as the basis for resource protection during project implementation. The interdisciplinary team for Phase 1 of the Jack-Ash Trail Project developed one action alternative (Alternative 2) for meeting the purpose and need of the project which responds to the issues identified during scoping. The No Action Alternative (Alternative 1) is provided for a baseline comparison.

Phase 1 of the proposed Jack-Ash Trail Project is primarily located on existing BLM roads with 4.7 miles of trail construction to connect the system with the popular and well-used Sterling Mine Ditch Trail (SMDT) system at both ends via the Little Applegate Trailhead on the south end, and the Grub Gulch trailhead on the north end. The total distance for Phase 1 would then create a 36-mile trail system. The new trail segments would provide additional loop and viewpoint opportunities for non-motorized trail users and direct non-motorized trail users away from motorized users, roads, and target shooting areas in the area of Anderson Butte. The sections of the Jack-Ash Trail that follow the existing BLM roads would remain open for both motorized and non-motorized users (Maps 2 and 3).

Background

The BLM Medford District removed vegetation for the SMDT in the late 1970s. Over the years, encroached vegetation has blocked the trail from public use due to the lack of maintenance except for the 5-mile loop from Tunnel Ridge to Bear Gulch. In 2009, Siskiyou Upland Trails Association (SUTA) and the local community brought the unusable condition of the trail to the forefront. Working in concert with the Medford District BLM, SUTA applied for grant funding to re-open the SMDT using trail crews and volunteers for brush clearing, tread repair, and maintenance. On June 4, 2011, National Trails Day, the re-opening of the SMDT was celebrated with a large public gathering at the trail, and officiated by BLM officials and SUTA members.

Under the SMDT: Grub Gulch Connection and Armstrong Gulch Bypass Environmental Assessment and Decision Record (DOI-BLM-OR-M060-2013-0006-EA; USDI 2013), SUTA and BLM completed two new segments of trail in the SMDT system at Armstrong Gulch and Grub Gulch, thus reducing private landowner concerns, providing more public access to the SMDT, and creating long-distance loop options for trail users. These segments of recently constructed trail have become popular with users of the SMDT in the past two years.

2.2 ALTERNATIVES ANALYZED IN DETAIL

2.2.1 Alternative 1 – No Action

Under the No Action Alternative the BLM would not construct new trails at this time in the Project Area. The existing SMDT system would still connect with existing roads at both ends, but there would be no non-motorized trail option for trail users in the area of Anderson Butte and its west-facing slopes (Map 2) nor other amenities such as signs, kiosks, or improved parking areas.

2.2.2 Alternative 2 – Proposed Action

Proposed Jack-Ash Trail Route, Phase 1 (see Map 2 on p. 8)

- Route to start at the southeast end on Anderson Creek Road near the Little Applegate Trailhead of the Sterling Mine Ditch Trail (SMDT) in Section 25, T. 39 S., R. 2 W. Trail route to follow Anderson Creek Road (BLM Road # 38-2-24).
- **Segment #1** – 2.7 miles of new trail construction along the Anderson Butte ridge system from BLM Road # 38-2-24 to just below the top of Anderson Butte. Tie into old road system (BLM Road # 38-2-12.2) and continue north to connect with Upper Grub Gulch Road (BLM Road # 39-2-2). Trail would continue north along Armstrong-Deming Road (BLM Road # 39-2-8) to just south of the junction at a landing in the southwest quarter of Section 35, T. 39 S., R. 2 W.
- **Segment #2** – 1.7 miles of new trail construction westerly across the slope and switchback easterly and westerly to connect with BLM Road # 39-2-26 in Section 3, T. 39 S., R. 2 W.
- **Segment #3** – 0.3 miles of new trail construction along the Grub Gulch A Spur (BLM Road # 39-2-3.0) to the western BLM boundary.

Proposed trail construction location for Segment#1, looking north.

Trail Design and Construction

Phase 1 would be constructed using hand tools (such as shovels and chainsaws to cut brush). No heavy equipment would be used. Trail construction would be completed by BLM staff, contractors, and volunteers. The trail design would be guided by the U.S. Forest Service Trail Construction and Maintenance Handbook, and would adhere to BLM Trails Handbook 9114.

The trail bed would be built to both full and partial bench construction standards whenever possible with occasional partial bench construction in switchbacks and very rocky ground. The maximum width of ground disturbance would be 10 feet, which accounts for the approximately 3 foot trail width, potential soil disturbance outside of trail surface (mainly on trail locations on a steep side slope where the cut slope would need to be wider), and the distance of vegetation thinning and trimming beyond the trail. The trails would be laid out for an overall grade of less than 8 percent. Trail design would minimize vegetation removal through route location. Most of the vegetation removed and trimmed would be mixed fir/chaparral vegetation. See Appendix A for additional specifications.

The trail would be generally out-sloped to 3 percent where possible to allow water to shed off the trail. The trail would be constructed with a grade reversal or rolling dip installed both immediately above and below the switchbacks to prevent water from eroding the trail. The trail would be designed to maintain a consistent flow by providing frequent grade reversals, rolling dips, and winding turns, which also serve to shed water off the trail. The trail would be corralled with rocks, logs, or constructed materials to prevent users from cutting corners or creating unauthorized trails where the trail changes directions on steep slopes. Retaining walls and crib walls would be constructed where necessary to stabilize the trail, particularly on turns and on approaches to drainage crossings. Drainage crossings would be armored with large rocks. Rocks will be sourced in the area that armoring will need to occur, or will be transported via wheelbarrows or motorized trail as needed.

Stumps in and immediately adjacent to the proposed trail bed would be removed and placed outside the proposed trail corridor. Brush and tree branches would be thinned and trimmed back about 3 feet from each side of the trail edge. Trail routing would avoid the removal of trees over 12 inches in diameter. Branches extending over the trail corridor would be cut no higher than 10 feet above the trail surface. Dead trees (snags) may need to be felled for safety reasons. Cut vegetative material would be lopped and scattered or hand-piled and burned to prevent an increase in fire hazard. Material greater than 6 inches in diameter would not be placed in handpiles, but would be lopped and scattered.

Constructing 4.7 miles of trails for this project would connect the Jack-Ash Trail to the Sterling Mine Ditch Trail, thus creating an overall 36-mile loop trail (Maps 2 and 3). The route and this loop could be accessed from numerous existing SMDT trailheads and several wide turnouts/parking areas along Anderson Butte Road. The area is easily accessed from the Medford and Jacksonville areas via Anderson Butte and Wagner Creek roads. Access from the Applegate Valley is via Little Applegate Road and Sterling Creek Road with existing SMDT trailheads at Deming Creek, Armstrong Creek, and several along Little Applegate Road.

Proposed construction route for the Jack-Ash Trail. Location below Deming Road (BLM Road # 38-2-8) towards BLM Road # 38-2-26.

Trail Management, Maintenance, and Use

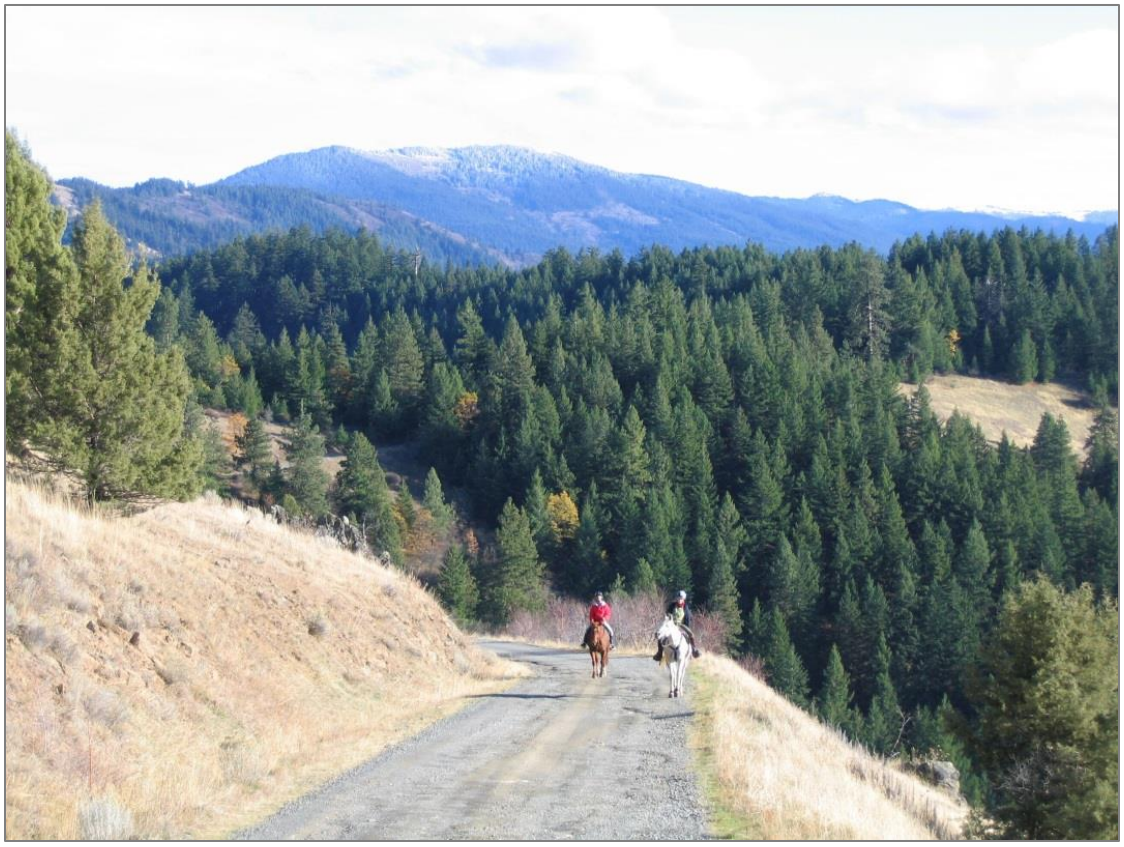
All trail users would be urged to stay on the trails. Proper trail design along with the steep terrain and thick poison oak understory would discourage off-trail travel. The trail would be open year-round for non-motorized uses; although, trail use would be discouraged by signs posted at trailheads in abnormally wet conditions. It is expected the trail would be more heavily used during the spring and fall months when temperatures are more moderate, in early mornings and late evenings during the hot summer months, and in drier periods between storms during the winter.

The BLM would use an existing partnership with SUTA, local mountain bike enthusiasts, clubs, volunteers, and user groups to help monitor and maintain the trail for proper drainage and unauthorized uses, and to ensure trail users are staying on the trail and not creating shortcuts. If impacts begin to occur during the wet season, a seasonal closure would be considered to protect soil and vegetation. BLM would use various methods to inhibit motorized vehicles on the non-motorized portions of the trail including where the trail would intersect a road or where vehicle trespass is evident. Such methods include blocking areas with boulders and large woody debris, width restrictors, and pass-through gates at trailheads for foot traffic, bikes, and horses.

Monitoring would also help determine trail maintenance needs. Depending on funding, groups such as the SUTA may also be used for trail maintenance that would include brushing, cutting and removing fallen trees, and tread repair. Cut vegetation material would be lopped and scattered or hand-piled and burned to prevent an increase in fire hazard. Some maintenance activities may occasionally require use of all-terrain vehicles for ease in hauling materials on the trail.

BLM Rangers and Jackson County Sheriff's Office Deputies would monitor the trailheads and trails to manage unauthorized activities such as motorized OHV use, trash dumping, and target shooting. Off-highway vehicle restrictions and private land boundaries would be posted at appropriate locations, and fencing may be installed in areas to keep motorized vehicles off the trail and private lands. Concrete barriers would be installed where conflicts with target shooting and explosives are within range of Phase 1 of the trail. These tools may be implemented through application of the Recreation Site and Trail Maintenance Categorical Exclusion and Decision Record, Calendar Year 2014 to 2019 (USDI 2014a).

Planned and future development would focus on minimizing private property trespass issues. Private land adjacent to the trail would be signed as such. Expansion of the trail system beyond Phase 1 would require additional signage identifying private land boundaries and "no trespassing" onto those lands. This and other BLM roads and lands may be used in future trail expansions pending further interest from user groups, environmental analysis, and funding.



Proposed trail route utilizing the existing Anderson Butte Road near Section Line Gap.

Trailheads and Parking Areas

Four existing graveled parking areas would be designated as trailheads. Two would be located along the Anderson Butte Road. One is a large area located at the junction of Anderson Butte Road and Armstrong-Deming Road (SE SW 1/4 Section 35, T. 38 S., R. 2 W.); a second is an area located near the quarry site on Anderson Butte Road (near the center of Section 12, T. 39 S., R. 2 W.); a third trailhead is located in an area at the junction of Armstrong-Deming Road with Upper Grub Gulch dirt road (near the center of Section 2, T. 39 S., R. 2 W.); and a fourth trailhead is located in an area along Anderson Creek Road (near the southern boundary of Section 17, T. 39 S., R. 1 W.).

Trailhead areas are already graveled and hardened by road construction and use; some minor smoothing and additional gravel may be added if deemed necessary to minimize erosion and resource damage. These proposed activities would not expand the footprint of the existing parking areas. Hazardous trees may need to be felled for safety reasons. Cut vegetative material would be lopped and scattered, hand-piled and burned, chipped, or made available for firewood. Kiosks would be constructed and installed at these new trailheads to provide maps and trail information to users. Similar kiosks have been installed and are maintained by SUTA on the SMDT system under guidance of BLM.

