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January 2003**

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This report documents the Forest-Wide Roads Analysis for the Ochoco and Deschutes National Forests and the Crooked River National Grassland. The purpose of this analysis is to provide Line Officers with information necessary to identify and manage a safe, efficient, environmentally sound road system that is responsive to public and agency needs. The road analysis document provides a recommended strategy for managing the road system, but is NOT considered a decision document.

As required by the final road management policy published on January 12, 2001, this analysis followed the six step process outlined in the report ***Roads Analysis: Informing Decisions About Managing the National Forest Transportation System (USDA Forest Service, 1999, Misc. Report FS-643)***.

This forest-wide analysis focused on the main road system of the two forests

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and grassland. Roads selected for analysis at this scale include all currently designated Highway Safety Act roads (maintenance level 3, 4, and 5), plus any maintenance level 1 or 2 roads that have a functional classification of arterial or collector. Main roads from other jurisdictions such as State, County, and BLM were also considered in the analysis if they are within the National Forests or connect forest roads to other adjacent transportation networks. The remaining maintenance level 1 and 2 local roads under Forest Service jurisdiction will be analyzed in the future, at the watershed or project scale, as project opportunities and budgets allow.

Following the six-step analysis process, the existing condition of the road system as related to access needs, current uses, and resource concerns is described and documented. Using a set of screening questions, the interdisciplinary team identified important road-related issues that were used to drive the analysis. A set of rating factors were developed and used to compare the relative value of the road system in terms of access needed and current uses with any associated problems or risks to important resource values such as wildlife, water, fish, and vegetation. The benefit/risk assessment led to some recommended changes to road maintenance and management strategies. Some specific road improvement opportunities were also identified in the process.

In addition to describing the benefit/risk rating assessment discussed above, chapter 4 of the road analysis document provides a summary of the important access issues and resource concerns found within each of the 5th field watersheds in the analysis area. The purpose of the watershed summaries is to provide ID teams working on project or watershed scale road analyses, or other NEPA documents, a quick reference for important road related issues and opportunities identified at the broader forest scale.

The final chapter of the road analysis

document summarizes the opportunities and recommendations for altering existing maintenance activities and management plans to better meet the current access needs identified through this analysis. Chapter 5 also provides guidance and suggestions for conducting finer scale road analyses at the watershed and project levels.

KEY FINDINGS AND RECOMMENDATIONS

1. **Current maintenance levels do not match access needs.** The current road network provides adequate access for Public, Private, and Administrative needs; however this Roads Analysis indicates a need to adjust maintenance levels on some roads to better serve our road users and to minimize adverse effects to resources.

Recommendations

- o Change objective maintenance levels to those proposed in the Road Management Recommendation Tables in the Appendix.
- o Move roads from existing operational maintenance levels to proposed objective maintenance levels as opportunities and budgets allow.
- o Adjust the Highway Safety Act road system as proposed on Maps 5 and 7 in the Appendix.
- o Update Road Management Objectives for all roads in the analysis to reflect changes listed above.
- o Update road data in INFRA and GIS databases.

2. **Current maintenance budgets are insufficient to meet current maintenance needs.** Recent forest-wide condition surveys indicate that our current road maintenance funding only meets approximately 30% of the annual maintenance needs on the Ochoco and Deschutes National Forests. The deferred maintenance backlog for both forests exceeds 70 million dollars and will continue to grow until additional funds can be found.

Recommendations

- o Seek additional funding for road maintenance through regular appropriations.

- Seek additional funding sources and methods for rock replacement on aggregate surfaced roads.
- Seek new and additional funding sources for road maintenance and improvements through any available funding programs such as Capital Investment Programs, Payments to Counties, Forest Highway Programs, etc.
- Develop the Public Forest Service Road System as proposed on Maps 14 and 15 in the Appendix.

3. **The current road system poses risks to water quality/ quantity and fish habitat.** Many roads were constructed in close proximity to streams or cross streams and contribute to sediment movement. Many culverts throughout the project area are too small (undersized) and are barriers to fish passage. The current road system has increased the hydrologic network causing water to flow more quickly from most 5th field watersheds.

Recommendations

- Check for proper culvert sizes on all stream crossings.
- Check roads for adequate cross drainage during project analysis.
- Evaluate surfacing needs on roads with high traffic volumes.
- Adjust alignment away from riparian areas, as opportunities arise.
- Repair fill and cut slope failures in a timely manner, especially those located within landslide terrain.
- Seek additional funding for road maintenance.

4. **The current road system and its uses pose risks to wildlife and wildlife habitats.** Many roads were constructed in close proximity to streams or cross streams. Most areas outside of Wildernesses and Roadless Areas are well roaded. Many roads and land areas see extensive use year round by passenger vehicles and off-highway-vehicles (OHV), including over-snow vehicles. These factors often result in collisions, harassment, and displacement of animals, as well as the roads acting as a barriers to movement. In addition, the roads themselves often result in habitat loss and fragmentation.

Recommendations

- Relocate roads away from sensitive wildlife

areas where feasible and when opportunities arise

- Review and update forest-wide travel and access management policies for motorized traffic both on and off roads.
- Minimize wildlife harassment by enforcing existing travel management policies.
- Ensure existing seasonal restrictions are effective.
- Implement additional seasonal restrictions where needed.

5. **The road system and its uses pose risks to plants and plant habitats.** Some roads are affecting unique habitats and plant communities, including TES, and riparian and wetland habitats. In addition, some roads also facilitate access to gathering sites by Native Americans.

Recommendations

- Continue to treat, and monitor for noxious weed infestations along all roads.
- Relocate roads away from sensitive plant habitats where feasible and as opportunities arise.
- Review and update forest-wide travel and access management policies for motorized traffic both on and off roads.
- Minimize off-road ground disturbance by OHV's by enforcing existing travel management policies.

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Chapter 1 - Introduction

The Ochoco and Deschutes National Forests and the Crooked River National Grassland have developed this "forest level" roads analysis. The purpose of this analysis is to provide Line Officers with information necessary to identify a road system that is safe and responsive to public and agency needs, is environmentally sound, affordable, and efficient to manage. The area considered in the analysis is shown on Map IV-1, Vicinity Map, in the Appendices-Volume IV.

This analysis identifies opportunities for increasing benefits of our road systems and reducing existing problems and risks. It provides a framework for examining important issues and developing relevant information before managers enter into formal decision-making processes under the National Forest Management Act (NFMA) and National Environmental Policy Act (NEPA) that change characteristics and uses of national forest road networks.

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This analysis does not make land management decisions nor allocate land for specific purposes since both require NFMA and NEPA based forest and project planning. It follows a process, similar to a watershed analysis, that is intended to produce a management strategy **NOT** a decision document.

BACKGROUND

On January 12, 2001 the Department of Agriculture published its final rule and policy regarding the national forest transportation system. The road rule and policy, as they have become known, are intended to ensure that the National Forest Road System meets current and future land and resource management objectives; provides for public uses of National Forest System lands; allows for economical and efficient management; and, minimizes and begins to reverse adverse ecological impacts associated with our current transportation system. The policy requires that a forest-wide (mid-scale) roads analysis be completed by 1/12/2003. In addition, roads analysis at finer scales (watershed and/or project level) will likely be needed to support site-specific transportation system decisions in the future.

ROAD ANALYSIS PROCESS

The Road Policy requires the use of a science-based road analysis process to identify road needs, issues, and opportunities and to actively engage the public and other state, federal, local, and tribal partners in the analysis. The document ***Roads Analysis: Informing Decisions About Managing the National Forest Transportation System (USDA Forest Service, 1999, Misc. Report FS-643)*** was developed and published in 1999 to provide guidance and direction in conducting the analysis. The process consists of the following six steps:

- Step 1: Setting up the analysis
- Step 2: Describing the situation
- Step 3: Identifying the issues
- Step 4: Assessing benefits, problems, and risks
- Step 5: Describing opportunities and setting priorities

Step 6: Reporting

The product of the roads analysis process is a report that documents the information and analyses used to help identify the optimum road system needed for safe and efficient travel and for the administration, utilization, and protection of National Forest System lands.

Again, roads analysis is **NOT** a decision-making process. Rather it is designed to provide an assessment of the existing forest road system from a landscape perspective. It highlights problem areas and opportunities in the road system so that Forest Service land managers can make well-informed management decisions regarding the transportation system on national forest lands.

ANALYSIS PLAN

The six-step process described above is meant to be an integrated, science-based approach to transportation planning that considers ecological, social, and economic issues. Line-officer participation is essential to completing the process. As such, the Forest Supervisors for the two forests assembled an interdisciplinary team (IDT) of resource specialists to conduct the analysis, and established a Board of Directors, made up of the Forest Planning Staff Leader, the Forest Natural Resources Staff Leader, and the Forest Engineering Staff Leader, to help guide the process. The Board of Directors and the IDT worked together to develop the analysis plan that established the scope and scale of the analysis, identified project objectives, established information needs, and determined how best to invoke public participation and involvement in the process. Each of these elements of the Analysis Plan is further described in the sections that follow.

SCOPE AND SCALE OF THE ANALYSIS

This forest-scale analysis focused on the main roads or "backbone" of the transportation system for the two Forests and Grassland, including the interrelationship with state, county, tribal, and other federal agency transportation facilities. This includes all arterial and collector roads on the forests, as well as all other roads open and maintained for passenger car travel, (i.e., maintenance level 3 through 5 roads, also referred to as Highway Safety Act roads). The intensive analysis was limited to roads under Forest Service jurisdiction, but the use and effects of roads under other jurisdictions were considered where those roads ran through the forests or connected forest roads to other main transportation outlets and facilities.

OBJECTIVES

The goal of this analysis is to provide line officers with critical information to identify and manage road systems that are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal negative ecological effects on the land, and are in balance with available funding for needed management actions.

The objectives of this analysis are to review the main road systems of the two forests and grassland to:

- Determine consistency of current road management practices with Forest Plan Standards and Guidelines
- Establish the context, provide guidance, and define analysis needs at finer scales
- Compare current maintenance budgets with existing and future maintenance needs
- Identify existing parts of the road system that are essential for public access and resource management
- Identify where additions to the existing road system are necessary for public access and resource management
- Identify where changes to existing road management objectives are warranted
- Identify major environmental risk factors for individual roads
- Identify ecological, social, financial, and economic issues pertinent to future decisions about the transportation system
- Identify potential maintenance and restoration needs for future project consideration

INFORMATION NEEDS

This Roads Analysis project was one of eight projects selected for study under a National GIS Core Data Pilot Program in 2001 (See Appendices-Volume I, Appendix I-1, GIS Core Data Pilot Program Final Regional Report, for more information). As part of the pilot program, the project team conducted an intensive Information Needs Assessment (INA). The BLM actively participated in the INA in an attempt to establish the same definitions and data standards for transportation planning across all of Central Oregon. The INA helped determine what information was available, what additional information was needed to address the key questions and issues, and what resources, (time, people, skills, etc.), were needed to conduct the forest-scale roads analysis (See Appendices-Volume I, Appendix I-2, Roads Analysis INA Summary Report for more information).

This analysis was based on the best scientific information available at the time of writing. The final report is considered to be a "living" document and will be updated and revised as new and additional data become available and conditions warrant.

PUBLIC INVOLVEMENT

It was decided early on in the process to reach the individuals, agencies, and organizations that may be interested in participating in this Roads Analysis process; or may have specific issues, concerns, or recommendations regarding specific roads. As a result, an intensive Public Involvement Framework and Communication Plan

were developed. As part of this effort a letter describing the Roads Analysis Process and how to get involved was sent to all members of the public on our forest-wide mailing list. A second letter, tailored to Federal, State, and Local agencies, and organizations, was also circulated. In addition, individual contacts were made with Indian tribes, environmental organizations, forest products industries, and county road masters, to name a few. An article also appeared in the Schedule of Projects, which is circulated quarterly to both the Ochoco and Deschutes National Forest mailing lists and to the Prineville District of the BLM.

Once this Roads Analysis Report is completed we will again ask for feedback on its content and make adjustments as needed.

ANALYSIS OVERVIEW

The following is a brief overview of how the six-step process was followed by the interdisciplinary team for this analysis. The first step was discussed in detail above and the remaining four steps will be discussed in detail in the each of the following chapters in this document.

Step 1 - Setting up the analysis. The interdisciplinary team and the Board of Directors worked together to establish the scope and scale of the analysis, identified project objectives, established information needs, and determined public involvement procedures.

Step 2 - Describing the situation. The interdisciplinary team described the existing road system in relation to current forest plan direction. Products from this step include: maps of the existing road system, descriptions of access needs, and information about physical, biological, social, cultural, economic, and political conditions associated with the road system.

Step 3 - Identifying issues. The interdisciplinary team identified important road-related issues and the information needed to address these concerns. The interdisciplinary team also determined data needs associated with analyzing the road system in the context of important issues, for both existing and future roads. The output from this step includes a summary of key road-related issues and a list of screening questions used to evaluate them.

Step 4 - Assessing benefits, problems, and risks. After identifying the important issues and associated analytical questions, the interdisciplinary team reviewed the major uses and effects of the road system including the environmental, social, and economic effects of the existing road system, and the values and sensitivities associated with unroaded areas.

Step 5 - Describing opportunities and setting priorities. The interdisciplinary team identified management opportunities, established priorities, and formulated technical recommendations that respond to the issues and effects.

Step 6 - Reporting. The interdisciplinary team produced this report and maps that portray management opportunities and supporting

information important for making decisions about the future characteristics of the road system. This information sets the context for developing proposed actions to improve the road system and may be used for future amendments and revisions of forest plans.

INTERDISCIPLINARY TEAM

The following resource specialists made up the core interdisciplinary team who conducted the analysis and developed this report. It is important to keep in mind that this project encompasses two National Forests, a National Grassland, and a significant portion of a BLM Resource Area. IDT members were responsible for the entire analysis area, not just their individual Forest.

Member	Responsibilities
Paul Cuddy	Team Leader/Economic/Social
Elly Young	Co-Team Leader/GIS Coordinator
Rick Collins	Transportation/Financial
Rodd Kubitza	Transportation
Kathy Farrell/Les Moscoso	Writer/Editor
Jim Minogue	GIS Analyst
Larry Chitwood/Carrie Gordon	Geology/Soils
Dan Rife	Aquatic/Fisheries
Marv Lang	Recreation
Dana Butler	Hydrology
Kyrie Murphy	Public Affairs
Shane Jeffries	Wildlife
Dave Owens	Fire/Fuels
Katie Grenier	Botany/Weeds
Terry Holtzapple	Traditional uses/Archeology

In addition to the core IDT members, the resource specialists listed below worked directly with the team and played a significant role in completing this analysis. Also, there were many occasions when the IDT met with other district staff members and resource specialists to seek input and guidance at different phases of the analysis. So there are many other individuals who are not listed that also played key roles in completing this project.

Member	Responsibilities
Jim David	Soils
Barb Franano/Rich Vacirca	Fisheries
Jim Seymour	Hydrology
Bill Johnson/Tom Mountz	Fire/Fuels

Dave Zalunardo/Heather Bernier/Monte Kuk	Wildlife
Laurel Skelton/Barb Smith	Recreation
Paul Claeysens	Traditional uses/Archeology
Deb Mafera	Botany/Weeds
Walt Miller	Landline
Brenda Warner	Special Forest Products
Bob Rock	Range
Phil Horton/Ray Horgen/Steve Bigby/Ken Kittrell/Dale Putman	Transportation

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The analysis area discussed in this document includes the Deschutes National Forest, the Ochoco National Forest, the Crooked River National Grassland, and portions of the Prineville District of the BLM. Some segments of roads from other jurisdictions, such as state, county, and private, are also considered in this analysis. The study area includes over 12,000 total miles of roads; however, the in-depth analysis is limited to approximately 2,500 miles of arterial and collector roads and 100 miles of high standard local roads under the jurisdiction of the National Forests. (See Maps IV-2 and IV-3 in the Appendices-Volume IV for a description of the roads included in the analysis.)

The arterial and collector roads, and the high standard locals were selected for in-depth study because they provide primary access to and through the National Forests and are best suited for analyzing the broad scale issues that are addressed through a forest-wide

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Forest

Deschutes National Forest

1001 SW Emkay Drive
Bend, OR 97702

(541) 383-5300

Ochoco National Forest

3160 N.E. 3rd Street
Prineville, OR 97754

(541) 416-6500

**Crooked River National
Grassland**

813 S.W. Hwy. 97
Madras, OR 97741

(541) 475-9272



roads analysis. The remaining "local" roads will be analyzed, in-depth, in the future through site-specific watershed and project scale roads analysis.