Future Trail Phases

Future addition of some segments of new non-motorized trail on BLM-administered lands would connect with existing roads and through private property (easements to be obtained at the time of the project) to continue the Jack-Ash Trail north from Griffin Lane and connect with the existing Jacksonville Woodlands and East Applegate Ridge Trail; and to continue south from Section Line Gap along the crest to connect at Wagner Gap with the existing Ashland Watershed Trails system, and along existing BLM or U.S. Forest Service roads to connect with the PCNST near Mt. Ashland.

The potential future extensions would primarily utilize existing roads, historic fire lookout trails, and some segments of new trail construction. Public easements would be required anywhere the trail crosses private lands.

2.3 PROJECT DESIGN FEATURES (PDFs)

Trail construction

- Trail construction would be suspended when erosion and runoff would deliver sediment to water bodies.
- Seeps, springs, and wet areas would be avoided. Trail construction would occur on the uphill side of such features.
- Dry draw and channel crossings would be rocked, or stepping stones would be placed at strategic locations to reduce the amount of fine sediment entering channels.
- Trail grade would be less than 8 percent and rolling, if possible, and tread would be out-sloped 3 to 5 percent to promote drainage, minimize erosion, and to reduce trail maintenance needs.
- Switchback placement would be designed to prevent erosion down and across trails.
- No trees over 12 inches diameter at breast height would be cut during trail construction and all trees would be directionally felled to avoid damaging existing vegetation or other desirable features.
- Private property lines would be signed where needed.
- Roads and trailheads used for access to the trail would not be widened beyond the current road prism.
- If, during project implementation, the contractor/workers encounter or become aware of any objects or sites of cultural value on federal lands, such as historical or pre-historical ruins, graves, grave markers, or artifacts, the contractor shall immediately suspend all operations in the vicinity of the cultural feature and notify the Contracting Officer's Representative. The project may be redesigned to avoid and protect the cultural resource values present, or evaluation and mitigation procedures would be implemented based on recommendations from the Resource Area archaeologist and concurrence by the Ashland Field Manager and State Historic Preservation Office.

Treatment of cut vegetation

- Handpiles would be burned, chipped, or otherwise removed typically within 18 months of trail construction completion.
- Firelines would be constructed by hand.
- Handpiles would not be placed adjacent to or within 15 feet of leave trees to minimize potential scorch and mortality.
- Piles would be covered with plastic large enough to ensure a dry ignition spot (generally 5 x 5 feet but not to exceed 10 x 10 feet to cover 80 percent of the pile).
- Slash piles would not be allowed on trails, roadways, turnouts, shoulders, or on the cut bank.

- Piles would be burned in the fall to spring season after one or more inches of precipitation have occurred. Patrol and mop-up of burning piles would occur when needed to prevent treated areas from re-burning or becoming an escaped fire.

In addition to the above, to minimize the spread of invasive plants

- All project tools and equipment (e.g., shoes, shovels, rakes, pulaskis, trail machine, etc.) would be washed and cleaned of soil and vegetative material before entering the Project Area and sites currently free of weed populations and before leaving known weed sites.
- Gravel used in the parking area and any other imported material used in the area is to be weed free.
- Areas of highly disturbed soil outside of the trail prism would be seeded with native grasses and/or an approved seed mix if recommended after review by the project botanist.
- Noxious weeds along proposed and existing trails and roads in the Project Area would be inventoried and treated by BLM. Inventories may occur the first three years after completion of trail construction and then periodically thereafter, depending on available funding and workforce.
- Chemical and/or manual treatments of known existing noxious weed populations would occur prior to the start of project activity, depending on available funding and workforce.
- Subsequent chemical and/or manual treatments, pending inventory results, would be scheduled by priority and occur based on the potential of the weed population to cause economic or environmental harm or harm to human health. These weed treatments would occur depending on available funding and workforce.

To minimize impact to wildlife

- Any raptor nests located before or during trail construction would be protected. No work would occur within 200 feet of such a nest until the young have left the nest area.
- If dens for fisher are discovered in the vicinity of the trail construction, restrictions may be placed on activities to avoid disturbance to these species.

To minimize impact to botanical resources

- Bureau Special Status and Survey and Manage plant sites would be protected as prescribed by the project botanist by one or a combination of the following protection measures: no-treatment buffers or seasonal restrictions.
- The Contract Administrator would work with the project botanist if any new areas identified for operational needs outside previously surveyed areas.
- Trees would be directionally felled away from plant protection buffers.

2.4 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN FURTHER DETAIL

Initially, the location of Segment #1 was considered to run concurrent with an existing closed dirt road that runs north from the proposed trailhead at a quarry and along the east-side ridge of Anderson Butte in the SW ¼ of Section 2, T. 39 S., R. 2 W. Segment #1 would then have turned back to the north into the dense managed forest of upper Grub Gulch. This alternative was not considered further in consideration of safety and to minimize any potential conflict between motorized and non-motorized users as a portion of the dirt road is popular with motorized users.

The last 70 feet of Segment #2 was considered for connecting into the Hidden Creek Trail off of BLM Road # 38-2-26 before it would continue west along BLM Road # 39-2-3. To minimize potential disturbance and habitat modification to the northern spotted owl (*Strix occidentalis*) habitat, the proposal for this portion of Segment #2 was re-routed outside the nest patch for this species (Section 2.2.2 and Map 2, p. 8).

Lupine in bloom along a portion of the proposed trail route.

CHAPTER 3.0 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the present conditions of each affected resource, followed by a comparison of the estimated environmental effects of implementing the No Action Alternative and the Proposed Action. The Environmental Effects portion of this chapter provides the analytical basis for the comparisons of the alternatives (40 Code of Federal Regulations [CFR] § 1502.16) and the reasonably foreseeable environmental consequences to resources anticipated to be affected by the Proposed Action. The Affected Environment portion of this chapter describes the current conditions in the Jack-Ash Trail Project Analysis Areas. The analysis of the direct, indirect, and cumulative effects is organized by resource and the Analysis Areas for actions proposed under this EA vary by resource. Effects from this project, whether positive or negative, are anticipated to be limited to recreation and the northern spotted owl.

3.2 PROJECT AREA AND ANALYSIS AREA

The terms **Project Area** and **Analysis Areas** are used throughout this chapter. The following defines each term:

Project Area is used to describe where action is proposed, such as trail construction, the associated vegetation removal along each side of new trail segments, and actions at the proposed designated trailheads and parking areas.

Analysis Areas vary by resource and include those areas that could potentially be affected by the Proposed Action. In some cases the Analysis Area is confined to the Project Area and in others the Analysis Area extends beyond the Project Area.

3.3 PHYSICAL SETTING

Phase 1 of the Jack-Ash Trail Project Area includes the public lands and resources administered by the Ashland Resource Area of the Medford District BLM. The new trail segments would be located on the upper and mid-slopes of the Lower Little Applegate River sub-watershed and the upper slopes of the Middle Little Applegate River sub-watershed. The project is located on the upper slopes of Anderson Butte and Grub Gulch drainage, about 7 miles south of the city of Jacksonville, and about 9 miles southwest of the city of Medford. Elevation ranges from about 2,800 feet near Sterling Creek to about 4,800 near the top of Anderson Butte.

The vegetation in the Project Area consists of managed mixed conifer stands (Ponderosa pine [*Pinus ponderosa*], Douglas-fir [*Pseudotsuga menziesii*]) on the south-facing slopes of Grub Gulch and west-facing slopes of Anderson Butte, to areas of moderately dense shrub stands and open grasslands with scattered junipers and rock outcrops on the west-facing upper slopes of Anderson Butte. The proposed trail route would pass through a stand of mature pine and mixed hardwoods along the existing BLM Road # 38-2-26 in the area of the existing Hidden Creek Trail.

The landscape in the area of Phase 1 Jack-Ash Trail construction segments is composed primarily of steep mountain side slopes ranging from about 30 percent to over 65 percent. Geology is mainly metamorphic rock and soils are gravelly and well-drained and tend to be moderately deep (20 to 40 inches) with some areas of shallow soils and rock outcrop.

The climate is Mediterranean, with cool wet winters and warm to hot, dry summers. The areas on the upper slopes of Anderson Butte typically receive light to moderate snowfall during winter storms. Snow melts rapidly as weather warms and the area does not have snow year-around.

3.4 LAND USE ALLOCATIONS

3.4.1 Adaptive Management Area (AMA)

The project is designed to conform to the 1995 ROD/RMP, its management direction, and objectives for land use allocations. The entire proposed Phase 1 route passes through lands identified as part of the *Applegate Adaptive Management Area* in the Land Use Allocations map.

The 1995 ROD/RMP describes objectives for the Applegate AMA (USDI 1995a, p. 37), which includes providing opportunities to develop innovative management approaches amongst land management and regulatory agencies, other government entities, non-governmental organizations, and local groups.

3.4.2 Riparian Reserves

Phase 1 of the proposed Jack-Ash Trail Project is outside any designated Riparian Reserves, or is located on existing roads that cross Riparian Reserves (Map 2).

Riparian Reserves are described in the 1995 ROD/RMP. They are areas along streams, wetlands, ponds, lakes, and unstable or potentially unstable areas that are managed to provide benefits to riparian-associated species. They also serve as travel and dispersal corridors for many terrestrial organisms, and provide habitat connectivity within the watershed. The widths of the reserves are determined during watershed analysis, and the boundaries may vary based on site-specific characteristics including the height of a site-potential tree. In the Lower Little Applegate 5th-field watershed (or HUC 5), Riparian Reserve widths in the areas where new trail construction would occur are 155 feet on each side of non-fish bearing intermittent and perennial streams, and 310 feet on each side of fish-bearing perennial systems (Sterling Creek and Little Applegate River).

The Aquatic Conservation Strategy (ACS) was developed to restore and maintain ecological health of watersheds and aquatic ecosystems on public lands. It includes 9 objectives, which guide BLM's management of Riparian Reserves. These objectives are examined at the site (e.g. a single pool or stream reach), HUC 7 (drainage) and HUC 5 (large watershed) scale. Proposed projects must be evaluated for their potential to impact the nine objectives at each spatial scale.

3.4.3 Northern Spotted Owl Critical Habitat

The Jack-Ash Trail Project Area is within the 2012 U.S. Fish and Wildlife Service's designated Critical Habitat Unit (CHU) KLE 6 for the northern spotted owl. CHU identifies geographic areas that contain features essential for the conservation of the northern spotted owl and may require special management considerations. For the northern spotted owl, these features include particular forest types of sufficient area, quality, and configuration distributed across the species' range to support the needs of territorial owl pairs throughout the year, including habitat for nesting, roosting, foraging, and dispersal.

3.5 CONSIDERATION OF PAST, ONGOING, AND REASONABLY FORESEEABLE ACTIONS IN THE EFFECTS ANALYSIS

When considering cumulative effects analysis, the agency must analyze the effects in accordance with relevant guidance issued by the Council on Environmental Quality (CEQ), 43 CFR § 46.115 (Code of Federal Regulations). As the CEQ points out in guidance issued on June 24, 2005, the "environmental analysis required under NEPA is forward-looking," and review of past actions is required only "to the extent that this review informs agency decision-making regarding the proposed action." Use of

information on the effects of past action may be useful in two ways according to the CEQ guidance: for consideration of the Proposed Action's cumulative effects, and as a basis for identifying the Proposed Action's direct and indirect effects.

The CEQ stated in this guidance that "[g]enerally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions." This is because a description of the current state of the environment inherently includes the effects of past actions. The CEQ guidance specifies that the "CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions." The importance of "past actions" is to set the context for understanding the incremental effects of the Proposed Action. This context is determined by combining the current conditions with available information on the expected effects of other present and reasonably foreseeable future actions. Effects analyses completed for resources potentially affected by the Jack-Ash Trail Project describe indicators of importance along with the spatial (Analysis Area) and temporal scale of importance for determining the effects of multiple actions (past, current, and reasonably foreseeable) on affected resources. As discussed above, the current condition assessed for each affected resource inherently includes the effects of past actions.

The analysis of the effects of other present and reasonably foreseeable actions relevant to the effects of the Proposed Action is necessary. How each resource analysis uses information concerning other ongoing or reasonably foreseeable activities is, however, dependent on the geographic scale of concern and attributes considered during each resource analysis.

The following listing of activities is only presented to provide an overview of land management activities occurring within or adjacent to the Jack-Ash Trail Project Planning Area or associated Analysis Areas.

BLM Forest Management Projects

Sterling Sweeper Timber Sale (Past)
The Sterling Sweeper Sale (455 acres) is located within the Jack-Ash Trail Project Analysis Area in Sections 26, 27, 34, T. 38 S., R. 2 W. and Section 3, 9, 10, 14, T. 39 S., R. 2 W. It was analyzed in the *Sterling Sweeper Forest Management Project Environmental Assessment* (DOI-BLM-OR-M060-2012-0011-EA; USDI 2012a), revised in 2013 (DOI-BLM-OR-M060-2013-0005-REA; USDI 2013). Harvest activity was completed in 2015.

Nedsbar Forest Management Project (Foreseeable)
There are approximately 152 acres of forest management proposed for the Nedsbar Project within the Analysis Area for the Jack-Ash Trail Project. Treatments would include commercial harvest, non-commercial forest management treatments, 0.07 miles of proposed road construction, 1.13 miles of existing road decommissioning, and 2.37 miles of long-term closure in the Analysis Area of the Jack-Ash Trail Project in T. 39 S., R. 1 W., Sections 17-19 and 30; T. 39 S. R. 1 W., Sections 2-3 and 25. Small diameter slash created from harvest activities will be hand-piled and burned.

Timber Harvest on Private Lands

There are no private industry lands parallel to Phase 1 of the Jack-Ash Trail Project. There is a limited amount of forest industry land in Section 30, T 39 S., R 1 W. Under reasonably foreseeable future actions for private lands, it is assumed that private forest lands would continue to be intensively managed for timber production on approximately a 60-year rotation (USDI 1994, pp. 4-5). The actual timing of any private lands timber harvest is dependent on many factors, including valuations based on supply/demand and ownership.

3.6 NORTHERN SPOTTED OWL (THREATENED)

3.6.1 Affected Environment

Scale of Analysis

The Northern Spotted Owl (NSO) direct and indirect effects from the Proposed Action are analyzed by assessing potential changes in habitat conditions within the proposed trail construction footprint-- tread width would be 3 feet, with an additional 3 feet of vegetation trimming and thinning on either side of the trail—total width of 10 feet. The project proposes construction of approximately 4.7 miles of trail. This means the total area of the NSO Analysis Area is approximately 5.6 acres. This is the same scale of analysis used for consultation and will be referred to as the NSO Analysis Area for the Jack-Ash Trail Project Environmental Assessment.

Also considered is the potential disturbance to known NSO nest locations from trail construction including use of chainsaws. The Mandatory Restriction Distances to Avoid Disturbance to Spotted Owl Sites (Nedsbar BA 2016; USDI 2016) is 195 feet. There are no known NSO nest sites within 195 feet of the proposed new trail segments.

The Jack-Ash Trail is within seven spotted owl home ranges. Of the seven sites, one is shared with the Nedsbar Forest Management Project (0973O). Actual treatment in habitat to construct the trail is limited to three of the seven sites and is described in more detail in the effects analysis. In the other four sites, the trail passes through areas that do not serve as habitat of any kind for NSOs (e.g., grassy areas, brushfields). Only the site associated with the Nedsbar Forest Management Project has been surveyed recently, but the results were inconclusive, and the site is therefore assumed to be occupied. The remaining six sites are also assumed to be occupied.

Habitat Determination and Background

The NSO, a federally-listed threatened species, is associated with existing habitat in and adjacent to the Jack-Ash Trail Project Area. Spotted owls are closely associated with older forests for nesting, foraging, and roosting throughout most of their range (Forsman et al. 1984; Carey et al. 1990; and Solis and Gutierrez 1990). Spotted owl habitat within the NSO Analysis Area was divided into four habitat types Nesting, Roosting, Foraging (NRF), Dispersal-only, Capable, and non-Habitat (Table 1). The geology, fire history, ownership patterns, and past management practices have resulted in this current distribution of NRF, Dispersal, and non-habitat within the NSO Analysis Area and Planning Area.

On June 30, 2011, the USFWS released the *Revised Recovery Plan for the Northern Spotted Owl* for public comment (USDI Fish and Wildlife Service 2011). This Revised Recovery Plan recommends achieving recovery of the spotted owl through recovery actions, such as conserving spotted owl sites and retaining high quality habitat. The Recovery Plan is not a regulatory document; it provides guidance to bring about recovery through prescribed management actions and supplies criteria to determine when recovery has been achieved. The BLM works with the USFWS to incorporate the Recovery Goals and Actions in the Recovery Plan consistent with BLM laws and regulations.

Table 1. Northern Spotted Owl Habitat in the Jack-Ash Project NSO Analysis Area

Habitat Type	Description
Suitable Habitat: Nesting, Roosting, and Foraging (NRF)	Meets all spotted owl life requirements. Stands are generally older than 80 years, have a high canopy cover (greater than 60 percent), a multi-layered structure, and large overstory trees. Deformed, diseased, and broken-top trees, as well as large snags and down logs, are also present. Suitable habitat also includes areas with more uniform structure that may not have nesting structures, but provides roosting and foraging habitat with flying space for owls in the understory.
Dispersal Habitat-Only	Not suitable for spotted owl nesting/roosting/foraging, but has sufficient patchy cover to be used for travel between suitable stands, a minimum 40 percent canopy cover, and an average tree diameter greater than 11 inches with flying space for owls in the understory.
Capable Habitat	Forest that is currently not spotted owl habit, but can become NRF or Dispersal in the future as trees mature and canopy fills in.
Non-Suitable Habitat	Lands that do not provide habitat for spotted owl and would not develop into NRF or Dispersal in the future (open prairies, meadows, shrub lands, etc.)

The USFWS published the *Revised Critical Habitat for the Northern Spotted Owl*, which designated NSO critical habitat on federal lands, in the *Federal Register* on December 4, 2012 **(**77 FR 233:71876-72068) and became effective January 3, 2013. The Jack-Ash Trail Project Area is within designated Critical Habitat Unit (CHU) KLE 6 for the northern spotted owl.

Current Population Trends

Anthony et al. (2004) published meta-analysis of owl demographic data collected in 14 demographic study areas across the range of the northern spotted owl. Four of the study areas were in western Washington, six were in western Oregon, and four were in northwestern California. Although the agencies anticipated a decline of NSO populations under land and resource management plans during the past decade, Anthony identified greater than expected NSO population declines in Washington and northern portions of Oregon, and more stationary populations in southern Oregon and northern California. However, Anthony (2010) stated that that there is now an apparent decline in spotted owl occupancy in the Southern Cascades Study Area, while the presence of barred owls is increasing.

Eleven demographic studies have been established to represent owl status across the range of the NSO (Forsman et al. 2011). Owl sites and productivity are annually monitored in these areas to:

- Assess changes in population trend and demographic performance of spotted owls on federally-administered forest lands within the range of the owl, and
- Assess the changes in the amount and distribution of NRF habitat and Dispersal habitat for spotted owls on federally administered forest lands.

Metadata analysis evaluates population statistics of the owls in the demographic study areas. The most recent metadata analysis that will be published in 2016, found that fecundity, the number of female young produced per adult female, is declining. Dugger et al. (2016) concluded that fecundity, apparent survival, and/or populations were declining on most study areas, and that increasing numbers of barred owls and loss of habitat were partly responsible for these declines. The 2016 metadata analysis found these declines are occurring in more study areas than indicated in the last 2011 metadata analysis (Forsman 2011). The 2016 data indicate that competition with barred owls may now be the primary cause of northern spotted owl population declines across their range.

The Medford BLM does not conduct surveys specifically for barred owls, so surveys were not conducted in the Jack-Ash Trail Project Area. While the BLM did not specifically survey for barred owls, a study in the Oregon Coast range suggests that over the course of a season, spotted owl surveys to protocol (greater than 3 visits) allow approximately 85 percent of the barred owls present in the area to be detected (Wiens 2012). Some of the Project Area has been surveyed for spotted owls since 2014. No barred owls were detected during these spotted owl surveys.

The home range circle is an approximation of the median home range size used by spotted owls. The Medford District uses the median home range estimated for southwestern Oregon of 3,400 acres or a circle with a radius of 1.2 miles in the West Cascades province (Thomas et al. 1990, Courtney et al. 2004). The home range circle approach has been used to show that stand age/structure, patch size, and configuration within the circle influences the likelihood of occupancy. Therefore, the home range circle is a useful analytical scale for the purpose of quantifying habitat and the impact to owl sites from proposed habitat modification. There are no historic spotted owl sites located within the Jack-Ash Trail Project NSO Analysis Area, however, seven historic NSO home ranges overlap this Analysis Area.

Northern Spotted Owl Prey Base

Dusky-footed woodrats, the primary prey species for spotted owls in southwest Oregon, are found in high densities in early seral or edge habitat (Sakai and Noon 1993). Down wood is an important habitat feature for these major prey species in southwest Oregon. Dusky-footed woodrats build stick nests, sometimes incorporating logs as part of the structure. Northern flying squirrels are another major source of owl prey in southwest Oregon (Forsman 2004). Flying squirrels need cavities in trees or other suitable protected spaces for shelter and nest sites. The bulk of their diet consists of fungi and lichens.

3.6.2 Environmental Consequences

3.6.2.1 Alternative 1 – No Action

Under the No Action Alternative, the Jack-Ash Trail Project would not be implemented. The proposed trail construction and designation of four parking areas as trailheads would not occur and there would be no direct or indirect effects to northern spotted owls from this project. Spotted owls would still continue to use the Project Area for nesting, roosting, foraging, and dispersal habitat.

3.6.2.2 Alternative 2 – Proposed Action

The scope of the Jack-Ash Trail Project is very small. A total of one acre of NRF habitat and one acre of Dispersal habitat would be treated and maintained from the proposed trail construction for this project. The trail construction would not remove trees over 12 inches in diameter. Branches extending over the trail corridor would be cut no higher than 10 feet above the trail surface. The maximum width of ground disturbance would be 10 feet wide, which accounts for the approximately 3 foot trail width, potential soil disturbance outside of trail surface (mainly on trail locations on a steep side slope where the cut slope would need to be wider), and the distance of vegetation thinning and trimming beyond the trail. Trail design would minimize vegetation removal through route location. Most of the vegetation removed and trimmed would be mixed fir/chaparral vegetation. Habitat alteration would be minimal and on a very small scale (trail width). Trail use for the 4.7 miles of trail construction would be non-motorized and use of existing roads would not change from the existing use open to motorized and non-motorized traffic. Therefore Phase 1 of the Jack-Ash Trail Project would not measurably contribute noise disturbance to the northern spotted owl beyond the current condition. Impacts from noise associated with this project (such as from chainsaws) are not expected due to the distance between areas of operation and known NSO nest locations.

There is one acre of NRF habitat within the home ranges of three NSO sites (0096O, 0114O, and 4068O). Site 0096O habitat is within the 0.5-mile core area, but outside of the nest patch of site. Sites 0114O and 4068O are in the home range, but outside of the 0.5-mile core area of these sites. All three sites are not likely to be adversely affected from habitat modification because of the small acreage (1 acre) and minimal habitat effects (treat and maintain). Due to the minimal alteration of vegetation (described above), it is unlikely the treatments would adversely impact essential habitat for nesting or foraging and would treat and maintain the stands. Reproduction and survival of the owls associated with the site would not be affected. The proposed Jack-Ash Trail Project would not change the function of the Critical Habitat Unit.

For the same reasons cited above (minimal alteration of vegetation and small area of NSO habitat affected), effects to NSO prey species is anticipated to be minimal. Some loss of cover through vegetation trimming and movement of woody debris and rocks may displace prey species. This displacement would be temporary as NSO prey (wood rats, flying squirrels, etc.) are very mobile and would find new cover habitat. Good habitat for NSO prey exists across the landscape and would not be measurably affected by the Proposed Action.

3.6.2.3 Cumulative Effects – Alternative 2

The effects to NRF and Dispersal habitat are summarized in Table 2. The project listed in this table represents the current proposal for the Nedsbar Forest Management Project and Jack-Ash Trail Project. It is likely the effects to habitat described below would be reduced at the time of the project Decision Record because it is anticipated that acres would be deferred for various reasons including economics or logging feasibility issues, resulting in fewer acres offered for sale. Consultation monitoring reports would reflect the actual implemented acres for these projects.

The Jack-Ash Trail Project is not expected to contribute to cumulative effects to northern spotted owls due to its very small spatial footprint, its narrow linear nature, and its limited impact to the existing habitat. All NSO habitat the Jack-Ash Trail would pass through would continue to perform its current function for NSO life cycle stages. This is due to the planned retention of current canopy cover, stand complexity, down woody debris, and other important habitat components.

There are no private industry lands parallel to Phase 1 of the Jack-Ash Trail Project. There is a limited amount of forest industry land in Section 30, T 39 S., R 1 W. Non-federal lands are not expected to provide demographic support for spotted owls across and between physiographic provinces (Thomas et al. 1990, USDA and USDI 1994). The Medford BLM assumes these past management practices would continue and reduce the amount of NRF habitat for spotted owl on non-federal lands over time. The limited amount of private land harvest at the watershed level would not preclude spotted owls or other late-successional forest species from dispersing within or through the Jack-Ash Trail NSO Analysis Area.

Table 2. Effects to NSO Habitat from the Proposed Foreseeable Projects

Action Area Baseline Habitat (acres)	*18,478*						*22,424* *(NRF + Dispersal-only)*		*51,440*[1] *(total AA)*
	NRF Remove (acres)		**NRF Downgrade (acres)**		**NRF T&M[3] (acres)**		**Dispersal-only Remove (acres)**	**Dispersal-only T&M (acres)**	**Total Acres Treated**
	NRF[2]	**RF[4]**	**NRF[2]**	**RF[4]**	**NRF[2]**	**RF[4]**			
Nedsbar Forest Management Project	0	110	0	284	0	277	240	936	**1,847**
Jack-Ash Trail Project	0	0	0	0	1	0	0	2	**3**
TOTAL	**0**	**110**	**0**	**284**	**1**	**277**	**240**	**938**	**1,850**
% Change to Action Area Baseline Habitat	**-0.6%**		**-1.5%**		**No Change**		**-1%**	**No Change**	**3.5% of AA treated**

1- Total Action Area acres across all ownership including 3,662 acres of non-habitat and 9,146 capable habitat; the remainder of the Action Area is "non-habitat" (brushfield, grassland, oak woodland) with regard to NSOs.

2- NRF = Nesting/Roosting/Foraging (McKelvey 1)

3- T&M = Treat and maintain

4- RF = Roosting /Foraging (McKelvey 2)

3.7 RECREATION

3.7.1 Methodology

The Analysis Area for Recreation includes the area within and a 0.5 mile radius around Phase 1 of the Jack-Ash Trail Project and the SMDT trail. The project's Outdoor Recreation Planner completed a review of planning documents to determine current recreational use and trends. Documents included the Little Applegate Watershed Analysis (1995b), Medford District RMP (1995a), 2008-2012 Oregon SCORP, and survey results for the 2013-2017 SCORP. Trail layout and design was prepared using guidance developed by the various federal agency handbooks, by reviewing ownership maps, aerial photography of the Analysis Area, and field reconnaissance by BLM specialists and members of SUTA.