Management direction for the transportation system is detailed in the Ochoco and Deschutes Land and Resource Management Plans, the Northwest Forest Plan, the Inland Native Fish Strategy (Infish), and the Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PacFish). Forest Service transportation management policy is outlined under Title 7700 of the Forest Service Manual (FSM) (USDA 1994).

The following describes the existing condition by resource area for the Deschutes and Ochoco National Forests, as well as the Crooked River National Grassland. Descriptions are based on how each resource area is affected by the road system in terms of condition of roads themselves and use of the roads.

ROADS

Ochoco National Forest and Crooked River National Grassland

The Ochoco National Forest and Crooked River National Grassland include more than 3,200 miles of Forest Service roads. Most of the transportation system on the Ochoco National Forest has been developed primarily on the more gentle slopes found on the southern portions of the Forest. This part of the Forest, (approximately two-thirds of the total area), has the transportation system needed to provide access for most present and future management activities. The northern one-third of the Ochoco National Forest has a less extensive transportation system and more difficult terrain for road construction.

State highways and county roads provide primary access to the Crooked River National Grassland. These roads are suitable for passenger car use. The remainder of the transportation system on the Grassland is composed of roads constructed by previous land

owners (prior to 1960, the area was composed of homesteaded lands). These roads were designated as Public Usage Roads by Jefferson County. Under this designation, the county assures that the roads remain open to public use. However, the roads are to be maintained by the public that uses them. Under terms of a cooperative agreement with Jefferson County, the Forest Service maintains approximately 84 miles of these roads for public and administrative use. These roads are normally suitable only for high clearance vehicle use and are impassable or closed seasonally during wet weather. The Grassland has more roads than are necessary for management, but the Public Usage designation prohibits closure. The open, flat terrain generally makes road closure ineffective.

There are 3,257 miles of Forest Service Roads on the Ochoco National Forest and Crooked River National Grassland transportation inventory. Seven percent of the road system is in the Maintenance Level 3, 4, and 5 categories, (maintained for standard passenger cars and subject to the Highway Safety Act). Maintenance Level 2, (maintained for high clearance vehicles), accounts for 62% of the road system, and 31% of roads are currently closed to vehicular traffic, (Maintenance Level 1).

Approximately 695 miles, or 20 percent of the total road system, are arterial and collector roads. The remaining 2,564 miles (80 percent) of roads are local roads that are generally designated for high clearance access.

Table 2-1: Miles of Forest Service Roads by Maintenance Level for the Ochoco National Forest.

Maintenance Level	Arterial	Collector	Local	Miles
1 - Basic Custodial Care (Closed Roads)	0	9	1,003	1,012
2 - Maintained for High Clearance Vehicles	52	412	1,549	2,013
3 - Maintained Suitable for Passenger Cars, Low User Comfort, Aggregate Surface	84	40	4	127
4 - Maintained For Passenger Cars, Moderate Degree of User Comfort	39	2	8	48
5 - High Standard Paved Passenger Car Road, High degree of User Comfort	55	2	0	57
TOTAL	230	465	2,564	3,257

**Forest Plan Direction
(Ochoco National Forest and Crooked River National
Grassland Land and Resource Management Plan)**

Goal: The overriding goal of the Ochoco Forest Plan for management of the transportation system is to plan, design, operate, and maintain a safe and economical transportation system providing efficient access for the movement of people and materials involved in the use and protection of National Forest lands.

Desired Future Condition: The principal access roads will be readily identifiable; they will have paved or gravel surfaces and will be suitable for passenger car use. Signs will assist the traveler in finding their destination. The other roads will appear rough or primitive. Some roads will be closed with gates or signs.

Resource Objectives: Transportation systems will be planned to support resource activities in the management areas and to serve multiple resource needs rather than individual project proposals. Manage traffic as needed to control access due to structural limitations of the road, safety, or to meet resource objectives, such as (ORV) travel management needs. Traffic safety will exist for all roads on the transportation system. Safety of traffic using Forest roads will be ensured through restrictions. The full range of traffic management strategies will be used including prohibiting traffic to unrestricted use by all vehicle types. Use signs to inform the public of the reason for restrictions to the transportation system. During commercial hauling activities, public access will generally be discouraged or prohibited on single user local access roads. All system roads would be maintained to at least the basic custodial care required to maintain drainage, protect road investment, and minimize damage to adjacent land and resources. Basic road maintenance would occur at intervals approximately every 5 years, higher levels may be chosen to reflect greater use or for resource protection.

The miles of roads open to passenger vehicles (Mtc. Levels 3-5) and high clearance vehicles (Mtc. Level 2), should be 67% at the end of the first decade and decreasing to 59% by the end of the fifth decade. The Forest Plan objective for roads Open and Maintained for Passenger Car use at the end of the first decade is 844. The forest currently has only 232 miles in this category, primarily due to declining maintenance budgets that have lead to a reduction of road miles maintained.

Standards and Guidelines: Specific direction concerning construction, reconstruction, operational management and environmental protection requirements for the Forest road system are described in the Forest-wide Standards and Guidelines section (pages 4-224 through 4-227), as well as in the Management Area Prescriptions section (pages 4-228 through 4-235) in the Ochoco National Forest Land and Resource Management Plan; and in the Grassland-wide Standards and Guidelines section (pages 4-108 through 4-111), as well as in the Management Area Prescriptions section (pages 4-111 through 4-118) in the Crooked River National Grassland Land and Resource Management Plan. Additional standards and guidelines affecting road management are found in the Northwest Forest Plan, and the PacFish and Infish documents.

Deschutes National Forest

The Deschutes National Forest transportation system includes over 8,500 miles of Forest Service roads. A primary road system was developed throughout the forest to provide essential access to communities and State or County highways. A secondary system was developed off of the primary system to meet most other inter-forest land management needs. Most of the forest has gentle terrain that

has made road construction inexpensive and convenient; thus, the forest has been roaded extensively. The gentle terrain of the Deschutes National Forest also makes effective road closures difficult.

There are 8,517 miles of Forest Service Roads in the forest transportation inventory. Five percent of the road system is in the Maintenance Level 3, 4, and 5 categories, (maintained for standard passenger cars and subject to the Highway Safety Act). Maintenance Level 2, (maintained for high clearance vehicles), accounts for 84% of the road system, and 11% of roads are currently closed to vehicular traffic, (Maintenance Level 1).

Approximately 21 % (1,788 miles), of the total system are arterial and collector roads. Only 363 miles of those are maintained for passenger car travel. The remaining 79% of the system (6,729 miles) are designated as local roads of which only 87 miles are maintained for passenger car use.

Table 2-2: Miles of Forest Service Roads by Maintenance Level for the Deschutes National Forest.

Maintenance Level	Arterial	Collector	Local	Miles
1 - Basic Custodial Care (Closed Roads)	0	13	923	936
2 - Maintained for High Clearance Vehicles	75	1,338	5,719	7,132
3 - Maintained Suitable for Passenger Cars, Low User Comfort, Aggregate Surface	101	100	67	268
4 - Maintained For Passenger Cars, Moderate Degree of User Comfort	86	21	19	126
5 - High Standard Paved Passenger Car Road, High degree of User Comfort	52	3	1	56
TOTAL	314	1,474	6,729	8,517

Forest Plan Direction (Deschutes National Forest Land and Resource Management Plan - 1990)

Goal: The overriding goal of the Deschutes Forest Plan for management of the transportation system is to plan, design, operate, and maintain a safe and economical transportation system providing efficient access for the movement of people and materials involved in the use and protection of National Forest lands.

Desired Future Condition: Access to and within the Forest is well balanced between travel needs and the environment. The planned increase or decrease in recreation activities are coordinated with road and trail construction, reconstruction, and management. Roads and trails are maintained in safe conditions consistent with the expected user; the signing is accurate and informative.

Roads to most recreation sites are paved or gravel surfaced in a conditions suitable for passenger cars. Many of these roads are also constructed with adequate alignment, grades, and structural capacity

to safely allow the hauling of commercial products. The quality of scenic views has been maintained through timber management and road maintenance operations. The Cascade Lakes Highway continues to be maintained and improved to the standards of a National Scenic Byway.

Some of the road system has been closed for the protection of wildlife habitat or to reduce erosion; however, the majority of the mileage remains open for ongoing timber management activities or for general public access such as hunting, fishing, pleasure driving, and fuel wood gathering. These lower standard roads are available for use by the more experienced drivers. Maps, signing and primitive conditions at the beginning of the roads managed for high clearance vehicles give traveler's advice on what to expect. Unexpected road conditions are adequately signed.

Resource Objectives: The development, maintenance, and management of the Forest development road system will be responsive to resource management objectives. Many road-related activities will occur in support of the timber management program, with additional activities undertaken to facilitate recreational use, forest administration, and resource protection.

The miles of roads open to passenger vehicles (Mtc. Levels 3-5) and high clearance vehicles (Mtc. Level 2), should be 73% at the end of the first decade. The Deschutes is currently at 90%. The Forest Plan objective for roads Open and Maintained for Passenger Car use at the end of the first decade is 850 miles and should increase to 1000 miles by the end of the third decade. The forest currently has only 450 miles in this category, primarily due to declining maintenance budgets that have lead to a reduction of road miles maintained.

Standards and Guidelines: Specific direction concerning construction, reconstruction, operational management and environmental protection requirements for the Forest road system are described in the Forest-wide Standards and Guidelines section (pages 72-73), as well as throughout the Management Area Prescriptions section in Chapter 4 of the Deschutes National Forest Land and Resource Management Plan. Additional standards and guidelines affecting road management are found in the Northwest Forest Plan, and the PacFish and Infish documents.

Roads of Issue: Four roads within the forest-wide roads analysis have been identified as "roads of issue" in the Deschutes LMRP. They are the Waldo Lake Road (FDR 4290), the Windigo Pass Road (FDR 60), the Todd Lake Road (4600370), and the Irish-Taylor Road (4600600). Specific management direction outlined for each of these roads is as follows:

Waldo Lake Road - Road 4290 provides a connecting link between the Cascade Lakes Highway on the Deschutes National Forest and the Waldo Lake Recreation Facilities on the Willamette National Forest. The Forest Plan identifies an opportunity to enhance recreation on both of these forests by improving this connecting route and adjacent recreational facilities. However, the need to improve and pave the road must be driven by an analysis of future recreation opportunities and not merely by a desire to provide an

additional travel route between Bend and Eugene. Until the analysis is done, the road between Clover Meadow and Waldo Lake will be maintained as a single-lane gravel road. This road will be closed to all commercial haul, and not be plowed for winter use.

Windigo Pass Road - Road 60 provides a connecting link between the Crescent Lake areas on the Deschutes National Forest to the Oregon Cascades Recreation Area on the Umpqua National Forest. Forest Plan direction is to manage this road at its current design and maintenance standards for the foreseeable future. This road is left unplowed and maintained as a snowmobile route in the winter. The road may be improved in the future to accommodate increased traffic demands. However, any future upgrading of this road cannot be undertaken until further NEPA analysis and coordination with the Umpqua National Forest is completed.

Todd Lake Road (FS road 4600370) - Maintain for passenger cars, at low speed, between Hwy 46 and Road 4600380. Maintain for high clearance vehicles only from road 4600380 to Three Creeks Lake.

Irish-Taylor Road (FS road 4636) - Maintain for high clearance vehicles only at the current standard.

Road System Classifications (Ochoco & Deschutes NF's)

There are several road system classifications either in use today, or proposed for use, by the Forest Service that are important to any discussions about roads at the forest scale. These include the Highway Safety Act road system, the Primary/Secondary road system, the Forest Highway road system, the Public Forest Service Road system, and the unclassified road system. These road system classifications are briefly discussed below.

Highway Safety Act Road System

Forest Service maintenance level 3, 4, and 5 roads are subject to the Highway Safety Act of 1966. The Forest Service maintains a Memorandum of Understanding with the Federal Highway Administration requiring that certain safety standards from the Highway Safety Act be met on all roads "open to public travel", as defined in the MOU. Maintenance level 3-5 roads are given this designation because they are generally available and maintained for low-clearance passenger car use. The present Highway Safety Act Road System includes 232 miles on the Ochoco National Forest and 449 miles on the Deschutes National Forest. (The HSA road systems for the two forests are displayed on Maps IV-4 and IV-6 in the Appendices-Volume IV.)

Primary/Secondary Road System

The primary/secondary road system was identified for both forests through a forest-wide Access and Travel Management (ATM) analysis between 1995 and 1996. These roads provide the key travel routes

needed for long-term management of the National Forest. They provide vital linkages to local communities, State and County Highways, private land ownership as well as furnishing inter-forest connections to trailheads and major recreation sites. The Ochoco National Forest identified 686 miles of these roads, and the Deschutes identified 2,667 miles for the primary/secondary system.

The remaining roads not designated as primary/secondary ("other roads") are generally local routes whose long-term status will be analyzed at the watershed or project scale. These routes will be considered for including as secondary routes, or as candidates for reduction of maintenance standards or decommissioning.

The primary/secondary road system is summarized for each forest in the following tables and displayed on Maps IV-8 and IV-10 in the Appendices-Volume IV.

Table 2-3: Primary and Secondary Road System for the Ochoco National Forest.

Access and Travel Management Designation	Miles
Primary (High standard through-routes maintained for standard passenger cars).	270
Secondary (key inter-forest connections maintained for standard passenger cars).	226
Secondary (key inter-forest connections maintained for high clearance vehicles).	190
Other (Candidates for review under watershed analysis for reduction of maintenance standards or decommissioning).	2,580

Table 2-4: Primary and Secondary Road System for the Deschutes National Forest.

Access and Travel Management Designation	Miles
Primary (High standard through-routes maintained for standard passenger cars)	399
Secondary (key inter-forest connections maintained for high clearance vehicles)	2,268
Other (Candidates for review under area watershed analysis for reduction of maintenance standards or decommissioning).	5,873

Forest Highway Road System

The Forest Highway Program is a federal program administered by the Federal Highway Administration with an objective of constructing and improving roads that connect National Forests to the main state transportation network. These routes may be state, county, or Forest Service roads that provide access to and through the National Forests. Designated Forest Highways qualify for federal funding for both improvements and enhancements under the Transportation Equity Act for the 21st Century (TEA21). Forest Highway funding can be used for planning, design, and construction work on designated routes as well as for other enhancement work along the routes such

as parking areas, interpretive sites, bicycle lanes, etc. Tables 2-5 and 2-6 below lists the roads designated as Forest Highways within the analysis area; they are also displayed on Maps IV-12 and IV-13 in the Appendices-Volume IV.

Table 2-5: Forest Highway Road System for the Deschutes National Forest

FH #	Other #	FH Name	Length	County(s)
19	US 97	Dalles/California Highway	73	Deschutes / Klamath
21	OR 58	Willamette Highway	24	Klamath
22	OR 126/242	McKenzie Highway	34	Deschutes
23	US 20	Santiam Highway	38	Deschutes / Jefferson
29	OR 31	Fremont	46	Deschutes / Klamath / Lake
46	FS 46	Cascade Lakes Highway	69	Deschutes / Klamath
90	FS 61	Crescent Cutoff	9	Klamath
92	FS 42	South Century Drive	28	Deschutes
93	FS 21	Paulina Lake Road	19	Deschutes
94	FS 23	Spencer Wells Road	7	Deschutes
97	FS 14	Metolius River Road	5	Jefferson
157	FS 43	Burgess Road	11	Deschutes
243	FS 60	Crescent Lake	2	Klamath
244	FS 45	Sunriver to Mt. Bachelor	13	Deschutes

Table 2-6: Forest Highway Road System for the Ochoco National Forest

FH #	Other #	FH Name	Length	County(s)
27	US 26	Prineville-Ochoco	48	Crook / Wheeler
96	FS 96	Haystack Reservoir	10	Jefferson
99	FS 33	Mill Creek Road Steins Pillar	11	Crook
100	Co. 123	Ochoco Ranger Station Road	9	Crook
101	FS 22	Johnson Creek Road	7	Wheeler
120	OR 380	Prineville-Logdell Highway	74	Crook
123	Co. 135	Puett Road	13	Crook
124	Co. 113	Beaver Creek Road	13	Crook
125	Co. 224	Newsome Creek	7	Crook

186	FS 64	Jordan Road	34	Jefferson
188	FS 27	McKay Road	13	Crook

Public Forest Service Road System

The Forest Service has been working closely with the Federal Highway Administration recently to develop a new Public Forest Service Road Program that is somewhat similar to the Forest Highway Program discussed above. This program would also be funded under the Federal Lands Highway Program using Highway Trust Funds under TEA21 (or the next Transportation Bill to be voted on in 2003). By definition, a Public Forest Service Road (PFSR) is a Forest Service road that is "open to public travel", as in the definition of our Highway Safety Act roads. However, not all Highway Safety Act roads will qualify as Public Forest Service Roads. To qualify as a PFSR, the road must be a maintenance level 3, 4, or 5 road under the jurisdiction of the Forest Service, provide unrestricted access, and serve a compelling public need. Under this definition most of our Highway Safety Act roads that are arterials or collectors are listed as "potential" PFSR's; it is not anticipated that many local roads will fit this definition. Tables 2-7 and 2-8 list the potential PFSR's that the forests have selected to perform work on and include in the new program under the first round of funding (2004 - 2006), if the PFSR program is approved and funded. All potential PFSR's are displayed on Maps IV-14 and IV-15 in the Appendices-Volume IV.