3.7.2 Affected Environment

Recreation use across the Medford District BLM is described in the 1995 Medford District Proposed Resource Management Plan. BLM lands fall into two recreation management areas, special recreation management areas (SRMA) and extensive recreation management areas (ERMA). SRMAs are those areas identified with high concentrations of recreation use and developed facilities. ERMAs are all BLM-administered lands not included in SRMAs identified in the RMP (PRMP/EIS, pp. 3-71) that provide for dispersed recreation opportunities across the Medford District BLM.

Current recreational activities such as hiking, horse-back riding, biking, hunting, mushroom gathering, and OHV use will continue to occur throughout the Analysis Area.

Recreational use levels on BLM-administered lands in the Analysis Area are low. Use is dispersed due to the checkerboard land ownership and lack of public access to the area. Because of this, the primary users of public lands within the Analysis Area are the adjacent private landowners and local residents who are

knowledgeable of the existing roads and access points. The main public roads providing access into or around the area are Anderson Butte Road, Sterling Creek Road, Bishop Creek Road, and Little Applegate Road.

The developed recreation facilities on BLM-administered land within the Analysis Area are trails and trail heads for Hidden Creek, Grub Gulch, Listening Tree, and the Sterling Mine Ditch Trail. All three trails are connectors into the proposed Jack-Ash Trail Project. The Medford District RMP ROD also identifies the Anderson Butte and Anderson Creek roads as part of the McKee-Anderson Back Country Scenic Byway.

3.7.3 Environmental Consequences

3.7.3.1 Alternative 1 – No Action

Under the No Action Alternative, impacts to recreation resources would not change from the current condition and potential user conflicts would continue. Additionally, the top two statewide non-motorized trail objectives identified in the 2005-2014 Oregon Statewide Non-motorized Trail Plan would not be met, which are (1) the need for more trails in close proximity to where people live, and (2) the need for additional non-motorized trails. The region's top trail priority of increasing trail connectivity to urban areas and adjacent public lands would also not be met.

3.7.3.2 Alternative 2 – Proposed Action

Development of the Phase 1 Jack-Ash trail system would contribute toward meeting Oregon's top recreational priorities to provide more non-motorized trails in close proximity to where people live and increase connectivity of trails.

Developing the trails would result in increased recreational use of the area by equestrians, mountain bikers, hikers, and runners. The trail system would create a scenic route designed for all levels of non-motorized users. This trail would also provide for activities such as wildlife viewing, birdwatching, picnicking and many other top priority recreational activities in Oregon. Potential future expansion of the trail system beyond Phase 1 would offer additional loop and connectivity opportunities.

The designation of four new trailheads at existing graveled-parking areas would improve recreation experience by providing trail users with easily accessible parking areas and information kiosks. Kiosks would be designed in sturdy rustic wood frames with shingle roofs, similar to existing kiosks at trailheads on the Sterling Mine Ditch Trail system. These kiosks would provide maps and information on area resources and features of interest.

3.7.3.3 Cumulative Effects – Alternative 2

Past actions on public and private lands in the vicinity of the Project Area that may affected visual resources are activities that could change the aesthetics of the area (such as road and trail construction, quarry development, trash dumping, target shooting, wildfire, wildfire suppression activities, logging, and mining). Present and future actions on nearby private lands are under the jurisdiction of the Oregon Forestry Practices Act, which allows for more extensive and larger scale changes to the landscape. These changes would be similar to past activities and would likely be visible on the landscape. Other potential recent or foreseeable BLM actions for the Project Area include the recently completed Sterling Sweeper Timber Sale and the proposed Nedsbar Forest Management Project. Best practices and Project Design Features are incorporated into the design of these BLM projects to conform to the RMP Visual Resource Management (VRM) classification objectives to minimize effects to visual resources. Future logging operations could result in some temporary road and trail closures during logging activities. Roads and trails would be re-opened when operations are completed and user safety would not be impacted.

The project would enhance non-motorized recreational opportunities on the slopes and ridges above the SMDT by providing hiking, mountain biking, and equestrian users with options and long loop opportunities. By creating a separate non-motorized trail system, it would eliminate potential conflicts with OHV users on the Anderson Butte ridge complex. Future phases of the Jack-Ash Trail, if implemented, would additionally provide further non-motorized opportunities separate from motorized users between the Jacksonville woodlands, the trails of the Ashland Watershed, Mt. Ashland area, and the Pacific Crest National Scenic Trail. As with Phase 1, non-motorized use trails would be separated from other uses in areas of narrow trails to minimize user conflicts.

Construction of the three trail segments (2.7 miles, 1.7 miles, and 0.3 miles) would enhance the recreational opportunities of the SMDT system by providing a long loop for non-motorized trail users as an alternative to a loop that would otherwise consist entirely of existing BLM roads between the north and south ends of the SMDT. It would also help to deflect non-motorized users away from the areas most used by OHV users. The new segments would connect Anderson Butte road with the Armstrong-Deming and Grub Gulch roads, providing users with an enhanced off-road recreational experience through woodlands and grassy meadows as opposed to mostly gravel roads.

These new trail segments would increase view opportunities for recreationists by bringing the route onto the slopes of Anderson Butte where there are sweeping vistas of the Sterling Creek area and the Little Applegate to the west and south. Users could also hike up to the site of the Anderson Butte fire lookout for sweeping views of the entire region including the Rogue Valley, Cascades, and the Applegate Valley. Portions of the new trail segments would pass through grassy openings where the viewshed is more open. Otherwise, the proposed trail segments are surrounded by low to medium density managed forest and views involve the immediate forested vicinity. Where the proposed trail route runs concurrent with existing multiple-use roads in Anderson Butte and Grub Gulch, it would be open to both motorized and non-motorized users. An increase in user conflicts is not expected, since these are high standard, wide BLM roads that are currently accommodating multiple uses well. Conflicts between motorized users and non-motorized users are expected to decrease, as the new trail segments would direct non-motorized users off narrow trails used by OHVs.

Up to 152 acres of the proposed Nedsbar Forest Management Project is within the Recreation Analysis Area for the Jack-Ash Trail Project. Best management practices would be applied to the Nedsbar Forest Management Project so that forest management activities would be commensurate with recreation such as application of buffers or the trail would be fully restored from any logging system crossings immediately after treatment. Therefore, the Nedsbar Forest Management Project would not have a lasting cumulative impact on the Jack-Ash Trail and the effects would be within those analyzed in the 1995 Medford District RMP which allows for the management of timber within designated trails.

3.8 SUMMARY OF EFFECTS ON OTHER RESOURCES

The following resources did not pertain to the issues or affected resources identified internally or externally in Section 1.5.2 of the EA and analyzed in the EA. This section summarizes the effects to resources that do not meaningfully differentiate between the No Action and Proposed Action. Resource-specific appendices are included in this EA to more fully describe how this conclusion was reached. The appendices largely do not include analysis of the No Action alternative or cumulative effects since the Proposed Action would not meaningfully contribute further changes to the current or foreseeable condition of these resources.

3.8.1 Soil Resources

The potential impacts to soils from trail construction and use would include compaction, erosion, and displacement; approximately 11.2 acres of soil would be affected in Phase 1 of the proposed trail

construction. This is based on a maximum width of 10 feet on either side of the trail. That would account for the approximately 3 foot trail width, potential soil disturbance outside of trail surface (mainly on trail locations on a steep side slope where the cut slope would need to be wider), and the distance of vegetation thinning and trimming beyond the trail. The long-term area of soil disturbance is much lower, and concentrated to the trail surface. The area of long-term soil compaction on the trail surface would be approximately 1.6 acres. Once the trail is constructed and bicycle and hiking traffic occurs, compacted soils would resist erosion and soil displacement and provide durable treads that support traffic.

Soil particles displaced from the trail prism would be intercepted by vegetation, organic material on the soil surface, or other surface roughness. The out-sloped trail and rolling dips would force eroded soil particles off the trail instead of concentrating flow down the trail surface. Vegetation and soil impacts would occur predominantly during the first year of use, with minor changes thereafter.

A well-designed trail should result in little to no cumulative soil loss (Marion and Wimpey 2007, p. 6). The direct and indirect loss of soil is expected to be so minimal that the cumulative soil loss would be negligible.

See Appendix B, Soil Resources for more information.

3.8.2 Water Resources

Water resources are not expected to be affected due to the largely ridgeline location and hydrological disconnection of the proposed trail construction segments to any active stream channels or water bodies. All areas where Phase 1 route crosses perennial streams occur on existing BLM roads, thus no new disturbance in the stream zone would occur.

See Appendix C, Water Resources for more information.

3.8.3 Aquatic Habitat and Fish

The three segments proposed for trail construction are located in the four 7th field drainages of Grub Gulch, Deming Gulch, Sterling Creek above Hopkins, and Muddy Gulch. The proposed new trail segments cross several dry draws in the Grub Gulch and Deming Gulch drainages, and in the uppermost headwaters of Muddy Gulch drainage. There are no project activities proposed in or adjacent to fish-bearing streams, and no new trail segments would cross any Riparian Reserves or stream channels.

By adhering to the Project Design Features, no effects on fish or aquatic organisms are expected, because seeps, springs, and wet areas would be avoided and hence this project would lack hydrological connectivity with aquatic habitat. No disturbance to Riparian Reserve vegetation is anticipated. For these reasons, ACS objectives would not be impacted at any spatial scale of analysis.

3.8.4 Botany

Gentner's fritillary (*Fritillaria gentneri*) is the only potential federally listed plant species in the range of the Project Area. No Special Status vascular and non-vascular plants (including federally threatened, endangered, Bureau Sensitive, or Survey and Manage) were found during 2015 botany surveys of the proposed trail corridor. Surveys for Special Status and Survey and Manage species will be conducted at the proposed parking areas prior to a making a decision on this project. Rare plants discovered during surveys would be protected by seasonal restrictions or no treatment buffers (PDFs Section 2.3). This project is exempt from fungi surveys per the 2011 Settlement Agreement in Litigation over the Survey and Manage Mitigation Measure in *Conservation Northwest et al. v. Sherman et al.*, Case No. 08-1067-JCC (W.D. Wash.), (USDA and USDI 2011, p. 12). Therefore, implementing the Proposed Action would not trend Special Status plants toward listing or affect their persistence.

See Appendix D for the Botany Survey and Manage compliance sheet.

3.8.5 Noxious Weeds

The proposed trail corridor was surveyed for noxious weeds in the spring of 2015. Two plants of Oregon Department of Agriculture (ODA) B-listed *Cirsium vulgare* (bull thistle) were discovered and pulled in spring 2015. Other non-native invasive plants present along the trail include: *Bromus tectorum* (cheatgrass), *Cynosurus echinatus* (hedge-hog dogtail grass), and *Torilis arvensis* (spreading hedge-parsley). The four proposed parking areas along Anderson Butte Road and Armstrong-Deming Road will be surveyed in spring of 2016 prior to project implementation. State-listed (ODA 2016) noxious weeds in or adjacent to ground disturbing activities proposed for the project would be treated prior to implementation and in subsequent years. Surveys for noxious weeds will be conducted at the proposed parking areas prior to a making a decision on this project. Noxious weeds would be treated by hand-pulling and/or by spot spraying with BLM approved herbicides (USDI 1998).

Noxious weeds and introduced plants would continue to spread where they exist in the Analysis Area as a result of human activities and natural processes. However, the rate at which weeds could potentially spread as a result of these activities cannot be predicted due to the indistinguishable causal effects of these activities and factors, and would not be distinguishable from the No Action Alternative.

Project Design Features include washing tools and equipment prior to moving it on-site and seeding highly disturbed soil outside the trail prism with native grasses or approved seed mix to reduce the potential establishment of noxious weeds. These PDFs are widely accepted and utilized as Best Management Practices (BMPs) in noxious weed control strategies across the nation (Thompson 2006). As such, the Proposed Action would result in a similar potential of noxious weed expansion as associated with the No Action Alternative.

See Appendix E, Noxious Weeds for more information.

3.8.6 Terrestrial Wildlife

The only terrestrial Special Status species potentially affected by the proposed Jack-Ash Trail project is the northern spotted owl (threatened), which are analyzed in Section 3.6 of this EA. Potential impacts to terrestrial wildlife from the Proposed Action are best measured by the expected changes in stand structure within different habitat types as a direct result of management activities. No other terrestrial Special Status species are expected to be affected as the project would not occur in their habitat, the species is not present in the Analysis Area, or PDFs would protect reproductive or rendezvous sites.

For more information on each terrestrial Special Status species considered for this project, see Appendix F of this EA.

3.8.7 Fire and Fuels

Proposed project elements do not include activities that would measurably increase fire hazard or risk. Cut vegetative material would be lopped and scattered, hand-piled and burned, or chipped to prevent an increase in fire hazard. Since minimal vegetative material would be cut for the proposed trail construction and parking area work, the project would not increase the fuel loading or the fire hazard.

Increased public use is not expected to substantially increase fire risk. Project features do not include activities that would measurably increase fire hazard or risk such as camping, cooking, or picnic areas that are associated with recreation-caused fires. Historical fire data in similarly used non-motorized areas do not show a measureable increase in fire occurrence. For example, Cathedrals Hills Park is a multiple-use

trail system near Grants Pass. In recent years, the trail has undergone renovations that have dramatically increased visitor use. Recent surveys show that a few hundred people visit the trail system each week. Despite this large increase of users, there has been no substantial increase in fires. Since 2000 (16 years), the Cathedral Hills Trail System has experienced 3 small human-caused fires. All three were detected and controlled at less than 0.1 acre. Evidence suggests that increased public use leads to increased awareness, prevention, and detection. The presence of trail systems can also assist in fire suppression efforts by increasing access/egress and containment opportunities for firefighters.