Table 2-7: Proposed Public Forest Service Road Projects for the Deschutes National Forest (FY 2004 - FY 2006).

Forest Priority	Road	Project Name	Length (Mi)	Estimate (M\$)
1	42	South Century Drive	9	\$ 1,024
2	40	Three Trappers Road	19	\$ 2,540
3	1815	Horse Butte Road	2	\$ 580
4	11/1170	Lake Billy Chinook Access	26	\$ 2,470
5	41	Conklin Road	7	\$ 1,210
6	18/25	Eastside Tour Loop	21	\$ 360
7	5800680	Odell Resort Road	1	\$ 862
8	60/6020	Crescent Lake Access	9	\$ 1,220
9	16	Three Creeks Lake Road	12	\$ 3,820
10	22	South Ice Cave Road	7	\$ 2,310
11	12	West Metolius Access	9	\$ 2,712
12	4625	Elk/Hosmer Lakes Road	3	\$ 480

Table 2-8: Proposed Public Forest Service Road Projects for the Ochoco National Forest (FY 2004 - FY 2006)

Forest Priority	Road	Project Name	Length (Mi)	Estimate (M\$)
1	42	Big Summit Loop	43.5	\$ 15,670
2	58	Paulina Road	7	\$ 2,705
3	33	Mill Creek	11.5	\$ 3,035

Unclassified Roads

Unclassified roads typically result from low-standard temporary roads either built within the scope of timber sale contracts or from other unplanned, off-road vehicle uses such as gathering firewood and accessing dispersed recreation sites. After their intended use, such roads are typically decommissioned but are often visible as primitive wheel tracks or show up as features in aerial photos. In general, it is thought that unclassified roads have a low impact in terms of erosion and sedimentation. It is estimated that the Ochoco National forest has approximately 600 miles or more of unclassified wheel tracks and the Deschutes may have a higher number than that. These roads typically have not been mapped or recorded in the forest transportation database, but management direction in the new Transportation Policy of 2001 requires that we begin to inventory and track these unclassified roads in the future.

Road Maintenance Funding (Ochoco & Deschutes NF's)

Road maintenance funding has declined substantially over the past decade for both forests. Over the past 3 years the Deschutes National Forest road budget, (including both road construction and maintenance funds), has averaged around \$1,800,000 and the Ochoco has averaged around \$1,000,000. After overhead and other administrative expenses have been factored out, approximately \$750,000 has been available for "on-the-ground" road maintenance work on the Deschutes and approximately \$280,000 has been available on the Ochoco. These amounts are expected to remain relatively stable or slightly increase in the foreseeable future; however, they are substantially less than what is needed to fully maintain the road system to the objective standards.

Beginning in 1998, the Forests began conducting road condition surveys to determine the annual costs necessary to fully maintain the road system to standard. In addition, any deferred maintenance work items necessary to bring the roads back to standard are recorded and documented. Tables 2-9 and 2-10 below compare the amount of road maintenance dollars currently being spent on the road analysis study roads with the amount of dollars needed to maintain those roads to standard as determined through the annual and deferred maintenance condition surveys.

Table 2-9: Comparison of Existing Maintenance costs with Annual and Deferred Maintenance Needs for the **Deschutes National Forest**.

Operational Maintenance Level	Total Miles	Existing Maintenance Costs*	Annual Maintenance Needs*	Deferred Maintenance Needs*
1	14	\$284	\$46	\$1,499
2	1,422	\$250,449	\$691,892	\$19,739,120
3	268	\$228,656	\$780,967	\$5,787,375
4	126	\$179,013	\$526,361	\$6,572,377
5	55	\$87,150	\$154,055	\$1,064,517
TOTAL	1,886	\$745,552	\$2,153,321	\$33,164,888

* Note: The figures in the table above reflect actual on-the-ground maintenance costs only. Overhead and other administrative costs (approximately 40%) are not included.

Table 2-10: Comparison of Existing Maintenance costs with Annual and Deferred Maintenance Needs for the **Ochoco National Forest**.

Operational Maintenance Level	Total Miles	Existing Maintenance Costs*	Annual Maintenance Needs*	Deferred Maintenance Needs*
1	9	\$1,039	\$5,288	\$13,060
2	468	\$92,516	\$622,059	\$8,764,696
3	127	\$54,251	\$354,893	\$7,635,694
4	48	\$50,869	\$258,637	\$7,211,219
5	57	\$80,363	\$361,497	\$13,426,727
TOTAL	709	\$279,038	\$1,602,375	\$37,051,396

* Note: The figures in the table above reflect actual on-the-ground maintenance costs only. Overhead and other administrative costs (approximately 40%) are not included.

For the Deschutes National Forest, the results of this analysis show that we need to spend approximately \$33 million dollars to bring the road system back up to standard and then spend approximately \$2.1 million annually to keep it maintained in a safe and environmentally sound condition. For the Ochoco National Forest we would need \$37 million for deferred maintenance and \$1.6 million annually. Although it would be desirable to request the funding necessary to accomplish this work, it is not anticipated that increases in funding of this magnitude are going to be available anytime in the foreseeable future. Therefore, options for managing the road systems are limited to either reducing the mileage and/or standard of roads to maintain, or continuing to prioritize maintenance work on the existing system and accept a continued increase in our deferred maintenance backlog.

In addition to the large discrepancy between our present road maintenance funding and our projected road maintenance needs, the amount of road maintenance work traditionally performed by timber purchasers has been dramatically reduced over the past decade. The

reduced opportunity for sharing road maintenance responsibilities with timber purchasers, both in terms of work performed and collection deposits, will continue to compound our lack of ability to keep up with our maintenance needs.

This condition is becoming very evident in our backlog of both surface rock replacement on our main roads and brushing on our local roads. The crushed aggregate and cinder surfacing on most of our main roads is worn out. We have traditionally shared the work and expense of replacing surfacing materials with timber purchasers during active timber sales. With the dramatic decrease in the timber program, we have very limited means of replacing surface materials on our roads. This condition is becoming severe on both forests and can only get worse without new funding sources being found. We are also noticing a profound increase in the number of our objective maintenance level 2 roads that we can no longer drive in a full sized vehicle due to encroaching brush. These roads were typically brushed out as part of our active timber sales, but many have not had project use in years. We expect to see a significant portion of these objective maintenance level 2 roads move into an operational level 1 (closed) category due to lack of ability to maintain.

SOCIAL AND ECONOMIC

The communities surrounding the Forests depend on the forests and grasslands to help meet their needs and the road system serves as the interface between the needs of the local communities (e.g. timber, forage, mining, and recreation) and the ecosystems themselves.

Livestock, agriculture, minerals, and timber were/are the backbone of the local economies and as a result strongly shaped the social fabric that still defines most of the communities today. The existing road system was developed largely in the context of this historical perspective.

The goods (e.g. timber, minerals, livestock) and many of the services (recreation, scenery) supported by the Forests are highly dependent on the types and location of roads that provide access for these uses. As a result, access to the resources on the Forests will continue to have a profound effect on both the economic and social dimensions of the communities that surround them.

Over all uses of the road system and public lands within the area is changing in character as a result of the changing social and economic conditions in the region.

Roads have become vital components of the human use of forested systems. Without roads, developing the economic activity critical to the quality of modern life would have been difficult, and roads remain central to many forest uses today.

CULTURAL RESOURCES

On both the Deschutes and Ochoco National Forests, there are over 3,200 known cultural resource sites, the majority of which reflect prehistoric use patterns prior to the 19th Century (the most common site type being a scatter of stone tool detritus), and the remaining are associated with more recent historic uses related to exploration, early settlement, mining, ranching, timbering and recreation. Cultural Resource sites can be found in almost any location on public lands. In general archaeological sites are found in or near riparian areas and terraces, including their confluences, areas providing shelter and access to food and other economic resources such as, camas prairies, on lithosols productive for lomatiums and bitterroot, at natural fisheries (cascades, falls and freshwater shellfish concentrations), by obsidian and other suitable tool-stone sources, along riparian areas productive for willows, red osier dogwood and tule marshes, etc.

During the 1840s and 1850s thousands of emigrants passed through Oregon territory on the way to their future homesteads in the Willamette Valley. Few looked to dry Central Oregon for land until the valley filled-up with settlement. Hostilities between Native Americans and emigrant wagon trains and parties of miners passing through, also limited settlement of Central Oregon. Mining developed more fully during the 1860s in Eastern Oregon, which resulted in improved transportation routes, establishment of small communities and created local needs for natural resources and foodstuffs. Settlement took root during this era, with small populations centered around water, protection from weather and winds, and adjacent to transportation routes.

The following site types and/or features are known to have high values and/or be at risk due to proximity to identified travel routes:

Table 2-11: Site Type Determined Susceptible to affects of transportation system.

Code	Site Type	Code	Site Type
101	Prehistoric structure	102	Burial/grave/cemetery
103	Ethnographic village	104	Hearth
105	Housepit	106	Midden
107	Shell midden	109	Petroglyph
110	Pictographs	117	Rockshelter/cave
118	Traditional Cultural Properties	122	Flaked tools
123	Ground stone tools	124	Cache
204	Historic structure	205	Historic structure remains
206	Historic structure complex	207	Historic structure complex remains
211	Dendroglyphs	213	Mine/Adit
215	Road	216	Stock driveway/corridor

217	Trail	17	Root gathering area (obsolete)
19	Fishing station (obsolete)	41	LS w/ flaked tools (obsolete)
42	LS w/ ground stone tools (obsolete)	43	LS w/ both flaked tools & ground stone (obsolete)
44	Lithic scatter w/ features (obsolete)	46	Hearth and/or fire cracked rocks (obsolete)
67	Logging camp (obsolete)	68	Historic camp/ community (obsolete)
85	Picnic/community kitchen (obsolete)	118	Traditional Cultural Property

BOTANY

The Deschutes and Ochoco National Forests as well as the Crooked River National Grassland encompass a wide variety of plant communities. Roads within this analysis area travel through high elevation mixed conifer forests, ponderosa pine forests, juniper woodlands, and low elevation shrub-steppe communities. Plant habitats include:

- Ponderosa pine, dry mixed conifer forests and meadow openings.
- Juniper woodlands, grasslands, pine forest fringe.
- Riparian (including cottonwood galleries, swamps, and meadows).
- High elevation wet meadows and springs.
- High elevation forest/alpine habitats (dry and wet mixed conifer forests, lodgepole forests, and alpine areas).
- Shrublands.

Special Habitats

Botanical species diversity is dependent on the variety of habitats found throughout the National Forest. This diversity is a vital part of ecosystems that is important to the viability of other organisms, such as insects, birds, and mammals. Special habitats for this analysis are defined as those habitats that are unique in plant species composition in comparison to the common and dominant coniferous forests, juniper woodlands, and shrub-steppe communities. Special habitats considered in this analysis are wetlands (i.e., ponds, bogs, swamps), wet, moist and dry meadows, aspen stands, cottonwood bottomlands, and scablands. These habitats often represent a relatively small portion of the landscape, yet are vital to overall

ecosystem health.

Threatened, Endangered & Sensitive Plants

There are no listed Threatened or Endangered plant species on either the Deschutes or Ochoco National Forests. The Deschutes National Forest has 25 plant species on its Sensitive Plant List; the Ochoco National Forest has 26 plant species on its Sensitive Plant List.

Current maps and GIS analysis indicated the following sensitive species occur within 200 feet of roads:

- *Achnatherum hendersonii* (Henderson's rice grass)
- *Artemisia ludoviciana* ssp. *estesii* (Estes artemisia)
- *Astragalus tegatarioides* (bastard kentrophyta)
- *Botrychium crenulatum*
- *Botrychium minganense*
- *Botrychium montanum*
- *Botrychium pinnatum*
- *Botrychium pumicola*
- *Calochortus longebarbatus* var. *longebarbatus* (long-bearded mariposa lily)
- *Calochortus longebarbatus* var. *peckii* (Peck's long-bearded mariposa lily)
- *Castilleja chlorotica* (green-tinged paintbrush)
- *Gentiana newberryi* var. *newberryi* (Newberry's gentian)
- *Penstemon peckii* (Peck's penstemon)
- *Scheuchzeria palustris* var. *americana* (scheuchzeria)

Noxious Weeds

Weed populations are found along road shoulders, in dispersed campsites, trailheads, and timber harvest landings -- anywhere there is a ground-disturbing activity. The introduction of noxious weeds threatens habitats for sensitive species, such as Peck's penstemon, and degrades wildlife habitats. Noxious weeds threaten essentially all types of habitats, including low elevation ponderosa pine forests, juniper woodlands, grasslands, and shrublands. Diffuse and spotted knapweeds are spreading rapidly along roadsides and disturbed sites. Cheatgrass is an invasive non-native species that rapidly spreads off disturbed roadside shoulders into native plant communities. Noxious weeds can out compete native species and reduce habitat quality.

Roads have a direct effect on the introduction and movement of noxious weeds. People, animals, and machinery move noxious weeds from place to place. Roads provide constantly disturbed habitats, devoid of competing vegetation, for establishment of weeds. Road maintenance contributes to the movement of weed seed, especially along major road corridors, such as Highway 97. One contributing factor is the movement of seed from cinder pits or other aggregate sources when the materials (and seeds) are moved and placed on roads for surfacing or to treat icy highways in the winter. Sometimes these material sources are used as waste disposal areas for other projects further contaminating them with seeds from the waste

debris. Another factor is the large amount of recreational traffic coming through and from the cities of Bend, Redmond, Sisters, and LaPine, where spotted and diffuse knapweeds are well established.

Table 2-12 lists State-listed noxious weed species that are documented or suspected to occur on the Deschutes and Ochoco National Forests, and indicates what species occur within 200 ft. of roads within the scope of this analysis. However, mapping is incomplete and the actual number of noxious weed species occurring within 200 feet of roads may be greater than listed below. Two hundred feet is an arbitrary distance; noxious weeds, such as yellow star thistle (*Centaurea solstitialis*), may not occur within 200 feet of roads (it does occur within 500 feet) but are likely to become spread and become established along roadsides and are a serious concern.

Table 2-12: State-listed Noxious Weed Species that are documented (D) or suspected (S) to occur on Deschutes and Ochoco National Forests. Noxious Weed species that will be analyzed in this analysis are those known to occur within 200 ft. of roads with the Road Analysis Area.

Species	Common Name	Deschutes NF Noxious Weed List	Ochoco NF TES Plant List	Mapped in GIS within 200 ft. of Roads within Analysis Area
<i>Agropyron repens</i>	Quackgrass	D		
<i>Cardaria draba</i>	Whitetop	S	D	X
<i>Carduus nutans</i>	Musk thistle	S		
<i>Carduus pycnocephalus</i>	Italian thistle	S		
<i>Centaurea diffusa</i>	Diffuse knapweed	D	D	X
<i>Centaurea maculosa</i>	Spotted knapweed	D	D	X
<i>Centaurea pratensis</i>	Meadow knapweed	D		
<i>Centaurea repens</i>	Russian knapweed	S	D	X
<i>Centaurea solstitialis</i>	Yellow starthistle	S	D	
<i>Centaurea virgata</i> ssp. <i>Squarrosa</i>	Squarrose knapweed	S		
<i>Cirsium arvense</i>	Canada thistle	D	D	X
<i>Cirsium vulgare</i>	Bull thistle	D	D	X

Conium maculatum	Poison hemlock	S		
Convolvulus arvensis	Field bindweed	S	D	X
Cynoglossum officinale	Common houndstongue	D	D	X
Cytisus scoparius	Scotch broom	D	D	X
Euphorbia esula	Leafy spurge	D	D	X
Hypericum perforatum	St. Johnswort	D	D	X
Isatis tinctoria	Dyer's woad	S		
Kochia scoparia	Kochia	S		
Linaria dalmatia	Dalmation toadflax	D	D	X
Linaria vulgaris	Butter & eggs	D	D	X
Lythrum salicaria	Purple loosestrife	S		
Onopordum acanthium	Scotch thistle	D	D	X
Potentilla recta	Sulfur cinquefoil	S	D	X
Salvia aethiopsis	Mediterranean sage	S	D	X
Senecio jacobaea	Tansy ragwort	D	D	X
Taeniatherum caput-medusae	medusahead	D	D	X

Survey and Manage Plant Species

In 1994, the Bureau of Land Management and Forest Service adopted standards and guidelines for the management of habitat for late-successional and old growth forest related species within the range of the northern spotted owl, commonly known as the Northwest Forest Plan (USDA Forest Service and USDI Bureau of Land Management 2001). The Northwest Forest Plan (as amended by USDA Forest Service and USDI Bureau of Land Management 2001) includes mitigation measures (Standards and Guidelines) for species that, either because of genuine rarity or because of a lack of information about them, the Agencies did not know whether they would adequately be protected by other elements of the Northwest Forest Plan. These species are called "Survey and Manage". These Survey and Manage species are largely non-vascular plants (mosses and liverworts), lichens and fungi. The importance of these species to the health of ecosystems is just being recognized. The majority of

these species are found in mature to late-successional forests. Intact forests have substrates and microclimate (temperature and humidity) preferred by these species. Several species are dependent on pristine riparian or aquatic conditions. Roads create openings to interior forest habitats, reducing the quality of the habitat. Fragmentation of habitat creates conditions that many species may not survive. (USDA Forest Service 1998). Western portions of the Deschutes National Forest are within the Northwest Forest Plan.

However, due to lack of GIS and database information, this level of botanical analysis will not evaluate the effects of roads on Survey & Manage plant species. These organisms will be evaluated in future analysis, assuming that more complete information will be available.

WILDLIFE

The roads analysis for the Deschutes and Ochoco National Forests including the Crooked River National Grassland and portions of the Prineville BLM encompass close to two million acres. Habitats across this vast area range from low elevation sagebrush bunch grass to high elevation subalpine fir communities and from remote areas with very limited human intrusion to rural habitats adjacent to large population centers.

Many species are sensitive to harassment or human presence at particular use sites, which is often facilitated by road access; potential reductions in productivity, increases in energy expenditures, or displacements in population distribution or habitat use can occur (Bennett 1991, Mader 1984, Trombulak and Frissell 2000). Examples are human disturbance of leks (sage grouse and sharp-tailed grouse), of nests (raptors such as ferruginous hawk), and of dens (kit fox).

Threatened, Endangered & Sensitive Animals

There are three species listed as threatened (Northern Spotted Owl, Bald Eagle, and Canada Lynx), one candidate (Oregon Spotted Frog), and several other species have been petitioned, or have some other potential for listing under the Endangered Species act (western sage grouse, California wolverine, mountain quail, northern goshawk, and fisher) by the US Fish and Wildlife Service that occur within the planning area. Negative effects of roads on western sage grouse, California wolverine, Canada Lynx, and fisher have been well documented in many studies.

Wildlife Management Objectives for Roads

Deschutes, Ochoco NF, and Crooked River NG Plans set management objectives for open road densities and seasonal closures to prevent disturbance to sensitive populations or habitats.

Table 2-13: Management Objectives for Open Roads and Seasonal

Closures by Area. (m/m² = miles per square mile)

Road Densities	Deschutes NF	Ochoco NF	Crooked River NG
Winter Range	0.5 - 1.5 m/m ² 1.0 - 2.5 m/m ² MA7	1 m/m ² During closure 3 m/m ² Outside closure	1 m/m ² During closure 3 m/m ² Outside closure
Summer Range	2.5 m/m ²	3 m/m ²	3 m/m ²
Season of Closure	Deschutes NF	Ochoco NF	Crooked River NG
Winter Range	Dec. 1 - May 1	Dec. 1 - May 1	Dec. 1 - March 31
Calving Areas	May 1 - July 31	May 15 - June 30	May 15 to June 30
Rutting Areas		Sept. 1 - October 15	Sept. 1 - October 15
Lynx Denning	April 15 - July 15	N/A	N/A
Bald Eagle	Dec. 1 - August 31	Dec. 1 - May 1	Dec. 1 to May 1
Spotted Owl	March 1 - July 31	N/A	N/A
Osprey	April 1 - August 31	March 1 - August 1	March 1 - August 1

In most areas existing open road densities are higher than the identified objectives. The Trail System and Off-Highway Vehicle Management and Development EIS completed by the Ochoco N.F. in 1996 found road densities ranged from 0 to > 12 m/m². Average road densities in General Forest and Winter Range designations were 4.01 m/m² and 3.14 m/m² respectfully. Similar results would be expected for the Deschutes N.F. Road densities in some areas have been reduced from these levels due to an increased effort to close roads. Since 1996 very little administrative road construction has occurred; however, non-system roads continue to be created by forest users.

Other Forest Plan objectives for wildlife management as related to roads and road uses are described in Appendices-Volume I, Appendix I-2, Wildlife and Aquatic Road Direction.

Wildlife Habitat Effectiveness

Many of the low-elevation habitats in the analysis area are declining primarily due to increased conifer competition. Low elevation ponderosa pine stands once contained a sparse distribution of large diameter trees with very open stand conditions under the primary canopy. In some situations the presence of roads reduces the effectiveness of returning these habitats to more open stand conditions. Higher densities of conifer trees have been providing increased hiding cover and habitat security. Returning these habitats

to more natural open conditions increases impacts of road associated factors like hunting, poaching, sight seeing, etc.

The majority of interior old-forest habitats exist at higher elevations. Both the Deschutes NF and Ochoco NF have designated large blocks of high elevation old-forest habitats as wilderness or roadless areas. Higher elevation habitats dominated by large structure have not been impacted as extensively as the lower elevation habitats; however these habitats were historically very stable with limited amounts of edge habitat. These habitats have been penetrated for timber harvest, recreation, and mass transit. Highway 26, 97, and 126 all go through high elevation habitats. In a review of forest fragmentation effects Reed et al. 1996, found that roads added to forest fragmentation more than clear-cutting by dissecting large patches into smaller pieces and by converting forest interior habitat into edge habitat. The total landscape area affected by clear-cut and roads was 2.5-3.5 times the actual area occupied by these disturbances (Reed 1996).

Analysis for the Trail System and Off Highway Vehicle Management and Development EIS for the Ochoco NF and Crooked River NG found 33% of the analysis areas riparian habitats were influenced by road construction. Roads in the analysis area were within 25 feet on 17% and 400 feet on 52% of riparian habitats measuring from the center point of the riparian area (Ochoco NF, 1996). Similar influences could be expected on the Deschutes NF with potentially higher percentages in areas of the Cascade Mountains with greater annual precipitation and higher concentrations of riparian habitats.

The population of Central Oregon is one of the fastest growing in Oregon. This is resulting in increased volume and type of vehicle access into wildlife habitats. Higher volume roads have been shown to preclude habitat use by some species. Increasing numbers of people walking through forested environments searching for mushrooms, antlers, and for other recreational activities increase energy expenditures of wildlife avoiding these contacts and can lead to habitat avoidance or death. Species most sensitive to road influences, road densities, or human activities include: elk, deer, antelope, bighorn sheep, wolverine, Canada lynx, and small mammals. Although vehicle induced mortality of larger animals occurs on forest roads it is generally less frequent than on highways due to generally lower vehicle speeds and traffic volumes. Higher levels of mortality are common for small mammals like squirrels on forest roads due to the direct association with forested habitats.

Off Highway Vehicle (OHV) use has increased dramatically in the past several years. These new vehicles are capable of directly accessing habitats and further damaging habitats and reducing security levels. The Crooked River National Grasslands is closed to vehicle use off of designated roads. Some management areas on the Deschutes NF are designated route only use, others including the largest land base designation (General Forest) are open to off road vehicle use. The Ochoco NF is open to motorized vehicle use off of established roads except in riparian areas, on slopes greater than 30%, or if there is a designated closure. Quantifying the potential effects of OHV use associated with system roads is much more difficult in areas where vehicles are allowed to travel off of designated routes. Although OHV use off of established roads occurs on all administrative units it is safe to assume the levels and associated impacts are greater on

those areas allowing vehicle use off of designated routes.

There are three designated OHV trail systems where OHV use is concentrated on National Forest and Grasslands, and one on adjacent BLM lands. These areas allow OHV use on designated routes only. Effects of OHVs on wildlife may include increased expenditure of energy due to stress from disturbance, destruction of vegetation which supports wildlife habitat and food, lower reproductive success due to disturbance during critical mating and reproductive periods, greater competition for resources due to population concentrations, displacement of animals, and although rare, even mortality. Species with greater sensitivity to human disturbance are likely precluded from utilizing habitats associated with these areas. Species like big game can adapt to predictable activities in specific areas but surprise encounters cause increased stress and may cause animals to move to other areas. This movement may cause greater risk of predation (Lyon 1979). In the Blue Mountains of Washington, Perry and Overly (1976) found reductions of deer use in habitat 1/8 mile from roads and reductions in elk use 1/2 mile from roads. Other species acclimate to the disturbance with only occasional increased energy expenditures due to disruption or low frequencies of death from vehicle impact or nest destruction.

ODF&W in conjunction with the Forests have identified three major migration corridors within the analysis area. Deer, elk, and antelope migration routes have been altered due to several state highways. The expansion and sprawl of population centers has forced several sheet migrations into more restricted corridors. When these focused migration points come in contact with a state highway of the magnitude of Highway 97 numerous animals are killed yearly.

Public lands in Central Oregon receive the bulk of hunting pressure because of their open access to the general public. This results in drastic increases in the number of individuals utilizing forest roads just prior to and during the big game hunting seasons running primarily from August through December. In some populations on the Ochoco NF and Crooked River National Grasslands there is a definite shift from public to private land use by big game animals during the hunting season (Pers. comm. Ferry). Poaching and recreational shooting of small mammals is well documented throughout central Oregon.

Private and commercial fire woodcutting is a way of life for many people in Central Oregon. This has resulted in reduced down log and snag levels within 200 yards of most roads. Repeated woodcutting in areas where off road vehicle use is allowed have resulted in numerous nonsystem roads being created. The greatest effect of woodcutting on down logs and snags occurs in areas with high road densities relatively close to population centers. Species that depend on large trees, snags, or down logs, particularly cavity-using birds and mammals, are vulnerable to increased harvest of these structures along roads (Hann and others 1997). Post sale monitoring on one timber sale on the Ochoco N.F. revealed woodcutters had removed >80 snags after sale activities were completed. Management objectives for snag numbers were met after timber harvest activities but subsequent woodcutter activity reduced snag numbers below desired levels (Kuk, 1999 pers. com.).

AQUATIC RESOURCES

The roads analysis for the Deschutes and Ochoco National Forests encompasses national forest lands and streams within the Deschutes basin above Trout Creek, the Crooked River basin lands, and portions of the upper John Day River basin. It covers ten 4th level HUC watersheds that encompass 69 5th level HUCs and xxx 6th level HUC's.

Problems associated with roads that affect fisheries on both forests include increases in sediment from surface erosion and road fill failures. Fine sediment effects spawning and rearing success, and can decrease pool depth. Deep pools are an important habitat parameter for survival of both adults and juveniles in winter and summer, as these areas provide modulated temperatures. Roads on both forests have constricted floodplains and stream channels, reducing habitat complexity and area, and ground water retention, along with the reducing the streams ability to respond to floods and other catastrophic events. Constriction of the channel cause changes in channel type and gradient, which can result in channel incision, which further contributes to decreases in fish habitat. In addition, roads paralleling streams interrupt the flow of riparian and upland materials to the stream system. Shade, large wood debris, subsurface water flow, and coarse sediment inputs have all been interrupted resulting in reduced habitat complexity and increased temperatures.

Perhaps the largest impact from roads on the fisheries resource has been in the form of reduced access to habitat from impassable culverts. Many stream crossings have culverts that are poorly designed not only for fish passage but also for passage for flood flows. These culverts have effectively eliminated upstream fish passage for juveniles and in some cases adults. Genetic interchange is therefore limited in these areas to a downstream flow, although perhaps more importantly is the loss of upstream passage for fish during summer low flows when cooler temperatures are likely in the headwater areas, which could result in mortality.

Forest Plan direction for Aquatic Resources as related to roads and road uses is described in Appendices-Volume I, Appendix I-2, Wildlife and Aquatic Road Direction.

RECREATION

The Central Oregon area is a premier attraction for a wide variety of motorized and non-motorized recreation. The quality, quantity, and variety of recreation opportunities invite recreationists of all types to visit and reside in the area. The variety ranges from Cascade crest to high desert; from high elevation winter activities to the summer flats of Fort Rock, from designated areas for motorized activities to a multitude of non-motorized opportunities. With reasonable driving

times from much of the west coast, the area is accessible all year long for a number of attractive recreation opportunities. The consistently desirable weather increases the popularity and the population of central Oregon.

The gentle topography of much of the area made it easy to utilize the railroad to log much of this area in the early 1900's. Many of these railroad grades became roads after they were abandoned, while open forest stands on the gentle terrain provided easy access to large portions of the area. Over the years, access roads to key recreation sites, mostly related to water or geologic features, were constructed by the agencies or in some cases by the users. With the advent and refinement of the 4-wheel drive vehicle, additional roads were created accessing other dispersed recreation sites, firewood cutting, and in some cases, just accessing new areas. The increase of access lead to the increase the stocking of water-bodies, leading to more recreation use. The development of the reservoirs added to the draw of fishing and further access needs around the reservoirs.

As a result, there are more roads across the landscape than is necessary to provide appropriate access to the developed and dispersed recreation sites. The relatively easy topography and the sparse vegetation have allowed the construction of user created roads.

Developed Recreation

State, county, or level 3-5 roads generally access developed recreation sites. In most cases these are paved or high standard gravel surfaced roads. In most cases, these are 2 or 4 digit roads. There are some sites, which are accessed by level 2 roads. These usually get maintained over other level 2 roads.

Approximately half of the recreation use on the Deschutes NF is associated with developed recreation sites, whereas on the Ochoco it makes up approximately twenty percent of the use. The typical season of use is the May through October with the bulk of the use occurring from the 4th of July through Labor Day. In addition to USFS sites there are many (8 on the DNF) private resorts, which are operated under a special use permit. In just about all cases state or county roads access these sites.

Dispersed Recreation

Dispersed Recreation takes place outside of developed recreation facilities and includes such activities as camping, hunting, fishing, hiking, caving, forest product collection, rockhounding, mountain biking, ORV use, and horseback riding. Much of these activities take place at locations associated with a water feature (lake or river). This is where roads and trails have been constructed over the years, either planned or user created. It is also where some of the most significant impacts occur, such as the degradation of water quality and erosion problems.

Approximately half of the total recreation use is attributed to dispersed types of recreation as mentioned above. In general,

dispersed recreation takes place on the lower standard roads as well as user created roads accessing the more remote parts of the area, further from developed sites and higher standard roads.

Driving for pleasure is the number one national recreation pastime. People drive roads of all types and standards just to explore. All types of vehicles will utilize most roads in order to access desirable areas.

Trailheads are considered developed sites, which access dispersed recreation activities such as hiking, horseback riding, mountain biking and OHV riding. Trail use has grown significantly in the last 20 years, in part from user trails being created (especially mountain bike and OHV). There has been a consistent increase in trail use due to the population and popularity of the area growing dramatically in the last 20 years. The types of use seeing the most increase in central Oregon in recent years have been OHV, mountain bike and snowmobiles. In all 3 cases, the central Oregon area has become known as a destination for these uses. All of these uses utilize roads as trails, especially lower standard roads. There is continued opportunity for utilizing unnecessary roads as trails. There has been a move to reconstruct and authorize user created trails in OHV and mountain bike trailed areas.

Dispersed camping is desirable by those who seek a more primitive camping experience or for those who don't want to pay fees associated with many developed campgrounds. The more primitive experience fits well for some people. The increase in self-contained recreational vehicles has increased the level of dispersed camping. Dispersed sites are usually unmaintained and can contribute to resource impacts such as soil erosion and water quality degradation. As a result of this and the trend for less roads to maintain, more and more of these dispersed campsites are being closed, obliterated, or just made less accessible due to the closing of roads. These are generally lower standard roads that access dispersed campsites.

Collection of forest products is a common use of the area. This includes woodcutting, plant collection, cone collection, rock hounding, Christmas tree cutting, etc. This generally requires the use of lower standard roads or user created roads for access into more remote areas.

Fishing and hunting are two very popular pastimes for today's society. Both require use of all types of roads. The popular fishing spots in most cases have primary roads leading to them. There are some cases where lower standard roads are used to reach more remote fishing holes. Hunting generally uses all roads but especially lower standard roads to reach remote areas.