Fire risk in the Project Area would continue to be dominated by natural and human-caused fire sources (e.g., Applegate Road, Anderson Creek Road, Sterling Creek Road, and neighbors) unrelated to this project. It is foreseeable that large fires in the Project Area would continue on the current 0-35-year return intervals.

3.8.8 Visual Resources

The Project Area is classified as VRM Class III under the 1995 Medford District RMP. 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 the attention of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.

The Jack-Ash Trail Project would meet the management guidelines for VRM III and would result in low levels of change that would largely retain the existing character of the landscape. The linear segments proposed for construction may be seen by the casual observer against the backdrop of the meadows on the upper slopes of Anderson Butte, but it would not dominate the view. Casual viewers passing by in automobiles are unlikely to see the trail unless they know it is there. After the first growing season, grasses and other vegetation would re-grow such that the trail would be mostly hidden and would be a minor component of the view of the meadow slopes.

See Appendix G of this EA, Visual Resources for more information.

3.8.9 Cultural Resources

As stated in Section 1.7.2 of this EA, a literature review and a cultural resource survey were conducted for the Jack-Ash Trail Project Area. The literature review showed previous survey of 99 acres occurred around the Jack-Ash Trail Project construction area (AH96-03, AH99-55). Cultural surveys were completed in August 2015 for areas proposed for new ground disturbance for this project. No cultural resources were located during the most recent survey. No significant cultural resources are within the APE. No historic properties have been located within the APE. Documentation of this finding shall be reported to the Oregon State Historic Preservation Office as outlined in Section VI.H. of the 2015 State Protocol.

If, during project implementation, the contractor/workers encounter or become aware of any objects or sites of cultural value on federal lands, the BLM would implement site-specific protection measures (e.g., buffers, modify the trail location) based on recommendations from the Resource Area archaeologist and concurrence by the Ashland Field Manager and State Historic Preservation Office.

CHAPTER 4.0 LIST OF PREPARERS

4.1 INTRODUCTION

This section lists the BLM staff involved in the preparation of this document.

BLM Employees	Title	Primary Responsibility
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Jon Larson	Fire Management Specialist	Fire and Fuels
Steve Godwin	Wildlife Biologist	Wildlife
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Amy Meredith	Soil Scientist	Soil
Chris Volpe	Fish Biologist	Fisheries
Lisa Rice	Archaeologist	Cultural Resources

The BLM would like to thank the following contributors for Phase 1 of the Jack-Ash Trail Project:

Siskiyou Uplands Trail Association (SUTA) members and volunteers

Hope Robertson, Jim Clover, Jeff Judkins, Autumn MacIvor, Joy Rogalla, Jannalee Smithey, Jim Reiland, Annette Parsons, and Duane and Katy Mallams

Additional Previous BLM employee contributors

John Gerristma, Dennis Byrd, Chris Dent, and Ted Hass

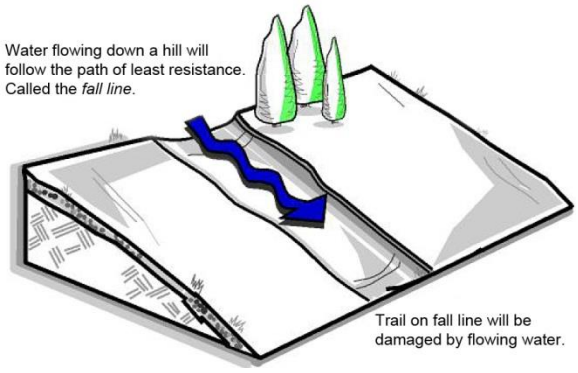
Appendix A – Sustainable Trail Guidelines

The Five Essential Elements of Sustainable Trails

1. The Half Rule
2. The 10 percent Average Grade
3. Maximum Sustainable Grade
4. Grade Reversals
5. Out-slope

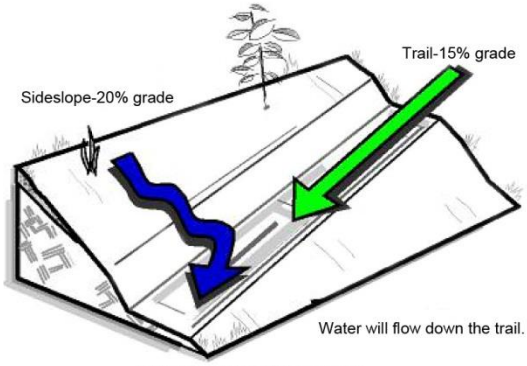
1. The Half Rule

A trail's grade should not exceed half the grade of the side-slope the trail is traversing. If the trail's grade exceeds half the slope's grade, it is considered a fall-line trail. Water will be focused to travel the fall line, the path of least resistance, rather than flowing across it.

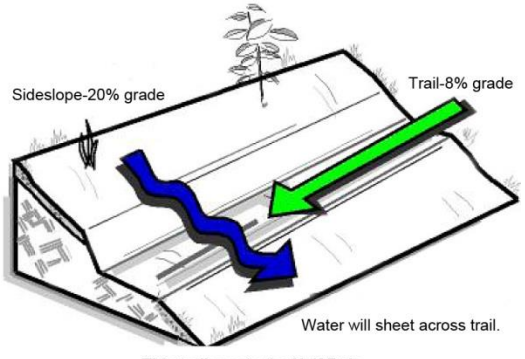


Using a clinometer to measure the side-slope percent of grade, keeping the trail's tread grade below half of what was measured will ensure proper drainage. For example, with a side-slope of 20 percent, the trail's tread should not exceed 10 percent grade.

The half rule is especially important in areas of gentle slopes; erosion can still occur and the half rule still applies. For example, a trail traveling through an area with side-slopes of 6 percent should have a trail grade less than 3 percent to avoid the fall line. Flat areas should be avoided, as trails built in these areas are more likely to collect and hold water.



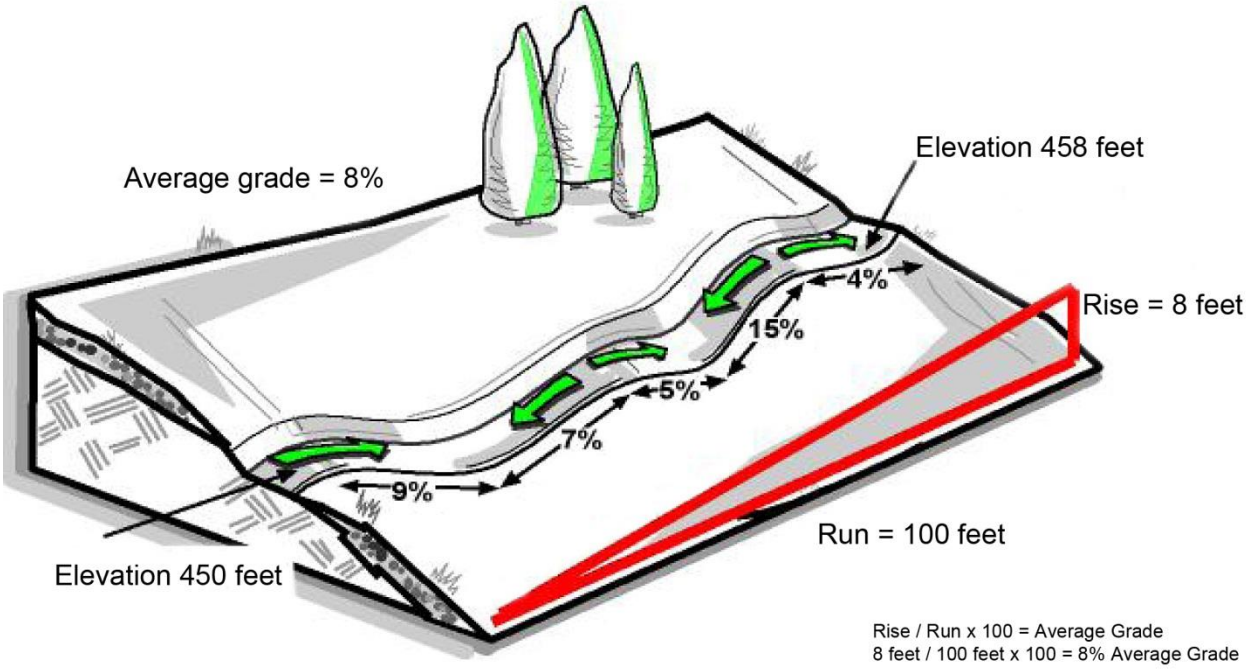
This trail breaks the Half Rule.



This trail meets the Half Rule.

2. The 10 Percent Average Grade

Generally, an average grade of 10 percent or less is the most sustainable. This does not mean that all trail grades should be kept under 10 percent. In many situations, the trail may undulate, creating areas that have short sections steeper than 10 percent. But overall, the trail's average grade should be maintained at a sustainable grade of 10 percent or less. Short sections can exceed 10 percent as long as the half rule is still used (15 percent trail grades can be used for short sections as long as the side-slope is greater than 30 percent).



3. Maximum Sustainable Grade

Maximum grade, usually around 15 to 20 percent, is the steepest allowable grade based on several site-specific factors including ***Half Rule*** (the trail grade is less than half the side-slope grade); ***Soil Types*** (some soils support steeper grades than others), ***Rock*** (solid rock or rock embedded slopes can be steeper), ***Rainfall*** (short duration heavy rainfall leads to water-caused erosion; low rainfall leads to dry, loose soils), ***Grade Reversals*** (a short dip followed by a rise forces the water to drain off the trail), ***Types of Users*** (low impact users, hiking and biking, can sustain a steep grade, while higher impact users, horses and motorized, should have lower maximum grades), ***Number of Users*** (higher anticipated use could alter design standards to lower grades), and ***Difficulty Level*** (trails with a higher degree of technical challenge tend to have steeper grades; grade reversals and armoring are necessary to ensure sustainability).

4. Grade Reversals

A grade reversal is a spot at which a climbing trail changes direction and drops in elevation for a short stretch before rising again. This change in grade allows water to exit the trail tread at the low point of the grade reversal. Grade reversals are recommended every 20 to 50 feet. Grade reversals are also known as grade dips, grade brakes, drainage dips, and rolling dips.

Appendix B – Soil Resources

Methodology

The scale of analysis for soil productivity, compaction, and on-site erosion encompasses the proposed trail construction corridor, as it the area where ground disturbing activities would occur for the Jack-Ash Trail Project. This is expected to not be further than 10 feet on either side of the centerline of the proposed trail. This area will be referred to as the "Analysis Area" for this section.

- Soil series were determined from the Jackson County Soil Survey.
- Fragile soils were determined not present from using the Timber Production Capability Classification inventory, the Medford District's current corporate Geographic Information System (GIS) layer the fragile soils layer, and through site-specific field review.
- Field reconnaissance was conducted of the proposed trail system (initial phase) to "ground-truth" soil conditions and characteristics.
- The *Little Applegate Watershed Analysis* was also used for soil information.
- Mileage and acreage of soils affected were determined from GIS calculations using various GIS tools such as: buffers, intersections and clips. Therefore the totals may be slightly different than other portions of the document.

Assumptions

- Short-term effects are 5 or less years from the action and long-term effects are greater than 5 years.

Affected Environment

The landscape in the area of Phase 1 Jack-Ash new trail segments is composed primarily of steep mountain sideslopes ranging from about 30 percent to over 65 percent. Geology is mainly metamorphic rock and soils derived from this rock are gravelly and well-drained and tend to be moderately deep (20 to 40 inches) with some areas of shallow soils and rock outcrop. The main limitations for management on the soils in the area of proposed trail construction are steep slopes and high erosion hazard due to steep slopes.

There are no soils classified as fragile under the Timber Productivity Capability Classification (TPCC) Handbook (USDI 1986a) in the proposed trail construction corridor for the Jack-Ash Trail Project. This determination was made by reviewing the Medford District's current corporate GIS layer for fragile soils as well as the 1995 Medford District RMP/ROD, Map 6. The nearest fragile soils are more than 2.2 miles away from the proposed trail corridor. Since this information is compiled broadly and is not based on site- specific field review, the proposed trail location was assessed during site-specific field review to determine site stability. Field data collected ultimately determines the specific areas where trail construction is suitable. This field review determined there were no fragile soils present in the project units and that the proposed trail would be suitable for soils in the area.

Table B-1. Soil Map Units in the Proposed Trail Construction Corridor

Soil Map Unit	Map Unit Name	Maximum Acres of Map Unit Potentially Disturbed	Location
25G	Caris-Offenbacher gravelly loams, 50 to 80 percent north slopes	0.1	West end of BLM portion just east of private segment
26G	Caris-Offenbacher gravelly loams, 50-75% south slopes	4.4	Midslopes of Anderson Butte and mid- to upper slopes above Grub Gulch
87G	Jayar very gravelly loam, 45-70% north slopes	1.0	Upper slopes of Anderson Butte
113G	McMullen-Rock Outcrop complex, 35-60% slopes	3.2	Mid- and upper slopes of Anderson Butte
196E	Vannoy silt loam, 12 to 35 percent south slopes	0.03	Lower slopes at west end of BLM portion just east of private segment above Sterling Creek
197F	Vannoy-Voorhies complex, 35-55% slopes	2.5	Upper slopes of Anderson Butte, and south-facing mid and lower slopes at the west boundary of BLM land just before the private segment
	Total Max Acreage Soil Disturbed	11.23	

**Assuming maximum disturbance of 10 feet on either side approximate location of center of trail.*

Detailed characteristics of these soil map units are described in the Jackson County Soil Survey.

Map Unit 25G consists of about 60 percent Caris gravelly loam and 30 percent Offenbacher gravelly loam. These soils are moderately deep and well drained, and have formed from metamorphic rock. Runoff is rapid and erosion hazard is high due to steep slopes.

Map Unit 26G consists of about 60 percent Caris gravelly loam and 20 percent Offenbacher gravelly loam. These soils are moderately deep and well drained, and have formed from metamorphic rock. Runoff is rapid and erosion hazard is high due to steep slopes.

Map Unit 87G consists of Jayar very gravelly loam, with small included areas of rock outcrop, shallow soils, and soils with serpentine influence. Jayar soil is moderately deep and well drained, and has formed from colluvium derived dominantly from metamorphic rock. Runoff is rapid and erosion hazard is high due to steep slopes.

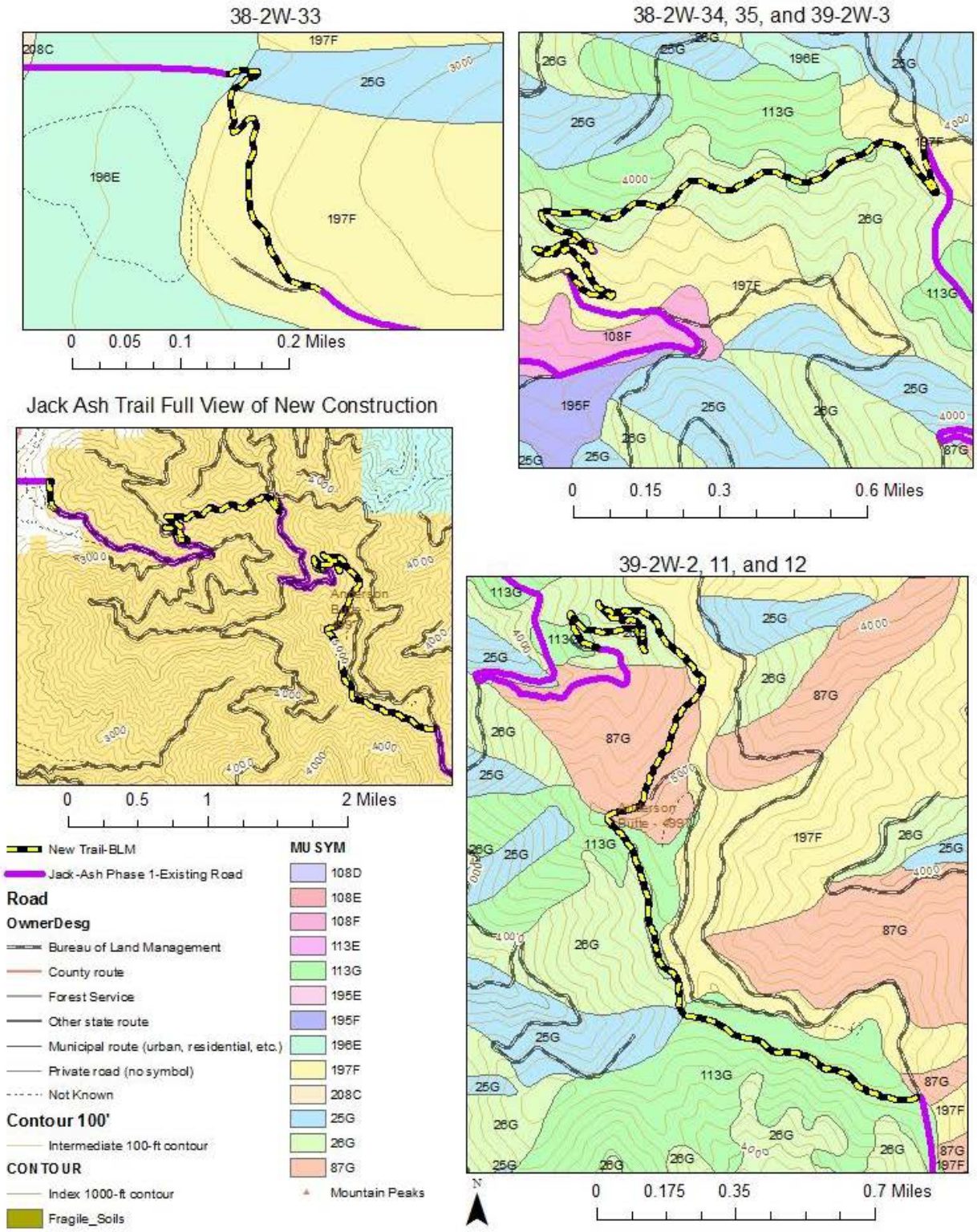
Map Unit 108F consists of Manita loam with small areas of deeper soils. Manita soil is deep and well drained and has formed from colluvium derived dominantly from metamorphic rock. Runoff is rapid and erosion hazard is high.

Map Unit 113G consists of 60 percent McMullin gravelly loam and 30 percent rock outcrop. McMullin soil is shallow and well drained and has formed in colluvium derived from igneous and metamorphic rock. Runoff is rapid and erosion hazard is high.

Map unit 196E consists of Vannoy silt loam, a moderately deep, well-drained soil derived dominantly from metamorphic rock. Runoff is medium and the hazard of water erosion is moderate, due primarily to slope.

Map unit 197F consists of about 60 percent Vannoy soil and 30 percent Voorhies soil. These soils are moderately deep and well drained and have formed from metamorphic rock. Runoff is rapid and erosion hazard is high due to slope.

Soil Map Units within the Proposed New Construction of Jack- Ash Trail



Environmental Consequences

Effects of Alternative 2 (Proposed Action) on Soils

Approximately 4.6 miles of trail would be constructed in Phase 1. The average trail tread would be approximately 3 feet wide. The trail tread would compact about 1.7 acres of soil and remove it from vegetative productivity.

An additional 6 feet of width (maximum of 3 feet of either side) would be disturbed due to vegetation thinning and trimming. This additional area (approximately 3.4 acres) is the maximum amount of potential disturbance from vegetation thinning and trimming. The likelihood of this area having soil disturbance from the vegetation removal would be minimal because only vegetation imposing on the trail would be cleared. Vegetation at soil surface would not be cleared (grasses and other low lying vegetation would not be removed). Additional gravel to be placed at the four existing parking areas would be within the existing footprint and would not result in additional soil disturbance or compaction.

In areas where full-bench construction would occur, soils beyond the tread would be disturbed from the cut slope. The amount of area would vary. For this analysis, is assumed that it would not exceed 5.5 feet from either side of the trail. This accounts for the remaining potential acreage of disturbance (6.17 acres). The distance of disturbance would depend on many factors but the main factor is the steepness of the side slope. The majority of new construction is on side slope. In general, the area of cut/fill increases as the slope increases. Soil would be removed in these locations and expose either subsoil or bedrock. It would take 1 to 3 years for the new soil surface to stabilize. There would be a long term impact to the productivity levels in some of these sites as it takes several years for top soil to build. It is likely that the amount of areas disturbed by cut/fill is much lower than this estimate but this is the highest possible impact.

Although the project would occur on slopes ranging from 30 to 75 percent, it is anticipated that the disturbed soil would only be moved a short distance and the PDFs would minimize off-site sediment delivery during and immediately following trail construction. The trail design (less than 8 percent slope, use of out-sloping and grade dips, etc.) and PDFs during construction would minimize the potential for erosion to occur.

According to the Soil Survey of Jackson County, Oregon (Johnson 1993), the soils in the area of the proposed 4.6 miles (approximately) of new trail construction are mapped as indicated in Table A-1.

Once the trail is constructed and used, compacted soils would resist erosion and soil displacement and provide durable tread that support traffic. All the soil series within the Phase 1 trail area are rated by the National Resources Conservation Service as having a low potential for resistance to compaction. This is due to the soil structure, low amount of organic matter, and rock fragment content.

The potential for user-created trails may increase the area of compacted soil. In areas of narrow switchbacks, there is a potential for user corner cutting which could also be a concern for soil erosion. However, trail users would be urged to stay on the trails. Due to proper trail design, steep terrain, and thick vegetation, off-trail hiking or mountain biking is not anticipated to be a concern.

Soil erosion is an indirect and largely avoidable impact of trails and trail use. Soil can be eroded by wind, but generally, erosion is caused by flowing water. To avoid erosion, sustainable trails are constructed with a slightly crowned (flat terrain) or outsloped (sloping terrain) tread. However, subsequent use compacts or displaces soils over time to create a cupped or insloped tread surface that intercepts and carries water. The concentrated run-off picks up and carries soil particles downhill, eroding the tread

surface. The most effective and sustainable method for removing water from trails is the Coweeta or grade dip, also known as terrain dips or rolling grade dips (Marion and Leung 2004). These are constructed by reversing the trail's grade periodically to force all water off the tread. The proposed trail would be designed with an out-sloped tread and rolling dips that would force eroded soil particles off the trail so flow would not be concentrated down the trail surface. Soil particles displaced from the trail prism would be intercepted by vegetation, organic material on the soil surface, or other surface roughness. Additionally, the trail's design includes an average trail grade of less than 8 percent with a maximum grade of 15 percent. Trail slopes greater than 12 percent are typically associated with higher potential for degradation (White et al. 2006). Since the majority of the trail grade would be less than 8 percent, it is expected that the potential for degradation would be very low. There are a few short locations of the trail that are over the 8 percent grade. Degradation is still expected to be low in these sites because they are not sustained grades.

Appendix C – Water Resources

Methodology

The Analysis Area for Water Resources encompasses Grub Gulch, Deming Gulch, Sterling Creek above Hopkins, and Muddy Gulch 7th field drainages where the proposed trail construction and four parking areas would be established. The rationale is that adverse (or beneficial) effects to water resources are easier to detect in smaller catchments (Bosch and Hewlett 1982) and as one nears the treatment site. The size of a drainage area is large enough to assess the cumulative effect of actions that, taken individually at the site-scale may not be significant, but when combined with effects from other actions in the drainages, may have a potential impact (i.e., cumulative effect).

Affected Environment

The proposed new trail segments would be constructed within the Grub Gulch and Upper Deming Gulch drainages in the Sterling Creek sub-watershed, and in the Muddy Gulch drainage in the Little Applegate sub-watershed. Grub Gulch and Deming Gulch are tributaries to Sterling Creek, which is a tributary to the Little Applegate River. Muddy Gulch is a stream that is tributary to the Little Applegate River. The proposed new trail segments would traverse primarily west- and south-facing upper and mid-slopes and would not cross any perennial or intermittent streams. The trail would cross the tops of several dry draws on the segment descending the slope above Grub Gulch and the Hidden Creek Trail; and on the switchbacks of the segment on the upper slopes of Anderson Butte in a tributary to Grub Gulch. No perennial or intermittent streams occur in the areas of proposed new trail construction.

Environmental Consequences

Effects of Alternative 2 (Proposed Action) on Water Resources

No sediment is expected to reach Grub Gulch, Deming Gulch, or Muddy Gulch as a result of construction or erosion, as there is no hydrological connectivity between new trail construction and any active stream channels. All areas where Phase 1 route crosses perennial streams occur on existing BLM roads, thus no new disturbance in the stream zone would occur.

Appendix D – Botany Survey & Manage Compliance

Survey & Manage Tracking Form: Botany Species Survey and Site Management Summary
Medford District—Ashland Resource Area

Project Name: Jack-Ash Trail **Prepared By:** Armand Rebischke

Project Type: Trail Construction Project **Date:** March 27, 2016

Location: T.38 S., R. 2 W. Sections 33, 34, 35;

T. 39 S., R. 2 W. Sections 2, 3, 11, 12

S&M List Date: 2001 list with 2003 Annual Species Review

Survey & Manage Botany Species

The Medford District BLM surveyed for species from the *2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* with 2003 Annual Species Review and includes those botanical species whose known or suspected range includes the BLM Medford District according to information in the Survey Protocols in IM-OR-99-026 (USDI 1999), IM-OR-2003-078 (including Change 1; USDI 2003), and IM-OR-2000-017 (including Change 1; USDI 2000) - Bryophyte Protection Buffer Species version 2.0.

No Survey and Manage species were detected during surveys.

Statement of Compliance

The Medford District BLM applied the *2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* with 2003 ASR species list to the Jack Ash Trail project, completing the pre-disturbance surveys, and management of known sites required by Survey Protocols and Management Recommendations to comply with the 2001 Record of Decision.

s:/ Armand Rebischke March 27, 2016
Armand Rebischke, Botanist Date
Medford BLM District, Ashland Resource Area

Appendix E – Noxious Weeds

Methodology

The Analysis Area for Noxious Weeds and non-native invasive plants is the proposed trail construction tread and 100 feet on either side of the proposed trail and the four parking areas proposed. For this project, the effects of noxious weeds are easier to detect at smaller scales. Providing this analysis at a more expansive scale would not detect any measurable effects and would eliminate any meaningful discussion of the effects. With the application of Project Design Features (PDFs) such as washing equipment prior to entering BLM-administered lands and seeding and mulching disturbed areas, the effects from noxious weeds under the Proposed Action are not expected to be different than the No Action Alternative based on recent projects of this scale and scope.

The proposed trail corridor was surveyed for noxious weeds in the spring of 2015. Two plants of Oregon Department of Agriculture (ODA) B-listed *Cirsium vulgare* (bull thistle) were discovered and pulled in spring 2015. Other non-native invasive plants present along the trail include: *Bromus tectorum* (cheatgrass), *Cynosurus echinatus* (hedge-hog dogtail grass), and *Torilis arvensis* (spreading hedge-parsley). The four proposed parking areas along Anderson Butte Road and Armstrong-Deming Road will be surveyed in spring of 2016 prior to project implementation. State-listed (ODA 2016) noxious weeds in or adjacent to ground disturbing activities proposed for the project would be treated prior to implementation and in subsequent years.