Primitive Areas

There are a number of primitive areas in central Oregon, including Wilderness areas, Oregon Cascades Recreation Area, and other unroaded areas. There are a total of eight National Forest Wilderness areas in central Oregon as well as numerous unroaded areas, such as old growth, research natural areas, Wilderness study areas, and more. Improved level 3-5, or state and county roads mostly access these areas. There are additional restrictions in most of these areas,

such as non-motorized and non-mechanical transportation means used within these areas. Travel is generally by foot or horseback. Roads leading to trailheads accessing these areas may be lower standard roads, but usually come off of primary roads.

Use of these primitive areas is classified as dispersed recreation and consists of hiking, backpacking, horseback riding, sightseeing, photography, and others. The current trend is toward more (80%) day use, rather than overnight use.

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Chapter 3- Issues and Key Questions

Roads and road management have become hot topics for resource specialists and the general public when discussing most resource management activities today. Many issues and concerns revolve around the balance between resource management, aquatic and terrestrial wildlife habitats, plants and plant habitats, and access to public lands. In order to address this topic and focus the direction of the analysis, the Road Analysis Team developed a set of issues (business needs) and key questions for addressing the issues, using the results of a public involvement effort and an Information Needs Assessment (INA). The public involvement effort and the INA were discussed in Chapter 1. Following is a summary of the Issues and Key Questions developed through these efforts and used for this Roads Analysis.

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Forest

Deschutes National Forest

1001 SW Emkay Drive
Bend, OR 97702

(541) 383-5300

Ochoco National Forest

3160 N.E. 3rd Street
Prineville, OR 97754

(541) 416-6500

**Crooked River National
Grassland**

813 S.W. Hwy. 97
Madras, OR 97741

(541) 475-9272



ISSUES SUMMARY

Below is a list of the issues, by resource area, that were used to guide the analysis. They were identified by members of the IDT during the INA process, as well as from comments received by the general public from this and other site-specific analyses proposals. This is not an exhaustive list, but was used to direct the Roads Analysis Team to key areas of concern for this analysis (See Appendices-Volume I, Appendix I-4 for more background on these issues).

Aquatics

Water Quality/Quantity: There is a concern that roads are affecting water quality in terms of sediment and stream temperature, and may be affecting water quantity from increased drainage networks that deliver water quickly to stream systems. Additionally, stream channels across the forests have been impacted by roads and have changed channel types, caused channel incision, and wetlands and floodplains have been filled and disconnected from their stream channels.

Aquatic Populations: Aquatic populations of fish, amphibians and invertebrates have been impacted by roads. Stream systems have a reduced capability to produce these populations due to increased stream temperatures and sediment, and channel constrictions. Road crossings have affected the ability of fish populations and other aquatic species to migrate successfully into previously occupied habitat or to have upstream genetic interchange.

Botany

Effects on plant habitats: The presence, type, and location of roads may affect unique habitats and plant communities, reserve areas and their associated species, research natural areas, and the quality of riparian and wetland habitats.

TES Plant Species: The presence, type, and location of roads may affect sensitive plant species and other plant species of concern.

Noxious Weeds: The presence, type, and location of roads affect the establishment and spread of noxious weeds and non-native invasive plant species.

Cultural Plants: The presence, type, and location of roads may affect plant species used by Native Americans. Road type and location may also affect access to gathering sites.

Wildlife

There is a concern that the road system or the human activities it facilitates causes adverse impacts to wildlife such as collisions, harassment, displacement, avoidance, or serve as a barrier to movement.

There is a concern that the road system or the human activities it facilitates causes indirect impacts to wildlife including habitat loss, fragmentation, negative edge effects, and snag/down wood losses.

There is a concern that the effects of the road system may have adverse impacts on the ecological conditions needed to maintain species viability including impacts to critical or key habitats.

Social/Economic

With the concerns outlined above, there has been a trend of managing roads to better enhance or protect plant and animal habitats. Many roads have been closed and/or restored to natural conditions in an effort to do this. Though many miles of road are still open and available for travel, the impression of the general public is that they are being locked out of their public lands. They are concerned that this, along with fees to utilize some forest resources, will conglomerate until they are totally locked out of many "free" places open to them now.

KEY QUESTIONS

The key questions below were developed to help the Roads Analysis Team address the issues and concerns discussed above. Many of the questions came from the *Roads Analysis Guide* (FS-643, August 1999), and others were developed by the interdisciplinary team during the INA process. They are intended to identify potential areas of conflict, public issues or concerns, and/or known problem areas as they relate to the issues described above. By defining quantifiable criteria to measure the issues by, the team was better able to identify real problems and opportunities to resolve them. Like the key issues, the key questions are categorized by resource area. Not all key questions are applicable to all locations.

Aquatics

Where and how do roads and 303d listed streams interact? Are roads contributing to the listing of water bodies to the 303 (d) list? How do road/stream interactions influence temperature, dissolved oxygen and pH parameters?

Where is sediment potentially coming from relative to roads? What is the potential for sediment delivery from identified road to stream?

Where are the areas of vegetation loss due to road proximity and/or

crossings?

How many miles of roads contribute to an increase in drainage?
Where and how does the road system generate surface erosion?

Where do roads and all streams interact? Where do roads constrict stream channels and flood plains?

Where do we have Rosgen A-G type streams?

How much riparian vegetation has been impacted from roads? Where are the areas of vegetation loss due to road proximity and/or crossings?

Where do fish, amphibians, and aquatic invertebrates occur in the watershed relative to roads?

Where are roads constricting streams and reducing aquatic species habitat?

How does the existing road system affect water quality?

Should the transportation system in identified special watersheds (key, A1/2, high priority restoration) be treated differently than roads in other watersheds?

Where and how does the road system affect mass wasting? Where are landslide prone areas likely to be?

Where and how does the glacial terrain interact with the road system?

Where and how does the Mazama Ash falls interact with the road system?

How many roads do we have in riparian areas? What is the density of roads in riparian areas?

Where are there barriers to fish passage?

How does road development and use affect water quality in municipal watersheds?

How and where does the road system affect risks to water quality from chemical spills or roadway-applied chemicals such as oil, deicing salts, herbicides, and fertilizers?

How and where do roads affect wetlands?

How and where does the road system affect fine sediments that enter streams lakes, and wetlands?

How and where does the road system modify drainage density that affects water quality and quantity?

How are road culverts affecting stream quality?

How and where do roads affect water quantity?

How and where do roads affect stream geomorphology?

How does the road system affect access construction, maintaining, monitoring and operations of water diversions, impoundments, and canals?

Are roads affecting municipal watersheds?

Botany

How and where do roads affect special and unique habitats?

How do roads impact reserved lands (Late Successional Reserves and Riparian Reserves) that are habitat for rare and unique species?

What Late Successional related species are found adjacent to roads and how is their habitat affected?

How and where do roads affect Research Natural Areas?

Are there unique plant communities affected by current or potential roads?

How and where do roads affect the quality of riparian and wetland plant communities?

What TES plant species are located in habitats with high probability of impact from roads?

How and where do roads, mineral material sources, water sources and their use contribute to the spread of noxious weeds?

How and where do contribute to the spread of noxious weeds?

How and where do developed recreation areas and trailheads contribute to the spread of noxious weeds?

What are the relationship of the transportation system and the intro/spread of noxious weeds and other non-native invasive species?

Wildlife

Are their threatened and/or endangered species in the planning area?

Where does the road system intersect areas important to wildlife movement (dispersal, migration etc.) thus increasing mortality due to collision?

Where does the road system allow public access to areas used by wildlife during critical periods (reproduction, rearing, wintering) or is rare or unique habitat (caves, wetlands)?

Where is road induced fragmentation and habitat loss causing negative edge effects?

Where is the road system contributing to the reduction of habitat for species dependent upon snags and down logs (where snags and down logs are limited)?

Do the impacts of the road system contribute to a decline in the ecological conditions necessary to maintain species viability?

Fire

Does the road system provide necessary (based on risk) access for firefighting resources, water sources, fire camp locations, and other improvements?

Does the road system provide necessary access for fuels treatment including personnel, contract administration, equipment, and water sources?

How does the road system affect access to water sources for road reconstruction/fire/range needs (water wells, pump chances, tanks, etc.)?

Lands/Minerals

What is the likely transportation system needed for future needs (mineral materials, geothermal etc.)?

How does the road system affect access to rock hounding areas?

Recreation

Is there adequate road access to all existing and planned developed sites? Are access roads maintained at a level commensurate with the type and amount of use?

Is there an adequate amount of roads available to meet the demands for driving for pleasure and other dispersed recreation activities access needs such as, camping, hunting, fishing, sight seeing, forest products collection, caving, etc.?

Are current regulations for road and trail systems adequate for current and future OHV use needs? Should OHVs be required to operate on roads and trails only in designated areas?

Is road and trailhead access appropriate to primitive areas/ Wilderness areas/unroaded areas appropriate for the type of use and carrying capacity of the site?

Archeological

How and where do roads provide access for traditional cultural practice sites for Native Americans? How and where do roads and their use affect cultural plant species and access to gathering sites?

How and where does road access affect archeological sites and historic properties?

Which roads are historic transportation routes?

Social/Economic

How does the road system connect public roads and provide primary access to communities?

How does the road system connect large blocks of land in other ownership to public roads? How does the road system affect managing roads with shared ownership or with limited jurisdiction?

How does the road system address the safety of road users?

How does the road system affect access needed for Administrative use?

How does the current Highway Safety Act roads system affect or support current Travel Access Plan?

What is the impact of converting roads to highway safety act standards or designation as Public Roads?

Can we afford the cost of maintaining roads in risk-prone (unstable terrain, high erosion potential, etc.) areas?

How does the road system affect managing the timber base and other lands?

How does the road system affect access to range allotments?

How does the road system affect operating water diversions, impoundments?

How does the road system affect access for collecting special forest products? How does the road system affect managing special use permit sites?

What are the economic characteristics of the surrounding geographic area?

What are the social characteristics of the surrounding geographic area?

What social and economic trends are occurring in the region relevant to management of the road system?

What is stakeholder perceptions related to the road system?

What conflicts exist among the various uses, users, and managers of the road system?

How does the road system affect the costs and revenues to the Forests?

How are local communities social and economic health affected by road management?

To what extent are the local communities dependent on forest resources (timber, mining, grazing, recreation, etc.)?

How does the road system affect market and non-market, and priced and non-priced outputs?

What is the road system relationship with the urban interface zones?

Does the road system affect people's sense of place?

Does the road system affect certain groups more than others (civil rights)?

Does the road system affect who receives the benefits and who receives the costs associated with the forests (equity).

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Chapter 4 - Assessing Benefits, Problems and Risks

In Step 4 of the Roads Analysis Process, the interdisciplinary team systematically examined the major uses and effects of the road system in order to assess the ability of the road system to meet current and future management objectives. The process used for the assessment as well as some general results are described in the sections that follow. A detailed summary of results, organized by 5th field watersheds, may be found in Appendices-Volume I, Appendix I-5.

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The basic principal behind the assessment was to compare the benefits (needs) of the road system with the impacts or risks that the roads impose on key resources. In order to make this comparison, the study roads were divided into individual segments and given a set of ratings to measure the relative values of their road use benefits against their resource risks. The rating system used was based on a set of "factors" developed by the Roads Analysis Team to address the issues and key questions identified in Step 3 of the process as described in the previous section.

As mentioned above, the roads were divided into segments for the road rating assessment. The segments were based on a variety of physical and administrative changes along the road, such as surface types, jurisdictional changes, watershed boundaries, etc. The reason for breaking the roads into these segments was to allow for the maximum flexibility of resource specialists to tailor their individual resource analyses to the study roads. For example, an aquatic analysis may need to know when the surface type changes on a road to assess surface runoff and sedimentation, and a wildlife analysis may need to know where a certain management area crosses the road to assess habitat disturbance.

RATING FACTORS AND RESULTS

The rating factors were developed for four broad topic areas: Human Uses, Aquatics, Botany, and Wildlife. To ensure consistency across all four areas, a numerical rating system of, 0 = no effect/not applicable, 1-3 = low use/effect, 4-6 = moderate use/effect, and 7-9 = high use/effect was used for each category.

The following sections give a brief summary of the factors used in the assessment followed by tables showing the overall distribution of the rating results for each factor. These results include all roads rated in the analysis for each forest. A more complete description of each factor, including the environmental processes, social, economic, and biological attributes, key question(s) addressed, the criteria for its numerical rating, and the data and analysis process used, is included in Appendices-Volumes 2 and 3. The Appendices also include a set of spreadsheets showing the individual ratings for each factor on each individual road segment.

Human Use

The Human Use rating factors considered public, private and administrative uses. Human Uses of the road system within the project area are the benefits associated with roads. Public and private uses of roads include access to both developed and dispersed recreation sites, access to private lands, and as travelways through the Forest to other lands. Administrative uses include all major activities necessary for resource management including access for timber stand management and livestock grazing, and access for wildfire prevention and suppression.

Table 4-1: Human Use rating distribution summary for the **Deschutes National Forest.**

Rating Factor	No Use	Low	Moderate	High
Community Ties	81%	4%	4%	11%
Special Forest Products	9%	23%	37%	32%
Developed Recreation	69%	4%	12%	15%
Dispersed Recreation Sites	5%	30%	52%	12%
Dispersed Recreation Uses	0%	13%	43%	43%
Ownership	63%	4%	8%	26%
Special Uses	52%	8%	16%	24%
Timber Use	4%	7%	13%	76%
Range Use	69%	12%	7%	12%
Fire Use	0%	1%	2%	97%
Lands and Minerals	73%	7%	5%	14%
Tribal Uses	0%	22%	15%	63%
Heritage Resources	0%	38%	0%	62%

Table 4-2: Human Use Rating distribution summary for the **Ochoco National Forest.**

Rating Factor	No Use	Low	Moderate	High
Community Ties	73%	10%	10%	7%
Special Forest Products	2%	13%	55%	30%
Developed Recreation	45%	13%	31%	11%
Dispersed Recreation Sites	2%	10%	57%	31%
Dispersed Recreation Uses	1%	4%	31%	64%
Ownership	53%	1%	13%	33%
Special Uses	62%	10%	6%	22%
Timber Use	2%	1%	8%	89%
Range Use	1%	4%	19%	75%
Fire Use	0%	0%	0%	100%
Lands and Minerals	9%	21%	15%	55%
Tribal Uses	0%	0%	9%	91%
Heritage Resources	0%	38%	0%	62%

Aquatics

Aquatic risk rating factors were developed to assess key processes associated with roads as they link to aquatic environments. The list

of factors includes: geologic hazard; road related sediment; floodplain off-channel habitat; riparian habitat function; flow effects; at risk fish populations; and wetlands. Geologic hazard relates to both active and dormant landslide terrain and its potential for mass wasting, and also to soil types and the potential for erosion (sediment movement).

Table 4-3: Aquatic risk rating distribution summary for the **Deschutes National Forest**.

Rating Factor	No Risk	Low	Moderate	High
Geologic Hazard	98%	1%	1%	0%
Fine Sediment	70%	24%	5%	1%
Flood Plane Function	84%	15%	1%	0%
Flow	84%	13%	3%	1%
Fish Populations (TES)	90%	6%	3%	1%
Wetlands	80%	19%	2%	0%

Table 4-4: Aquatic risk rating distribution summary for the **Ochoco National Forest**.

Rating Factor	No Risk	Low	Moderate	High
Geologic Hazard	12%	68%	16%	3%
Fine Sediment	49%	38%	13%	0%
Flood Plane Function	67%	17%	16%	0%
Flow	64%	29%	7%	0%
Fish Populations (TES)	80%	14%	4%	2%
Wetlands	74%	19%	7%	0%

Wildlife

Wildlife rating factors were developed to address five main issues: wildlife movement (dispersal and migration), human disturbance during critical periods (reproduction, rearing, wintering), habitat fragmentation, decline in habitats for threatened, endangered, and sensitive species, and reduction of key habitat elements (i.e. snags and down logs).

Table 4-5: Wildlife risk rating distribution summary for the **Deschutes National Forest**.

Rating Factor	No Risk	Low	Moderate	High
Migration	0%	26%	54%	20%
Special Habitats	0%	22%	41%	37%
Fragmentation	0%	28%	52%	19%

T&E Species	0%	57%	25%	18%
Snags / Down Logs	0%	21%	69%	10%

Table 4-6: Wildlife risk rating distribution summary for the **Ochoco National Forest**.

Rating Factor	No Risk	Low	Moderate	High
Migration	0%	33%	48%	19%
Special Habitats	0%	33%	40%	27%
Fragmentation	0%	45%	49%	6%
T&E Species	0%	71%	28%	1%
Snags / Down Logs	8%	52%	22%	17%

Botany

Botany rating factors were developed to address three main issues: special plant habitats, TES plant species, and noxious weeds and non-native invasive plant species. Special habitats considered in this analysis are wetlands and riparian plant communities; wet, moist and dry meadows; aspen stands; cottonwood bottomlands; and scablands. Road proximity to plant populations and/or habitat (within 200 feet), current use, and other factors were used to develop the overall ratings.