Background

Noxious weeds are non-native plants that cause or are likely to cause economic or environmental harm or harm to human health. "Noxious Weed" describes any plant species that:

- causes or has the potential to cause severe negative impacts to Oregon's agricultural economy and natural resources;
- has the potential to or does endanger native flora and fauna by its encroachment into forest, range, and conservation areas;
- has the potential or does hamper the full utilization and enjoyment of recreational areas; and
- is poisonous, injurious, or otherwise harmful to humans and/or animals (ODA 2016, p. 5).

The Oregon Department of Agriculture designates and classifies noxious weeds according to their detrimental effects, reproductive strategies, distribution, and difficulty of control. Introduced plants are species that are non-native to the ecosystem under consideration. Introduced plants may adversely affect the proper functioning condition of the ecosystem.

The Medford District ROD/RMP states the objectives for noxious weeds are to continue to survey for, avoid introducing or spreading, and contain or reduce infestations on BLM-administered land (USDI 1995a, pp. 92-93). Across the Medford District, the more aggressive noxious weed species are slated for treatment under Medford District's *Integrated Weed Management Plan and Environmental Assessment OR-110-98-14* under a separate project.

Newly disturbed areas are most vulnerable to noxious weed establishment. Soil disturbance creates favorable conditions for the establishment of noxious weeds by removing competing vegetation. Weed seeds that have been suppressed in the soil have an opportunity to germinate and develop before native species are able to become reestablished.

Roads are common avenues of invasion, as seeds lodge in tire treads or undercarriages and can be carried from infested areas into newly disturbed unoccupied areas. Activities that introduce or spread noxious weeds include road construction, timber harvest, farming, over-grazing, recreation, and residential development. Natural processes, such as wind, seasonal flooding, and migration patterns of birds or animals also contribute to the spread of noxious weeds (Table D-1).

Table E-1. Factors Affecting Non-native Invasive Plants Spread

Activity	Role in Dispersing Noxious Weed Seed
Private Lands	Private lands host a perpetual source for noxious weed seed, which can be dispersed when seeds attach to tires, feet, fur, feathers, or feces, or when natural processes such as wind and/or flooding events transport the seed from its source to other geographical vicinities.
Farming and Grazing	Farming creates soil disturbance and openings that noxious weeds can occupy. Farming equipment may move noxious weed seed from one area to another. Agricultural seed may be contaminated with noxious weed seed and spread during farming activities. Overgrazing of pastures or rangelands removes vegetation leaving bare, open spaces that noxious weeds may invade. If livestock are fed grain or hay containing noxious weed seed or parts, or consume noxious weeds, they may disperse them when they move to non-infested pastures or range.
Logging on Private Lands	Logging activity presents a key dispersal opportunity for noxious weed seeds. They may attach to tires or tracks of mechanized logging equipment, tires of log trucks, and various other logging-related substrates and be subsequently transported from their source to another geographic vicinity. Logging creates openings during ground disturbance and canopy removal which noxious weeds may colonize. Not using PDFs, such as equipment/vehicle washing, etc., also increases the risk of introducing or spreading noxious weed seed during logging operations.
Motor Vehicle Traffic (including Log Trucks)	Roads on public land are for public use, which results in a plethora of seed-dispersal activities occurring on a daily basis. Private landowners use public roads to haul logs, undertake recreational pursuits, and/or access their properties. This transportation often occurs along BLM-administered roads, which are situated within a checkerboard ownership arrangement. How or when seed detachment occurs is a random event and could take place within feet or miles from the work site/seed source, presenting a high likelihood of detachment on public lands.
Recreational Use	The public often recreates on BLM-administered lands and can spread seed from their residences or other areas to public lands in a variety of ways, including attachment to vehicle tires; recreational equipment; hikers' socks, shoes, or other clothing; fur of domestic animals, etc.
Rural and Urban Development	Because of BLM's checkerboard land ownership, BLM parcels are generally interspersed with private lands, many of which are used for home-sites, businesses, or agricultural endeavors. Rural and Urban Development often involves ground disturbance during building or road construction which creates openings for noxious weeds to occupy. See "Motor Vehicle Traffic" and "Private Land" for additional information about how this affects the spread of noxious weeds from private to public lands.

Activity	Role in Dispersing Noxious Weed Seed
Natural Processes	Wind, seasonal flooding, fire, and migration patterns of birds or animals are a few of the natural processes that contribute to the spread of noxious weeds. Wind, water, or wildlife carry seeds or other plant parts and deposit them at new locations at random intervals. Wildfire removes ground cover and leaves areas open to invasion by noxious weeds if a seed source is nearby.

Environmental Consequences

Effects of Alternative 1 (No Action) on Noxious Weeds

Under the No Action alternative, the BLM would not implement any actions from the proposed Jack-Ash Trail Project that would contribute to an increase in noxious weeds in the Project Area. The BLM would continue to treat existing noxious weed populations under the *Medford District Integrated Weed Management Plan and Environmental Assessment* (EA #OR-110-98-14; USDI 1998) as funding and personnel are available. Noxious weeds would continue to increase unless treated and the risk of new weeds invading the area from ongoing natural processes and from surrounding lands would continue.

Past and present activities in the Project Area that likely contribute to the establishment of noxious weed populations include road, trail, and utility line construction; quarry development and use; timber harvest; farming; grazing; recreation; and urban and residential development. Natural processes such as wind, seasonal flooding, and migration patterns of birds or animals also contribute to the spread of noxious weeds. Noxious weeds have reproductive and life cycle characteristics that allow them to quickly establish after disturbance before native species.

The Project Area currently contains one population of bull thistle, and moderate amounts of cheatgrass, hedge-hog dogtail, and spreading hedge-parsley. Without treatment, they would continue to expand due to ongoing natural processes, including high rates of seed production and establishment and seed spread by animals and wind. Activities on the surrounding private lands create risks of introducing new noxious weed populations. Existing weed populations may also spread onto BLM-administered lands. Weed treatments are planned within and near the proposed trails and trailheads, subject to funding availability.

The No Action alternative would not add cumulative effects to noxious weeds within the Project Area because no actions are proposed that would result in ground disturbance or would be a vector for weed seed or weed parts.

Effects of Alternative 2 (Proposed Action) on Noxious Weeds

Since State-listed (ODA 2016) noxious weeds in or adjacent to ground disturbing activities proposed for the project would be treated prior to implementation and in subsequent years, the Proposed Action would have little effect on State-listed noxious weeds. Noxious weeds and introduced plants would continue to spread where they exist in the Analysis Area as a result of human activities and natural processes (Table D-1). However, the rate at which weeds could potentially spread as a result of these activities cannot be predicted due to the indistinguishable causal effect of other activities and factors listed in Table D-1, and would not be distinguishable from the No Action Alternative.

PDFs include washing tools and equipment prior to moving it on-site and seeding highly disturbed soil outside the trail prism with native grasses or approved seed mix to reduce the potential establishment of noxious weeds. These PDFs are widely accepted and utilized as BMPs in noxious weed control strategies

across the nation (Thompson 2006). Table D-2 delineates the PDFs and their expected implementation results.

Implementing the PDFs that reduce the potential spread of noxious weeds associated with the Proposed Action, and using native species for seeding/planting newly disturbed openings is expected to result in a similar potential of noxious weed expansion as associated with the No Action Alternative.

Table E-2. Project Design Features and Expected Implementation Results

Project Design Feature (PDF)	Result of Implementing PDF
Washing vehicles / equipment	Removes dirt that may contain viable noxious weed seeds, thereby reducing the potential for noxious weed spread
Operating vehicles/equipment during the dry season	Reduces the potential for viable noxious weed seed to be transported and dispersed via mud caked on the undercarriages/tires/tracks of logging equipment.
Seeding and/or planting newly created openings with native seed vegetation.	Introduces native vegetation to the site prior to noxious weed seed recruitment, allowing native plants an advantageous jump-start in reestablishment, which reduces the potential for noxious weed infestation.

Although the *immediate* potential for weed spread would be less with the No Action Alternative than for the Proposed Action, the potential for the spread of existing noxious weeds and the introduction of new species is considered similar for both alternatives, because of the inclusion of PDFs in Alternative 2, and the fact that under the No Action Alternative, populations would continue to establish and spread due to seed transport by vehicular traffic, recreation use, wildlife, and other natural dispersal methods listed in Table D-1. Indirect effects associated with noxious weed population enlargement are similar to those mentioned in the No Action Alternative, and are known to generally include, declines in the palatability or abundance of wildlife and livestock forage (Rice et al. 1997), declines in native plant diversity (Forcella and Harvey 1983, Tyser and Key 1988, and Williams 1997), reductions in the aesthetic value of the landscape, encroachment upon rare plant populations and their habitats, potential reductions in soil stability and subsequent increases in erosion (Lacey et al. 1989), and an overall decline of ecosystem health.

Present and foreseeable future activities in the Project Area that could contribute to the introduction and spread of noxious weeds in the Jack-Ash Trail Project Area are the same as those described under the No Action Alternative. The action proposed in Alternative 2 could potentially introduce or spread noxious weeds in the Project Area, although it is not possible to quantify with any degree of confidence that amount or to distinguish it from the background risk of introduction from ongoing activities. However, the risk is reduced that the Proposed Action would contribute additional cumulative effects to noxious weeds because the BLM implements PDFs and has an on-going program of surveying for and treating noxious weeds in the Resource Area.

Appendix F – Terrestrial Wildlife

On December 21, 2011 a new Special Status Species list went into Effect (IM No. OR-2012-018; USDI 2012b). This new list has two categories, Sensitive and Strategic. According to BLM Special Status Species Management (6840), only Sensitive species are required to be addressed in NEPA documents. All Sensitive species were considered and evaluated for this project, and only those that could be impacted by the action alternatives are discussed in more detail in the EA.

The table below lists the Bureau Sensitive species (including threatened or endangered) that are documented or suspected on lands in the Ashland Resource Area but that are not expected to be affected by the proposed project.

Table F-1. Special Status Species – Jack-Ash Trail Project

Species	Project within RANGE (Y/N)	Project Status Not Present Not Affected Affected	Comments Regarding Status
Birds: Bureau Sensitive			
American peregrine falcon	Y	Not Affected	No nesting habitat (rocky outcroppings or cliffs) has been documented in the Project Area., This species could forage within the Project Area if they nest nearby. Project activities would not affect this species.
bald eagle	Y	Not Affected	There are no known bald eagle nest trees located in the Planning Area. If a nest is located prior to implementing the project, it would be protected under through Project Design Features (Section 2.3), the 1995 RMP guidelines, and the Bald and Golden Eagle Protection Act.
Lewis' woodpecker	Y	Not Present	N/A
purple martin	N	Not Present	N/A
tri-colored blackbird	N	Not Present	N/A
white-headed woodpecker	Y	Not Present	N/A
white-tailed kite	N	Not Present	N/A
Amphibians: Bureau Sensitive			
black salamander	N	Not Affected	Black salamanders have been documented in the vicinity of the Project Area. Removal of cover objects (logs, rocks) may temporarily disturb individuals, but impacts are anticipated to be insignificant as large amounts of habitat for this species occur across the landscape.
yellow legged frog	N	Not Present	N/A

Species	Project within RANGE (Y/N)	Project Status 1/ Not Present 2/ Not Affected 3/ Affected	Comments Regarding Status
Reptiles: Bureau Sensitive			
northwestern pond turtle	Y	Not Affected	Located in the watershed at larger ponds and streams, but not expected to occur in or adjacent to Proposed Action footprint. No anticipated effects.
Mammals : Bureau Sensitive			
fisher	Y	Not Affected	Due to the very small area of forested habitat intersected by the proposed trail construction effects to fisher are anticipated to be minimal. Aside from the trail tread itself, this habitat will continue to function as habitat for fisher in the same way it has prior to trail construction. Trails do not impede movement of fisher through habitat or across the landscape.
gray wolf	Y	Not Affected	Important wolf habitat components for reproduction are denning sites and rendezvous sites. The entire project is outside of any designated Area of Known Wolf Activity.* Communication between U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, and the BLM would occur to determine if any wolf activity is present in the Project Area. Activities would be prohibited within a 1.0 mile radius of active gray wolf dens and rendezvous sites from April 15th through August 31st.
fringed myotis Pacific pallid bat	Y	Not Affected	The fringed myotis and pallid bat are associated with late-successional habitat and suspected to occur in the Project Area. Potential roosting sites, such as snags and large mature trees, important to other bat species will not be affected by the Proposed Action.
Townsend's big-eared bat	Y	Not Affected	Townsend's big-eared bats hibernate in caves and mines during winter (Sherwin et al. 2000). Mine adits in the Project Area will be avoided. Therefore, no effects are anticipated.
Invertebrates : Bureau Sensitive			
Siskiyou Hesperian (snail)	Y	Not Affected	Siskiyou Hersperian snails have been documented in the vicinity of the Project Area. Removal of cover objects (logs, rocks) may temporarily disturb individuals, but impacts are anticipated to be insignificant as large amounts of habitat for this species occur across the landscape.
Chase sideband snail	Y	Not Affected	N/A
Siskiyou short-horned grasshopper	Y	Not Affected	This grasshopper may be present in grassy areas within the Project Area. Adequate amounts of habitat would be retained in the Project Area.

Species	Project within RANGE (Y/N)	Project Status 1/ Not Present 2/ Not Affected 3/ Affected	Comments Regarding Status
Invertebrates : Bureau Sensitive			
western bumblebee	Y	Not Affected	The western bumblebee may be present in meadows in the Project Area. Adequate amounts of habitat would be retained in the Project Area.
Johnson's hairstreak	Y	Not Affected	This butterfly is associated with mistletoe clumps. This habitat will be unaffected by the proposed actions.
Mardon skipper butterfly	N	Not Present	N/A
Oregon shoulderband snail	Y	Not Affected	Oregon Shoulderband snails have been documented in the vicinity of the Project Area. Removal of cover objects (logs, rocks) may temporarily disturb individuals, but impacts are anticipated to be insignificant as large amounts of habitat for this species occur across the landscape.
travelling sideband snail	Y	Not Affected	Traveling Sideband snails have been documented in the vicinity of the Project Area. Removal of cover objects (logs, rocks) may temporarily disturb individuals, but impacts are anticipated to be insignificant as large amounts of habitat for this species occur across the landscape.

Survey & Manage Tracking Form: Wildlife Species Survey and Site Management Summary

Medford District BLM –Ashland Resource Area

Project Name: Jack-Ash Trail

Prepared By: Steve Godwin

Project Type: trail construction

Date: March 22, 2016

Location: T. 38 S., R. 2 W., Sections 33, 34, 35;
T. 39 S., R. 2 W., Sections 2, 3, 11, 12

S&M List Date: 2001 with 2003 Annual Species Review

Survey & Manage Wildlife Species

The Medford District BLM compiled the species list below (Table C-2) from the *2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* with 2003 Annual Species Review and includes those wildlife species whose known or suspected range includes the BLM Medford District according to:

Survey protocol for the Great Grey Owl within the Range of the Northwest Forest Plan v3.0 (Jan. 2004; USDA and USDI 2003a)

Survey Protocols for Amphibians under the Survey & Manage Provision of the Northwest Forest Plan Version 3.0 (Oct. 1999; USDI 1999)

Survey Protocol for the Red Tree Vole Version 3.0 (Nov. 2012; Huff et al. 2012)

Survey Protocol for Survey & Manage Terrestrial Mollusk Species v3.0 (Feb. 2003; USDA and USDI 2003b)

Species listed are Category A and C species, for which pre-disturbance surveys are required. This list also includes any Category D, E, or F species with known sites located within the Jack-Ash Trail Project Area (none).

Table F-2. Survey and Manage Wildlife Species Known or Suspected in the Project Area

Species	S&M Category	Survey Triggers			Survey Results			Site Management
		Within Range of the Species?	Contains Suitable habitat?	Habitat Disturbing*?	Surveys Required?	Survey Date (M/Y)	Sites Known or Found?	
Vertebrates								
Siskiyou Mountains salamander (*Plethodon stormi*, north range)	Off[1]	No	N/A	N/A	No	N/A	N/A	N/A
Great Gray Owl (*Strix nebulosa*)	A	Yes	Yes	No	No	N/A	1	No harvest protection zone
Red Tree Vole (*Arborimus longicaudus*)	C	No	N/A	N/A	No	N/A	N/A	N/A
Mollusks								
Chase Sideband (*Monadenia chaceana*)	B[2]	Yes	Yes	Yes	No	N/A	N/A	N/A
Oregon Shoulderband (*Helminthoglypta hertleini)*	B[2]	Yes	Yes	Yes	No	N/A	N/A	N/A
Evening Fieldslug (Deroceras hesperium)	B[2]	Yes	Yes	No	No	N/A	N/A	N/A

*"Habitat disturbing" and thereby a trigger for surveys as defined in the 2001 ROD S&Gs (p. 22).

N/A = Not Applicable

[1]This species is covered by a Conservation Strategy in the northern part of the species range.

[2] Equivalent-effort pre-disturbance surveys are required for this species.

[3] Suitable habitat for the evening Fieldslug is "associated with wet meadows in forested habitats in a variety of low vegetation, litter and debris; rocks may also be used. Little is known about this species or its habitat. Surveys may be limited to moist surface vegetation and cover objects within 30 m. (98ft.) of perennial wetlands, springs, seeps and riparian areas…" (pg. 41, *Survey Protocol for S&M Terrestrial Mollusk Species v3.0*, 2003). Within the project, suitable habitat is confined to the stream-side areas that are contained within Riparian Reserves in the harvest units. Significant negative affects to the micro-climate of this habitat within the Riparian Reserve will not occur so there is no trigger for surveys. Although, pre-disturbance surveys were conducted in areas outside of the riparian buffers and if this species presence is confirmed, it will receive the appropriate management protection.

[4]Suitable habitat for the Crater Lake tightcoil is "perennially wet situations in mature conifer forests, among rushes, mosses and other surface vegetation or under rocks and woody debris within 10 meters of open water in wetlands, springs, seeps and riparian areas…" (pg. 43, *Survey Protocol for S&M Terrestrial Mollusk Species v3.0*, 2003). Within the project, suitable habitat is confined to the stream-side areas that are contained within Riparian Reserves in the regeneration harvest units. Significant negative affects to the micro-climate of this habitat within the Riparian Reserve will not occur so there is no trigger for surveys.

[5] Pre-disturbance surveys were conducted for terrestrial mollusks. Voucher specimens collected from surveys are currently being identified and sent to a regional malacologist for verification. If a Survey and Manage species is confirmed, the site will receive appropriate management protection and removed from the treatment areas.

Statement of Compliance

The Medford District BLM applied the *2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* with 2003 ASR species list to the Jack-Ash Trail Project, completing the pre-disturbance surveys, and management of known sites required by Survey Protocols and Management Recommendations to comply with the 2001 Record of Decision.

Summary of Survey Results

Project surveys discovered sites for the following Survey and Manage wildlife species:

Great Gray Owls-Known nest site locations would be protected by PDFs.

s:\Steven A. Godwin — March 23, 2016

Steven A. Godwin, Wildlife Biologist — Date

Medford BLM District, Ashland Resource Area

Appendix G – Visual Resources

Introduction

"The BLM has a responsibility to manage the quality of the public lands visual environment and to reduce the visual impact of developed activities" (Visual Resource Inventory, Medford District; USDI 2014b, p. 13). The Medford ROD/RMP established VRM classifications for all BLM-administered lands in the Medford District. The proposed trail corridor and parking areas of the Jack-Ash Trail Project are within Visual Resource Class III. The RMP specifies the visual quality objective as "partially retain the existing character of landscapes". The plan states that the management action and direction are to "manage VRM Class III lands for moderate levels of change to the characteristic landscape. Management activities may attract the attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements of form, line color, texture, and scale found in the predominant natural features of the characteristic landscape (RMP; USDI 1995, p.70).

Methodology

Visual Contrast Rating Process and Key Observation Points

The contrast rating system is a systematic process used by the BLM to analyze potential visual impact of proposed projects and activities. The degree to which a management activity affects the visual quality of a landscape depends on the visual contrast created between a project and the existing landscape. The contrast rating is done from the most critical viewpoints, known as Key Observation Points (KOPs). The actual rating should be completed in the field from the KOP(s). KOPs are usually along commonly traveled routes or at other likely observation points. KOPs may also be located at typical views encountered in representative landscapes, if not covered by critical viewpoints. Factors that should be considered in selecting KOPs are; angle of observation, number of viewers, length of time the project is in view, relative project size, season of use, and light conditions (BLM Visual Resource Management Manual 8431; USDI 1986).

Anderson Butte Rd and BLM Road # 38-2-26 are the only thoroughfares in the Project Area. The section of the proposed Jack-Ash Trail Project that is located at the top of Anderson Butte road adjacent to the quarry is completely obscured by a land mass and was deemed unsuitable as a KOP. The remaining two KOPs are on BLM Road # 38-2-26, where portions of the proposed trail would be visible in limited sections from the road.

KOP #1 - KOP #1 is located on BLM Road # 38-2-26 looking east/SE towards the proposed section of trail that would be approximately 500 meters uphill of the road. This was selected since it's the highest in elevation and closest to the trail project. It also serves as the main vantage point for the project.

KOP #2 - KOP #2 is located on BLM Road # 38-2-26 looking east towards the proposed section of trail that would join the road and continue uphill. This was selected since the proposed project would intersect with the road at this point.

Environmental Consequences

The Jack-Ash Trail Project would meet the management guidelines for VRM III and would result in low levels of change that would largely retain the existing character of the landscape. Trail sections utilizing existing roads, trails, and parking areas would not change the visual characteristic from existing conditions. Proposed activities in these sections would remain within the existing footprint. The linear

segments proposed for construction may be seen by the casual observer against the backdrop of the meadows on the upper slopes of Anderson Butte, but it would not dominate the view. Casual viewers passing by in automobiles are unlikely to see the trail unless they know it is there. Although segments of the trail would be visible, the size of the trail's footprint is small compared to the scale of the surrounding landscape, and is similar to lines from existing roads, power lines, quarries, and other manmade features. The visual contrast rating found that the trail would be most visible in the first two years after construction, but would become less visible as the vegetation fills in and the trail edges soften with time. After the first growing season, grasses and other vegetation would re-grow such that the trail would be mostly hidden and would be a minor component of the view of the meadow slopes. Visual opportunities for recreational users would be enhanced by construction of these new segments, as users would be afforded sweeping vistas of the Little Applegate and lands to the west and south.

View from Key Observation Point (KOP) #1 from BLM Road # 38-2-26 looking east and southeast. The proposed construction for Segment #1 would be located in the noted area.

Appendix H – Acronyms & Glossary

AMA - Adaptive Management Area
APE - Area of Potential Effect
ASR - Annual Species Reviews
BA - Biological Assessment
BLM - Bureau of Land Management
BMP - Best Management Practices
CEQ - Council on Environmental Quality
CFR - Code of Federal Regulations
CHU - Critical Habitat Unit
EA - Environmental Assessment
EIS - Environmental Impact Statement
ERMA - extensive recreation management areas
ESA - Endangered Species Act
FMP - fire management plan
GIS - Geographic Information Systems
IDT - interdisciplinary team
KOP - Key Observation Points
NEPA - National Environmental Policy Act
NOAA - National Oceanographic and Atmospheric Administration
NRF - nesting, roosting, forage
NSO - northern spotted owl
O&C - Oregon and California
ODA - Oregon Department of Agriculture
OHV - off-highway vehicle
PCNST - Pacific Crest National Scenic Trail
PDF - Project Design Features
RMP - Resource Management Plan
ROD - Record of Decision
SCORP - Statewide Comprehensive Outdoor Recreation Plan
SEIS - Supplemental Environmental Impact Statement
SMDT - Sterling Mine Ditch Trail
SRMA - special resource management areas
SUTA - Siskiyou Uplands Trail Association
USFWS - United States Fish and Wildlife Service
VRM - Visual Resource Management
WA - watershed analysis

Home Range Circle is an approximation of the median home range size used by spotted owls. The Medford District uses the median home range estimated for southwestern Oregon of 2,895 acres or a circle with a radius of 1.2 miles in the West Cascades province and 3,400 acres or a circle with a radius of 1.3 miles for the Klamath Province (Thomas et al. 1990; Courtney et al. 2004). The Home Range Circle provides a coarse but useful analogue of the median home range for northern spotted owl (Lehmkuhl and Raphael 1993; Raphael et al. 1996). Although it provides an imprecise estimate of actual home ranges, the home range circle approach has been used to show that stand age/structure, patch size, and configuration within the circle influences the likelihood of occupancy. When less than 40 to 60 percent of the circle is in NRF habitat, the likelihood of spotted owl presence is lower, and survival and reproduction may be reduced (Thomas et al. 1990, Bart and Forsman 1992, Bart 1995, Dugger et al. 2005). Therefore, the home range circle is a useful analytical scale for the purpose of quantifying habitat and the impact to owl sites from proposed habitat modification. The provincial home ranges of several owl pairs may overlap.

Core Area Circle has a radius that captures the approximate core use area, defined as the area around the nest tree that receives disproportionate use (Bingham and Noon 1997). The Medford District uses a 0.5-mile radius (≈500 acre) circle to approximate the core area. Research has indicated that the quantity and configuration of "older forest" (analogous to NRF habitat) provides a valid inference into the likelihood of occupancy (Hunter et al. 1995), survival, and reproduction (Franklin et al. 2000, Zabel et al. 2003, Olson et al. 2004, Dugger et al. 2005, and Dugger et al. 2011). Generally survival and reproduction are supported when there is between 40 and 60 percent older forest within the core (Dugger et al. 2005), but local conditions and possibly pair experience, contribute to large variance in actual amounts for individual owls. The amount of habitat within an approximate 0.5-mile radius provides reliable predictor of occupancy, and the quantity and configuration have been shown to provide reasonable inferences into survival and reproduction. Core areas represent the areas that are defended by territorial owls and generally do not overlap the core areas of other owl pairs (Wagner and Anthony 1998, Dugger et al. 2005, Zabel et al. 2003, and Bingham and Noon 1997).

Nest Patch is the 300-meter radius (70 acres) around a known or likely nest site and is included in the core and home range areas. Nest area arrangement and nest patch size have been shown to be an important attribute for site selection by spotted owls (Swindle et al. 1997, Perkins et al. 2000; Miller et al. 1989, and Meyer et al. 1998). Models developed by Swindle et al. (1997) and Perkins et al. (2000) showed that the 200- to 300-meter radius (and sometimes greater), encompassing up to approximately 70 acres, around a nest is important to spotted owls. The nest patch size also represents key areas used by juveniles prior to dispersal. Miller et al. (1989) found that the extent of forested area used by juvenile owls prior to dispersal averaged approximately 70 acres.

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