Table 4-7: Botany risk rating distribution summary for the **Deschutes National Forest**.

Rating Factor	No Risk	Low	Moderate	High
Special Habitats	65%	2%	23%	10%
T&E Species	72%	2%	12%	14%
Noxious Weeds	2%	21%	20%	57%

Table 4-8: Botany risk rating distribution summary for the **Ochoco National Forest**.

Rating Factor	No Risk	Low	Moderate	High
Special Habitats	37%	2%	42%	19%
T&E Species	61%	5%	29%	5%
Noxious Weeds	2%	17%	37%	44%

WATERSHED SUMMARIES

As mentioned earlier in this chapter the overall strategy for the benefit/risk assessment was to use fifth field watersheds as the basic

geographic scale to bound the analysis, and to look at individual road segments within that watershed. The fifth field watershed scale was selected for a number of important reasons. Given the scale of this analysis (two National Forests and a National Grassland), using fifth field watersheds would allow one to discern important interactions without getting bogged down in too much detail (sixth field), or become so watered down (fourth field or sub-basin) as to become meaningless. Focusing at this scale will also help to prioritize watersheds for further analysis based on resource concerns and potential restoration needs, identify issues within individual watersheds, establish the context for watershed analysis or project scale analysis, and identify potential management options for the main road system within a watershed.

Since the roads being analyzed in this process consisted of the major road network that accesses the Forests, and are the major travel routes within and through the Forest, it was important to not only look at a road within a particular watershed, but where it originated, where it was going to, and its relationship to other roads. For example, although there may not have been anything significant about a road within a particular watershed, if this road was the major access to a destination resort in another watershed, than the rating in this watershed would reflect that fact. Whereas, if there was another access to this resort that provided the primary access to the same members of the public or communities as the road being evaluated, then the road being evaluated would get a different rating within this watershed.

A watershed summary was developed for each of the 69 fifth field watersheds within the analysis area. It is believed that this is an important component of the process in that it provides an opportunity to look at a watershed in a holistic manor not just on a road-by-road perspective. The watershed boundaries are displayed on Maps IV-16 and IV-17 in the Appendices-Volume IV. A summary of benefits, problems, and risks associated with the roads within each watershed may be found in Appendices-Volume I, Appendix I-5.

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Chapter 5 - Opportunities and Recommendations

Step four of the road analysis process identified the level of use and need for each road segment as well as identified relative levels of environmental impacts and risks associated with the roads. This chapter describes how that information was used to identify opportunities and formulate recommendations for potential changes to road management activities and road improvement projects. Recommendations and guidance for further road analysis at the project or watershed scale is also provided at the end of the chapter.

ROAD MAINTENANCE OPPORTUNITIES

By comparing the access needs with the environmental risks identified in Step 4, an initial assessment was made as to whether present road management practices were sufficient for a given road segment or whether road maintenance efforts need to be adjusted either up or down to match present conditions. The following strategies were assigned to each road segment and are detailed in the Road Management Recommendation Tables in Appendices-Volume II for the Ochoco National Forest and Appendices-

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Volume III for the Deschutes National Forest. These recommended changes are also displayed on Maps IV-18 through IV-21 in the Appendices-Volume IV.

Management Strategies

Maintain As Is: (Existing maintenance efforts are generally in balance with access needs, no resource impacts are identified that would warrant a change in maintenance levels.)

Increase Maintenance Level: (Access needs identified exceed existing maintenance efforts and/or resource impacts have been identified that indicate a need to perform maintenance at a higher level.)

Decrease Maintenance Level: (Access needs identified do not support maintaining road at current level. Resource impacts are low and do not require maintenance to continue at present level.)

Implement Seasonal Travel Restrictions: (Access is generally needed during the snow free season, but resource concerns indicate a need for travel restrictions to be implemented at some time of the year to mitigate negative impacts.)

Close Year Around: (Access needs are low and only necessary for administrative or project use. Road can be closed between projects. Resource concerns or maintenance budget limitations indicate a need to close road between project activities.)

Decommission or Convert to Other Uses: (Full-sized vehicle access is no longer needed, road can be removed from the transportation inventory. Road can either be stabilized and returned to resource production or converted to other uses such as a motorized or non-motorized trail.)

Work Required

In addition to the management strategies listed above, the frequency of road maintenance activities was further categorized as needing to be performed on an annual, regular or "as needed" basis. These terms are defined where **annual maintenance** is performed at least one time per year, **regular maintenance** is performed at least every other year, and **as needed maintenance** occurs infrequently as conditions require, maybe once every 5 to 10 years.

The following tables summarize recommended changes to maintenance levels and maintenance work frequencies on the analysis roads:

Table 5-1: Summary of changes to Maintenance Levels and work frequencies for the **Deschutes National Forest**. (all units in miles)

Operational Maint Level	Total Length	Maintenance Level		Maintenance Frequency	
		Increase	Decrease	Increase	Decrease
1	14	2			
2	1422	66	35	4	73
3	268	72	1		

4	126	7			
5	55		1		
Total:	1886	147	37	4	73

Table 5-2: Summary of changes to Maintenance Levels and work frequencies for the **Ochoco National Forest**. (all units in miles)

Operational Maint Level	Total Length	Maintenance Level		Maintenance Frequency	
		Increase	Decrease	Increase	Decrease
1	9				
2	468	135		34	79
3	127	23	10	14	27
4	48				4
5	57				
Total:	709	158	10	48	110

For the Deschutes National Forest, the results of this part of the analysis show that the majority of the road system, or 1702 miles of road, should be maintained at the present level, 147 miles should have an increase in maintenance level, and 37 miles should have a decrease in maintenance level. Thirty five miles of roads in the analysis were identified to be put into a maintenance level 1 category, (closed), and no roads were identified for decommissioning. Approximately 32 miles were identified that would have a benefit to resource values if some type of seasonal restriction were implemented.

For the Ochoco National Forest, 541 miles of road, should be maintained at the present level, 158 miles should have an increase in maintenance level, and 10 miles should have a decrease in maintenance level. None of the roads in the analysis were identified for seasonal restrictions or additional closures.

It is important to note that these recommendations were made based on a comparison of access needs and environmental effects without consideration to available funding. Each road segment that had a change in maintenance level or work frequency was evaluated for the resulting effect to the maintenance costs associated with the change. The individual changes to maintenance costs for each road segment are shown in the Road Management Recommendation Tables in Appendices-Volume II for the Ochoco National Forest and Appendices-Volume III for the Deschutes. Those changes are summarized by maintenance level for the two forests in the tables below:

Table 5-3: Summary of changes to Maintenance Levels and corresponding costs for the **Deschutes National Forest**.

m/l	Current (OPML)			Proposed (OBML)			Difference	
	Miles	\$/mi	Cost	Miles	\$/mi	Cost	Miles	Cost
1	14	\$20	\$284	48	\$105	\$5,058	34	\$4,773
2	1422	\$176	\$250,448	1324	\$151	\$199,202	-98	-\$51,247
3	268	\$854	\$228,656	262	\$725	\$190,174	-5	-\$38,482
4	126	\$1,420	\$179,013	189	\$1,340	\$253,604	63	\$74,591
5	56	\$1,570	\$87,150	62	\$1,572	\$98,063	7	\$10,913
Total:	1886	\$395	\$745,551	1886	\$396	\$746,100	0	\$548

Table 5-4: Summary of changes to Maintenance Levels and corresponding costs for the **Ochoco National Forest**.

m/l	Current (OPML)			Proposed (OBML)			Difference	
	Miles	\$/mi	Cost	Miles	\$/mi	Cost	Miles	Cost
1	9	\$115	\$1,039	9	\$119	\$1,071	0	\$32
2	468	\$198	\$92,516	344	\$159	\$54,668	-124	-\$37,848
3	127	\$426	\$54,251	229	\$364	\$83,208	101	\$28,957
4	48	\$1,055	\$50,869	71	\$913	\$64,977	23	\$14,108
5	57	\$1,415	\$80,363	57	\$1,415	\$80,363	0	\$0
Total:	709	\$393	\$279,038	709	\$401	\$284,287	0	\$5,249

The results of the analysis show that if the road maintenance recommendations are implemented, there would be a net increase of 65 miles of Highway Safety Act (HSA) roads on the Deschutes and a net increase of 124 miles on the Ochoco. With compensating maintenance cost increases and decreases from changes to both maintenance levels and maintenance work frequencies, the overall change to the maintenance cost requirements would almost break even on the Deschutes, with an estimated overall increase of \$548, and would increase by \$5,249 on the Ochoco. However, as discussed earlier in the Existing Condition section of this report, our available maintenance funding would still only be about 1/3 of what is needed to fully maintain the road system to standard.

If we were to try to reduce the number of miles of road to that which we could fully maintain on the Deschutes National Forest with our present appropriated maintenance budget of \$750,000, we would only be able to maintain approximately 200 miles of our main road system. The remaining 1680 miles of our arterial and collector road system would either have to be closed or put into a self maintaining condition. On the Ochoco National Forest we could fully maintain less than 100 miles of our highest use roads before the current \$300,000 maintenance allocation is used up. With the amount of public, private, and administrative use identified for most of the roads on our road systems, it would not be feasible to close any significant number of these main roads. If maintenance levels are significantly reduced below where they are presently at today, we will not be able to provide the transportation service that is expected and necessary for our administrative and public needs.

ROAD IMPROVEMENT OPPORTUNITIES

In addition to the road maintenance opportunities discussed above, several road reconstruction projects and other opportunities for site specific resource improvement projects were identified during step four of the analysis. These projects are listed in the watershed summary sections of Chapter 4 and need to be further analyzed for feasibility at the watershed or project scale. If further analysis finds them to be desired projects, funding for implementation would be sought through any appropriate programs that come up in the future such as the Capital Investment Program, the 10% Road and Trail Program, the Deferred Maintenance Program, etc.

No site specific needs were identified for adding new roads to the main

transportation system through presently unroaded areas. However there are a few identified needs for realigning some sections of existing roads to alleviate resource concerns. These roads are identified in the spreadsheets and discussed in the watershed summaries. There will undoubtedly be occasional needs to add local roads to the system in the future to support various commercial and administrative needs. The need for and standard of any of these roads will be identified during project scale analysis and appropriate decisions made through site specific NEPA analysis.

KEY FINDINGS AND RECOMMENDATIONS

Current maintenance levels do not match access needs. The current road network provides adequate access for Public, Private, and Administrative needs; however this Roads Analysis indicates a need to adjust maintenance levels on some roads to better serve our road users and to minimize adverse effects to resources.

Recommendations

- Change objective maintenance levels to those proposed in the Road Management Recommendation Tables in the Appendices-Volumes II and III.
- Move roads from existing operational maintenance levels to proposed objective maintenance levels as opportunities and budgets allow.
- Adjust the Highway Safety Act road system as proposed on Maps IV-5 and IV-7 in the Appendices_Volume IV.
- Update Road Management Objectives for all roads in the analysis to reflect changes listed above.
- Update road data in INFRA and GIS databases.

Current maintenance budgets are insufficient to meet current maintenance needs. Recent forest-wide condition surveys indicate that our current road maintenance funding only meets approximately 30% of the annual maintenance needs on the Ochoco and Deschutes National Forests. The deferred maintenance backlog for both forests exceeds 70 million dollars and will continue to grow until additional funds can be found.

Recommendations

- Seek additional funding for road maintenance through regular appropriations.
- Seek additional funding sources and methods for rock replacement on aggregate surfaced roads.
- Seek new and additional funding sources for road maintenance and improvements through any available funding programs such as Capital Investment Programs, Payments to Counties, Forest Highway Programs, etc.
- Develop the Public Forest Service Road System as proposed on Maps IV-14 and IV-15 in the Appendices_Volume IV.

The current road system poses risks to water quality/quantity and fish habitat. Many roads were constructed in close proximity to streams or cross streams and contribute to sediment movement. Many culverts throughout the project area are too small (undersized) and are barriers to

fish passage. The current road system has increased the hydrologic network causing water to flow more quickly from most fifth field watersheds.

Recommendations

- Check for proper culvert sizes on all stream crossings.
- Check roads for adequate cross drainage during project analysis.
- Evaluate surfacing needs on roads with high traffic volumes.
- Adjust alignment away from riparian areas, as opportunities arise.
- Repair fill and cut slope failures in a timely manner, especially those located within landslide terrain.
- Seek additional funding for road maintenance.

The current road system and its uses pose risks to wildlife and wildlife habitats. Many roads were constructed in close proximity to streams or cross streams. Most areas outside of Wildernesses and Roadless Areas are well roaded. Many roads and land areas see extensive use year round by passenger vehicles and off-highway-vehicles (OHV), including over-snow vehicles. These factors often result in collisions, harassment, and displacement of animals, as well as the roads acting as a barriers to movement. In addition, the roads themselves often result in habitat loss and fragmentation.

Recommendations

- Relocate roads away from sensitive wildlife areas where feasible and when opportunities arise.
- Review and update forest-wide travel and access management policies for motorized traffic both on and off roads.
- Minimize wildlife harassment by enforcing existing travel management policies.
- Ensure existing seasonal restrictions are effective.
- Implement additional seasonal restrictions where needed.

The road system and its uses pose risks to plants and plant habitats. Some roads are affecting unique habitats and plant communities, including TES, and riparian and wetland habitats. In addition, some roads also affect access to gathering sites by Native Americans.

Recommendations

- Continue to treat, and monitor for noxious weed infestations along all roads.
- Relocate roads away from sensitive plant habitats where feasible and as opportunities arise.
- Review and update forest-wide travel and access management policies for motorized traffic both on and off roads.
- Minimize off-road ground disturbance by OHV's by enforcing existing travel management policies.

RECOMMENDATIONS FOR PROJECT ANALYSIS

According to the Forest Service Road Management Policy published January 12, 2001, all NEPA decisions signed after January 12, 2002, that involve any

of the items listed below, must be informed by a Roads Analysis.

1. Changes in access such as current use, traffic patterns or road standards (FSM 7712.13c). (e.g., closing currently open roads, opening currently closed roads, adding/changing seasonal restriction periods, changing maintenance levels, etc.)
2. When adding new roads to the transportation system (FSM 7712.12b). (This includes both new construction and newly acquired roads.)
3. Road construction, reconstruction, or decommissioning (FSM 7712.12b, FSM 7712.13c).

This Forest-Wide Roads Analysis satisfies the requirement for informing decisions about road related projects on our arterial and collector road system and on all maintenance level 3, 4, or 5 local roads included in this analysis. In some cases it may be sufficient to inform decisions about specific projects involving other local roads.

Although a Roads Analysis below the Forest Scale is not automatically required for individual projects, it is anticipated that watershed or project specific roads analysis will be necessary to inform most road related decisions at the project level. It is the responsibility of the Responsible Official to determine the need for such additional analyses. The flowchart on the following page was developed as a guidance tool to help the Responsible Official determine the need for roads analysis for individual projects.

When the Responsible Official determines that a watershed or project level roads analysis is needed, the analysis must be conducted according to the same six step process used in this analysis, but will be focused on the needs and issues associated with the local road system in the project area. The risk assessment tables and watershed summaries developed in step four of this analysis should provide good broad-scale background information when beginning site specific project analysis. The ID team who worked on the Forest-Wide Roads Analysis, (as listed in chapter 1), is available to help offer advice and guidance to project ID teams starting their project analyses.

Decision Guide for Project Analysis

Step 1: Will the NEPA decision involve any of the following?

- Changes in access such as current use, traffic patterns, or road standards
- Adding new roads to the transportation system. This includes both new construction and newly acquired roads
- Road construction, reconstruction, or decommissioning, where there may be adverse effects on soils and water resources, ecological processes or biological communities.

NO - Document and proceed with project planning

YES - Go to step 2

Step 2: Is the project on an arterial or collector road? If so, is the Forest-wide Roads Analysis adequate to inform the project decision?

YES - Reference Forest-Wide Roads Analysis and proceed with project planning
NO - Go to step 3

Step 3: Is there sufficient information within the Forest-Wide Roads Analysis, Watershed Analyses, ATM Plan, etc., to inform the project decision?

YES - Document and proceed with project planning
NO - Go to step 4

Step 4: Conduct Watershed or Project Scale Roads Analysis

- Ø Identify appropriate scale and intensity of road analysis to inform decision.
- Proceed with road analysis following six step process outlined in FS-643.
- Address the following items at a minimum:
 1. 1. Identification of needed and unneeded roads.
 2. Identification of road associated environmental and public safety risks.
 3. Identification of site-specific priorities and opportunities for road improvements and decommissioning.
 4. Identification of areas of special sensitivity, unique resource values, or both.
 5. Any other specific information that may be needed to support project level decisions.
- Proceed with project

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ROAD ANALYSIS

Appendix I-1 GIS Core Data Pilot Program Final Regional Report

Region and Forest(s): Region 6 - Ochoco and Deschutes National Forests and Crooked River Grassland

Pilot Title: Forest-wide Road Analysis

Key Contacts : Elvira Young
Jim Minogue

I. Introduction

A. Project Description:

- Forest Service policy requires that a forest-wide (mid-scale) roads analysis be completed within two years (January 12, 2003)
- The Forests (Deschutes and Ochoco) and Grassland proposed to analyze the "backbone" transportation system including the inter-relationship with State, Counties, Tribal, and other Federal agency transportation facilities. The project area covers 5,759,493 acres and 13,367 miles of roads.
- Roads analysis is an integrated ecological, social, and economic approach to transportation planning, addressing both existing and future roads.
- The Analysis is designed to be flexible and driven by road-related issues important to the public and to resource managers.
- Roads Analysis will neither make decisions nor allocate lands for specific purposes.
- Roads Analysis helps implement Forest Plans by identifying management opportunities that can lead to site-specific projects. It can also identify needed changes in Forest Plans to be addressed in Plan amendments or revisions.
- Roads Analysis provides information for decision making by examining important ecological, social, and economic issues.

The project selected a specialist from each resource area to serve as a primary Interdisciplinary Team (IDT) member. The primary specialist worked with their counterparts on the other units to get input into the analysis. The core team had 12 people and the whole team consisted of 25 people. There was also a GIS person fulltime assigned to get the data needed for the analysis and help the IDT with analysis.

B. Project Timeline:

Information Needs Assessment -This started as soon as the IDT was selected in March 2001. Most of the team members had not done an INA before this project so there was

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- ✦ Major Documents
- ✦ Monitoring Reports
- ✦ Roads Analysis

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some time needed up front to explain the process and how necessary it was to get the pre-work done before everyone met to do the assessment. Not all of the IDT knew what data was available on their units or how to set priorities on what data they needed first. Since this information was not supplied to the IDT along with their pre-work, it made the assessment process even more difficult. If the information had been provided at the start, the process might not have taken as long.

Data Collection - One of the units required data from our stream layer. The collection was in progress when the project started and was completed for the project. There were other layers needed from other agencies to answer questions in the Road Analysis process. This process was slow as not all the information was electronic.

Data Conversion - Data conversion was the most time-consuming activity. The road layer was the most important layer and trying to combine two Forest datasets together was very difficult. Combining overlaying routes, deciding which theme to use over another's, which attribute data in INFRA to use, adding in the Prineville BLM roads and adding their attribute data were all difficult since the two agencies are using different database applications. Private roads were not going to be analyzed by this project.

Streams were the next challenge, as we needed to route the streams on the Deschutes National Forest and combine them with the Ochoco National Forest and Crooked River Grassland. The streams were routed by June, and combined with the other Forest and Grassland by July. As the stream and road layers were being worked on, Cultural Resource layers were also being worked. Combining these three layers took the most GIS time.

The rest of the data conversion time was used to convert existing Ochoco data into the UTM 10 projection so that projections were consistent across agencies. Time to consolidate attributes was not available.

Analysis - Most of the analyses combined two or more layers. Once the layers were unioned together the IDT used ARCVIEW to do some of their queries. The rest of their queries were done in Excel and then reconnected to ARCVIEW to view results. There were queries that the GIS analyst needed to do, for example, calculating the road density by watershed. The analysis is on-going as the project is not complete.

Products - Most of the products are "GLOBS" (one coverage created from multiple layers). From the GLOBS, the data was converted to Excel or Access format to make queries. The results of these queries were connected back to ARCVIEW to display the results. There will be more products produced as the project progresses, most likely maps to display recommendations for public involvement and additional spatial analysis requests.

Management decision - From the results of the roads analysis, management will prioritize which watersheds for possible restoration opportunities.

This analysis will also help determine which road maintenance levels need to be raised or lowered, based on the level of use and resource issues. This will help determine the funding needs for road maintenance.

Final report - Due to the large amount of data for this analysis and the time required to combine it all, the final report will not be completed until March. The analysis portion of this project was scheduled to be completed by the end of January.

Project Timeline

	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov-Dec	Jan	Spring 2002
INA	■	■	■	■	■						
Data Collection		x	x	x	x						
Data Conversion					■	■	■				
Roads Analysis						■	■	■	■	■	■
Products						■	■	■	■	■	■
Management Decision											■
Final Report											■

C. Project Costs --- Cost Accounting Spreadsheets, attached as Appendix 1

D. ID Team Participation - The ID Team varied in their level of understanding of what they could do with GIS. Until this project, about 50% of the members used GIS on a

regular basis on their own. Most of the time the GIS analyst provided all the support to getting the data ready for analysis, answered the IDT questions and produced all of the maps. Now 90% of the team are able to make maps on their own or show results of their queries in ARCVIEW. It has increased their awareness of what they can do with GIS and has shown them that having common layers and attributes will help them get their work done more efficiently. For some this has been a steep learning curve and they would prefer the GIS analyst provide all the support.

E. GIS Core Data Layers Used in the Pilot - summary of use, Data Standards Reporting Spreadsheets attached as Appendix 2.

GIS Core Layer	Comments about Use
Roads and Trails	Used with core attributes Did not put the trails and roads together into one layer.
Streams	Used with the attributes set by the NW Hydrology Framework.
Water Bodies	Used core attributes
Watersheds	Used core attributes
Land	Used legacy data and did not change to meet the core attributes.
Terrestrial Ecological Units	Not Used - Does not exist
TEU: Soil	Used legacy data
TEU: Geology	Used legacy data
TEU: Geomorphology	Used legacy data where it existed.
TEU: Potential Natural Communities	Used legacy data
Topography	Used with core attributes
Existing Vegetation	Used legacy data
Wildlife Observations	Used legacy data
Wildlife Surveys	Used legacy data
Allotments	Not used, but meets core standards
Heritage Sites	Used legacy data (meets proposed attributes)
Heritage Surveys	Used legacy data (meets proposed attributes)
Developed Recreation Sites	Used legacy data

F. Status of National Applications for use by the Pilot - Infra Travel Routes was the only application used for this pilot. As for the rest of the national applications we tried to meet the core data standards suggested for the application.

II. GIS Core Layer Discussion

The layers on the Ochoco needed to be projected into UTM10 to match all other datasets. For members from the Ochoco it was hard to remember that the data was in meters. In addition, if they wanted to use it back on their unit they needed to either re-project the Core Pilot data to Stateplane or project the home data to UTM10.

Roads and Trails

Data Collection

There was very little data collection needed because most of the information needed for the analysis were available on the three units. What was missing were the connecting private and BLM roads.

Data Conversion:

Since this was the base layer and the reason for this analysis, both the spatial and tabular data needed to reflect what was really out there. We were faced with the problem of getting data from both Forests and the BLM into one database and not having the expertise to do so. As a result, we kept both forest Infra databases separate. A layer was created where the basic attributes were attached to the spatial data along with the BLM roads and their associated data.

Use of Layer:

This layer was used 100% of the time in combination with all of the layers listed below to analyze effects.

Adequacy of Core Attributes

There were many of the attributes that were not used during this analysis. However, the ones that were used were adequate.

Other Layer Comments

Need to decide how to store other agency's spatial and attribute data in Infra Travel Routes. In addition, how to include private roads and collect the data needed to be used in our analysis.

Streams:

Data Collection'

On the Deschutes N.F., stream survey locations were manuscripted and digitized from paper maps. On the Ochoco National Forest, there was no need for data collection.

Data Conversion:

On the Deschutes, one stream layer was created from multiple sources. Using the Stream Routing Tool, streams were routed to meet the NW Hydro Framework data standards using LLID as the core attribute. Once this was completed it was to be appended with the Ochoco and BLM layers. There were problems associated with this that prevented this work from being accomplished during the Pilot.

Use of Layer:

This was used to determine stream proximity to roads, where we have anadromous fish close to the roads and where we need to protect soils and other resources associated with streams.

Adequacy of Core Attributes;

The data attributes used were adequate.

Waterbodies

The layer existed and needed very little data collection or conversion.

Use of Layer:

To analyze their relationship to recreation areas and the impacts from access provided by the transportation system.

Adequacy of Core Attributes

The data attributes used were adequate.

Watersheds

This layer has existed for the Central Oregon area for approximately two years. This layer was created in cooperation with the BLM and NRCS. ArcInfo regions were created for HUC4, HUC5 and HUC6.

Use of Layer:

The watersheds were used to divide up the analysis area to help make recommendations of where to concentrate future analyses and restoration work.

Adequacy of Core Attributes

The data attributes used were adequate.

Lands

We did not do any data collection or conversion except to create common layers between the units. We did not region the entire layer together. Not all the region layers existed on both forests.

Use of Layer:

This layer was used to show where land ownership and land designations were.

Adequacy of Core Attributes

The data attributes used were adequate.

Soils

No data collection or data conversion was done.

Use of Layer:

This layer was used to identify where the highly erosive soils are in relation to the roads. Combined with slope and streams, analyzed sediment transport.

Adequacy of Core Attributes

The data attributes used were adequate.

Geology

No data was collected or converted. Used the 500k layer developed by the State.

Use of Layer

To see what parent material lay under the roads and their inherent stability.

Adequacy of Core Attributes

The data attributes used were adequate.

Geomorphology

No new data was collected or converted. Used what existed.

Use of Layer

Combined with the roads, analyzed where potential slides, slumps and fault might occur.

Adequacy of Core Attributes

The data attributes used were adequate.

Potential Natural Communities

Data Collection

This existed on both Forest Service Units but not on the BLM Unit.

Data Conversion:

There was inconsistency of how the attributes were created between the two Forest Service units and there needed to be coordination between the two to create a common set. We created one layer carrying all of the attributes from both.

Use of Layer

This was used to help determine where potential habitat was and how the roads affected it. It was also used to determine where to add wet areas to the waterbodies layer for swamps, seeps and springs.

Adequacy of Core Attributes

The data attributes used were adequate.

Topography

No data collection

Data Conversion

We used 10 meter DEMS.

Use of Layer

This layer was used to determine elevation and to calculate slope and aspect. This was one of the layers that was used in the majority of the analyses.

Adequacy of Core Attributes

The data attributes used were adequate.

Existing Vegetation

No data collection was done.

Data conversion:

There were many different layers to use between the two Forests. On the Ochoco, classified satellite data was used and on the Deschutes, Photo Interpreted Vegetation and the Activity layer was used.

Use of Layer

This layer was used to identify habitat needs for wildlife. Analyzed the habitat in relation to the roads and if there was enough suitable habitat without fragmentation.

Wildlife Observations

Data collection:

Data was gathered from the US Fish and Wildlife Service.

Data Conversion:

Attribute data was in Oracle and from this, observation locations needed to be generated. There were many different layers where we have the various threatened, endangered and sensitive species.

Use of Layer

Wildlife observation points were used to analyze their relationship with roads.

Allotments

This layer was used only for display.

Developed Recreation Sites

Data Collection and Conversion

No new data was collected but what existed was converted to meet the core standard

Use of Layer

Where there was data it was used to display its location in relation to roads.

Adequacy of Core Attributes

The data attributes used were adequate

Heritage Sites

Data Collection and Conversion

Data that already existed on both Forests and the Grassland was used.

Use of Layer

The points, lines and polygons in this layer were overlaid with the roads to see how close the roads were to these features. From this information the archeologists were able to evaluate whether a road might affect the site.

Adequacy of Core Attributes

The data attributes used were adequate.

Heritage Surveys

This layer was not used. It would have been used if there had been more time to collect and verify a predictive model of where sites might be found.

III. Lessons Learned - report in terms of 1) The data; 2) The people; 3) The technology

A. What worked well: Getting a common data set across Central Oregon has gotten a lot of specialists' attention. They are now able to use the layers created in this pilot to do other province wide projects as well as local projects that cross Agency and Forest boundaries.

This project has helped the Forests to understand what data is out there and what they still need to work on. This put emphasis on the need for common data standards.

B. What could have worked better: Access to the data on the two Forests would have been better if we had better network speed. Because the network speed between the two Forests was slow, many IDT members copied the data and GIS layers on to their PCs. Putting data on individual PCs made updates hard to track.

C. Major obstacles/problems and their Resolutions -In terms of data, the major obstacle was combining road data between the units. It is becoming a common practice to share data and GIS layers between Forests and other agencies.

As the ID team was made up of employees from both Forests, they all needed to get computer profiles on both systems to access GIS layers and data. This did not always work even though they had access to both systems because permissions would not allow it. The decision was made to store all the project layers and data on one forest and copy layers and information on to the other when needed. This created a lot of maintenance work for the GIS Analyst. Tracking copies when updates were made etc. The ID Team had a hard time keeping up with what was where, so most made copies onto their own PC. As we continue to work on the access issue, we have also set up a team room where some of the analysis data is stored for the ID team to share.

Technology obstacles are network speed and shared access. We have not been successful at increasing network speed but have come up with band-aid solutions which all have pro's and con's. To get around the slow network, we have been copying the GIS layers on to both Forest's servers. Then some ID team members have copied that information on to their PCs. This has increased the work on everyone's part to make sure all have the same data when an update is made. This has the potential of creating too many copies and not knowing which one has the correct information. Shared access has been a problem because we have the originals on one forest and an IDT member is working on the other and many times they lose their connection and their data. The solution has been the same as for the network speed problem and that has not been the best solution.

D. Use of the National Applications - This pilot used Infra Travel Routes and without help from Curtis Day we would have had a harder time. The ID team needed to learn how to use event tables in Arcview.

Developing a process to combine the data with other layers to do analysis took time.

There were numerous problems associated with combining the two Oracle databases and we did not have the expertise to do it, so we did not tackle the problem and kept them separate. This created a problem for the ID Team until we created separate event tables and they did their analyses separately and then combined them together. This needs to be solved in the future because we are always crossing Forest boundaries and need to have the ability to see the data together.

Infra Travel Routes is not an easy application for the general users.

E. What could others learn from your experience? I underestimated what it would take to combine data. The challenges of combining two separate Forest Service datasets and another agency's took more time than I thought. Also learning how to use routes and getting the data combined with others layers for the analysis took a lot more than the estimated time. When we get all the different applications, there will be a need to learn how each works so that you can link one dataset to another to query from both.

F. Value of the pilot project :

1. Toward progress in the implementation of core data standards on your forest (and region). This has given the two Forests a jump on combining layers and having common data standards. There is still lots of work to be done in getting all the layers to meet core data standards but it has given the forests an idea of what it takes to get the job done. For the region it gives them an idea of how much time and effort it is going to take to combine datasets for all of the planned mergers of individual Forests. Lots of coordination and collaboration will need to take place in order to decide who's data are you going to use when they overlap and who has the data steward responsibilities.

2. In increasing awareness of use/capability of GIS to support management decisions. Among the forest ID team assigned to this project it has given them more of an understanding of what you can use GIS for and what it is capable of doing. Staff on the Forest has been given updates on this project so they also have a better understanding. As for most of the managers, there is still a need to understand the value of GIS to support management decisions.

3. Training: Everyone associated with this pilot has learned new skills. Arcview, Spatial Analyst, and Access.

Terrain Analysis training was given to the GIS Analyst and he found it to be of value. He was able to use what he learned and apply it to some of the analysis needs.

4. In increasing awareness on your unit of the Forest Service in addressing geospatial issues.

Presentations have been made to the Forest Leadership team as to the role of GEB and GAC. PowerPoint presentations of the issues the GAC is working on have also been presented. Both of these have also been shared with GIS personnel on both Forests. Aside from the presentations, the Forest Leadership Team has a very low level of understanding of what is going on Nationally. However with continued information on what the GEB and GAC are doing they are becoming aware of the issues and what needs to be done.

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Appendix I-2

Roads Analysis INA Summary Report

Appendix I-2: Roads Analysis INA Summary Report

Layer	Attribute	Number of Requests	# Weeks to Prepare		BLM Done by	Comments
			DES	OCH		
1990 RPA						
	<i>Resource values</i>	1	0	0		Existing info., book
	Layer Total:	1	0	0		
1995 PI Layer						
	<i>Location</i>	1	0	0		Des. Cover, Och. Has Veg polys.
	<i>Type</i>	1	0	0		
	Layer Total:	2	0	0		
Activities						
	<i>Location</i>	2	0	0		Low Pri., Take what we have. Och 2 week to update
	<i>Type</i>	2	0	0		Harv., Fuel treatments, disturbance, etc.
	Layer Total:	8	0	0		
Annual Monitoring Report						
	<i>Costs, revenues</i>	2	0	0		Document, existing info.
	Layer Total:	2	0	0		
Aquatic populations						
	<i>Location</i>	2	1	1		H. Pri., Fish only, get data from Districts. Need to unifi the covers
	<i>Type</i>	2	0	0		H. Pri., Species - fish, amphibians, invertebrates. Fish only, get data from Districts. Need to unifi the covers
	Layer Total:	6	2	2		
Calving Areas						
	<i>Location</i>	2	2	1		H. Pri., Och. - In Forest Plan Des. - Wild. Will get
	<i>Type</i>	2	0	0		
	Layer Total:	6	2	1		

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
Caves						
	<i>Location</i>	1	1	1		<i>M. Pri., Dispersed Rec. Feature Major ones only. Rec will get.</i>
	<i>Type</i>	1	0	0		<i>Bend Fort Rock has a cover</i>
	<i>Visitor days</i>	1	0	0		<i>Use if available</i>
	<i>Layer Total:</i>	7	3	3		
Climate						
	<i>Precipitation - in inches</i>	1	0	0		<i>Pricip. Map by state or NOAA. GIS will get</i>
	<i>Layer Total:</i>	1	0	0		
Community						
	<i>Density</i>	10	0	0		<i>M. Pri.</i>
	<i>Incorporated, unincorporated</i>	10	0	0		<i>M. Pri.</i>
	<i>Location</i>	10	1	1		<i>H. Pri., US Censis data, etc. COCC library has a source</i>
	<i>Origin</i>	10	0	0		<i>M. Pri.</i>
	<i>Size population</i>	10	0	0		<i>H. Pri.,</i>
	<i>Layer Total:</i>	54	2	2		
County						
	<i>Age</i>	10	0	0		<i>H. Pri.</i>
	<i>Attitudes</i>	10	0	0		<i>H. Pri.</i>
	<i>Communities</i>	7	0	0		<i>H. Pri.</i>
	<i>Education</i>	10	0	0		<i>H. Pri.</i>
	<i>Employment - Diversity index</i>	7	0	0		<i>H. Pri.</i>
	<i>Employment - Numbers by sector</i>	7	0	0		<i>H. Pri.</i>
	<i>Employment - Unemployment</i>	7	0	0		<i>H. Pri.</i>
	<i>Income - Transfer payments</i>	7	0	0		<i>H. Pri.</i>
	<i>Income - Poverty Level</i>	7	0	0		<i>H. Pri.</i>
	<i>Income - Sector, ave by</i>	7	0	0		<i>H. Pri.</i>
	<i>Land Use</i>	1	0	0		<i>H. Pri.</i>

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Land Use Plans - document</i>	7	0	0		<i>H. Pri.</i>
	<i>Payments to</i>	1	0	0		<i>H. Pri.</i>
	<i>Racial composition</i>	10	0	0		<i>H. Pri., US Censis data, etc.COCC library has a source</i>
	<i>Religious affiliations</i>	1	0	0		<i>H. Pri.</i>
	<i>Social Organizations: Cohesion</i>	1	0	0		<i>H. Pri.</i>
	<i>Social Organizations:</i>	3	0	0		<i>H. Pri.</i>
	<i>Social Organizations:</i>	3	0	0		<i>H. Pri.</i>
	<i>Social Organizations:</i>	3	0	0		<i>H. Pri.</i>
	<i>Social Organizations:</i>	3	0	0		<i>H. Pri.</i>
	<i>Social Organizations: Resiliency</i>	4	0	0		<i>H. Pri.</i>
	<i>Social Organizations: Resiliency</i>	4	0	0		<i>H. Pri.</i>
	<i>Social Organizations: Resiliency</i>	4	0	0		<i>H. Pri.</i>
	<i>Social Organizations: Resiliency</i>	4	0	0		<i>H. Pri.</i>
	<i>Zoning</i>	1	0	0		<i>H. Pri.</i>
	<i>Layer Total:</i>	132	0	0		
Cultural Plants						
	<i>Location</i>	2	0	0		<i>L. Pri., No GIS or DB use anedotal from Tribes, may have tabular data</i>
	<i>Species</i>	2	0	0		<i>L. Pri.</i>
	<i>Layer Total:</i>	4	0	0		
DEMS						
	<i>Aspect</i>	9	0	0		<i>H. Pri., Och. Need to convert to 10m</i>
	<i>Elevation</i>	9	0	0		<i>H. Pri., DEM Analysis - 4500'band, GIS wil Generate, Och.</i>
	<i>Geomorphic Landform</i>	13	0	0		<i>H. Pri., Och. Need to convert to 10m</i>
	<i>Slope</i>	2	0	4		<i>H. Pri., Location of 0-15%, 16-25%, 26-35%, 36-50%, 51-70%, 71-90%, 91+%, (and others +- 30%) Och. Need to convert to 10m. Jim will talk w/Bill on methods.</i>
	<i>Valley Bottom Width</i>	1	1	1		<i>H. Pri., Terrian analysis Och. Need to convert to 10m</i>
	<i>Layer Total:</i>	77	3	27		

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
Dispersal						
	<i>Location</i>	3	0	0		<i>H. Pri., Des. Issue - Generate from Veg., Och. - NA</i>
	<i>Type</i>	3	0	0		<i>H. Pri., Owl Classification - Des. Issue</i>
	<i>Layer Total:</i>	6	0	0		
FARSITE						
	<i>Aspect</i>	3	0	0		<i>Product</i>
	<i>Fuel model</i>	3	0	0		<i>Product</i>
	<i>Slope</i>	3	0	0		<i>Product, percent</i>
	<i>Layer Total:</i>	9	0	0		
FFIS						
	<i>Costs</i>	2	0	0		<i>Reports, existing info.</i>
	<i>Layer Total:</i>	2	0	0		
Financial statements						
	<i>Costs, revenues</i>	1	0	0		<i>Reports, existing info.</i>
	<i>Layer Total:</i>	1	0	0		
Fire Occurrence						
	<i>Location</i>	2	0	1	<i>Jun</i>	<i>Both Forests need to add 2000 data</i>
	<i>Type</i>	2	0	0		<i>H. Pri., Both Forests need to add 2000 data</i>
	<i>Year</i>	2	0	0		<i>H. Pri., Both Forests need to add 2000 data</i>
	<i>Layer Total:</i>	6	0	1		
Fire Resource Points						
	<i>Location</i>	3	2	0		<i>H. Pri., Do from 1" scale maps, heads up digitizing</i>
	<i>Type</i>	3	0	0		<i>H. Pri., fire camps, helispots,</i>
	<i>Layer Total:</i>	6	2	0		

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
Firewood Areas						
	<i>Location</i>	1	0	0		<i>Have paper map, Y/N by road. No GIS needed.</i>
	<i>Name</i>	1	0	0		
	<i>Layer Total:</i>	2	0	0		
Flood Plain						
	<i>Location</i>	2	0	0		<i>M/L Pri., Outside data, EPA, FEMA? Check with Des. Co. to proto type a model</i>
	<i>Type</i>	1	0	0		<i>M/L Pri., 100 year, Crook Co. See Howard Becker.</i>
	<i>Layer Total:</i>	6	0	0		
Fuel Model						
	<i>Location</i>	2	0	1		<i>H. Pri., Put Des. & Och. Together need cross walks</i>
	<i>Type</i>	2	0	0		<i>H. Pri., Put Des. & Och. Together need cross walks</i>
	<i>Layer Total:</i>	4	0	1		
Fuels, Natural						
	<i>Location</i>	1	1	1		<i>L Pri at this scale</i>
	<i>Type</i>	1	0	0		<i>L Pri at this scale</i>
	<i>Layer Total:</i>	2	1	1		
Geology						
	<i>Location</i>	1	0	0		<i>In SRI classifications & State Geolgy map</i>
	<i>Ptype</i>	1	0	0		<i>In SRI classifications & State Geolgy map</i>
	<i>Layer Total:</i>	30	0	0		
Geothermal Sites						
	<i>Location</i>	1	0.2	0		<i>H. Pri., Och. - NA, Geol. Will provide lease areas</i>
	<i>Status</i>	1	0	0		<i>H. Pri., Och. - NA, Geol. Will provide lease areas</i>
	<i>Layer Total:</i>	2	0.2	0		

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
Glacial Terrain						
	<i>Age</i>	9	0	0		<i>Des. - Generate from SRI for this scale.</i>
	<i>Distribution</i>	9	0	0		<i>Des. - Generate from SRI for this scale.</i>
	<i>Location</i>	9	2	0		<i>Des. - Generate from SRI for this scale.</i>
	<i>Type</i>	9	0	0		<i>Landforms: Des. - Generate from SRI for this scale.</i>
	<i>Layer Total:</i>	36	2	0		
Ground water						
	<i>Location</i>	1	0	0		<i>L Pri at this scale</i>
	<i>Layer Total:</i>	1	0	0		
Heritage						
	<i>Locations</i>	2	0	8		<i>H. Pri., Points, lines, polys: Des. -Updates on Districts. SO 1.5 year out of date. (Och. - Stephany Cooper)</i>
	<i>Type</i>	2	0	0		<i>H. Pri., Des. -Updates on Districts. SO 1.5 year out of date. (Och. - Stephany Cooper)</i>
	<i>Layer Total:</i>	10	0	16		
Historic Transportation Routes						
	<i>Location</i>	1	0	1		<i>H. Pri., Och. - In LMP see codeing. Summit Trail in Heritage cover. Des. - NA</i>
	<i>Type</i>	1	0	0		<i>H. Pri., Summate Trail in Heritage layer</i>
	<i>Layer Total:</i>	2	0	1		
ICBEMP						
	<i>Economic factors, trends</i>	2	0	0		<i>H. Pri., Reports, existing info.</i>
	<i>Socal factors</i>	2	0	0		<i>H. Pri., Reports, existing info.</i>
	<i>Layer Total:</i>	4	0	0		
Improvements						
	<i>Jurisdiction</i>	2	0	0		<i>H. Pri., Public, Private</i>

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Location</i>	2	2	2		<i>H. Pri., Some in INFRA, on paper for water see Real Property DB and Kerl.</i>
	<i>Type</i>	2	0	0		<i>H. Pri., Electronic sites, water</i>
	<i>Layer Total:</i>	12	4	4		
Irrigation Canals						
	<i>Location</i>	1	0	0		<i>In INFRA and BOR?</i>
	<i>Type</i>	1	0	0		<i>In INFRA and BOR?</i>
	<i>Layer Total:</i>	2	0	0		
Labor Trends						
	<i>Report</i>	1	0	0		<i>Report, existing</i>
	<i>Layer Total:</i>	1	0	0		
Landslide Terrain						
	<i>Location</i>	13	1	0		<i>H. Pri., Des. - Add 8 polygons at this scale. Otherwise 52 wks. for full detail. Photo interpretation</i>
	<i>Status</i>	1	0	0		<i>H. Pri., Active/dormant: Add 8 polygons at this scale, mor detail at other scales</i>
	<i>Layer Total:</i>	30	3	0		
Large Fire History						
	<i>Location</i>	3	0	0		<i>L. Pri., Och. 1 wk. For full detail.</i>
	<i>Type</i>	3	0	0		<i>L. Pri., Greater then 100 ac.</i>
	<i>Year</i>	3	0	0		<i>L. Pri.,</i>
	<i>Layer Total:</i>	9	0	0		
Late Successional Rerves						
	<i>Location</i>	1	0	0		
	<i>Type</i>	2	0	0		
	<i>Layer Total:</i>	6	0	0		

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
LEK Sites						
	<i>Location</i>	1	3	0	<i>now</i>	<i>H pri. Can use paper. See Fort Rock District, ODF&W, BLM by end of May</i>
	<i>Type</i>	1	0	0		<i>H pri.</i>
	<i>Layer Total:</i>	2	3	0		
LRMP						
	<i>Allocations</i>	1	0	1		<i>Category, MA-F7Och. - match INFRA</i>
	<i>Location,</i>	1	0	1		<i>Och. - some updates. Not needed at this scale</i>
	<i>Reports</i>	1		0		<i>Outputs, costs, revenues by resoutce area</i>
	<i>Layer Total:</i>	42	0	15		
Mars						
	<i>Outputs</i>	1	0	0		<i>Report, existing</i>
	<i>Layer Total:</i>	1	0	0		
Material sources						
	<i>Location</i>	3	1	0		<i>H pri. Des. - See CFF & Keri, Shawn Servos</i>
	<i>Type</i>	3	0	0		<i>H pri. rock pits, queries, cinter pits, borrow pits, road cuts used to borrow fill</i>
	<i>Use levels</i>	1	0	0		<i>active or not</i>
	<i>Layer Total:</i>	11	1	0		
Mazama Ash Isopach						
	<i>Ages</i>	9	0	0		<i>H pri. Des. Issue: 3 - 4 large polys for now.</i>
	<i>Depth</i>	9	0	0		<i>H pri. Des. Issue: 3 - 4 large polys for now.</i>
	<i>Engineering properties</i>	9	0	0		<i>H pri. Des. Issue: 3 - 4 large polys for now.</i>
	<i>Location</i>	9	0.2	0		<i>H pri. Des. Issue: 3 - 4 large polys for now. 2 wks. For full detail.</i>
	<i>Layer Total:</i>	36	0.2	0		
Migration Routes						

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Location</i>	3	0.5	0		<i>H pri. Monte will update.</i>
	<i>Type</i>	3	0	0		<i>H pri. Which species?</i>
	<i>Layer Total:</i>	6	0.5	0		
Mining Claims						
	<i>Location</i>	1	0	4	?	<i>Low Pri., Unknown data source</i>
	<i>Status</i>	1	0	0		<i>Low Pri.</i>
	<i>Type</i>	1	0	0		<i>Low Pri., Keri will do for self</i>
	<i>Layer Total:</i>	3	0	4		
Municipal Watershed						
	<i>Improvements</i>	1	0	0		<i>M. Pri.</i>
	<i>Location</i>	4	1	0		<i>M. Pri., In Fores Plan split out</i>
	<i>Name of city</i>	1	0	0		<i>M. Pri.</i>
	<i>Type</i>	1	0	0		<i>M. Pri. Water treatment systems, Access restriction, location of constructed improvements, road management objectives.</i>
	<i>Layer Total:</i>	16	4	0		
Noxious Weeds						
	<i>Location</i>	2	0	0		
	<i>Species</i>	1	0	0		
	<i>Treatments</i>	1	0	0		
	<i>Layer Total:</i>	7	0	0		
OHV Areas						
	<i>Location</i>	1	1	0		<i>Och. - Done (Dick Deforth), Des. - Ask Bend/Fort Rock, Marv is working on it.</i>
	<i>Use</i>	1	0	0		<i>OHV use: Code authorized vs unauth. Och. - Done (Dick Deforth), Des. - Ask Bend/Fort Rock, Marv is working on it.</i>
	<i>Layer Total:</i>	3	2	0		
Ownership						

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Location</i>	1	0	0	<i>now</i>	
	<i>Owner</i>	1	0	0		
	<i>Layer Total:</i>	12	0	0		
Past Fuel Treatments						
	<i>Location</i>	1	4	8		<i>M. Pri., Des. - some from Harvest. No natural</i>
	<i>Type</i>	1	0	0		<i>M. Pri.,</i>
	<i>Year</i>	1	0	0		<i>M. Pri., 20 years to present</i>
	<i>Layer Total:</i>	4	8	16		
Plant Associations/Plant						
	<i>Location</i>	3	0	0		
	<i>Type</i>	5	0	0		<i>Scabland plant associations and communities, rock cairns, soil types, roads</i>
	<i>Layer Total:</i>	20	0	0		
PLSS						
	<i>Location</i>	3	0	0		<i>Township, Section, Range</i>
	<i>Range</i>	3	0	0		
	<i>Section</i>	3	0	0		
	<i>Township</i>	3	0	0		
	<i>Layer Total:</i>	37	0	0		
Range Allotment						
	<i>Location</i>	1	0	0		<i>L. Pri.</i>
	<i>Number of cows</i>	4	0	0		<i>L. Pri.</i>
	<i>Plans</i>	4	2	2	<i>Jun</i>	<i>L. Pri. Data source unknown, Time a guess</i>
	<i>Season of use</i>	4	0	0		<i>L. Pri.</i>
	<i>Layer Total:</i>	29	8	8		
Rec Sites, Developed						

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Location</i>	2	1	1		<i>H. Pri., Use CFFs, LMRP and points from Marv Lang.</i>
	<i>Type</i>	2	0	0		<i>H. Pri., Type of site</i>
	<i>Use Levels</i>	2	0	0		<i>H. Pri., Existing, Ave., Persons at one time</i>
	<i>Use Type</i>	1	0	0		<i>H. Pri.</i>
	<i>Layer Total:</i>	16	3	3		
Rec. Sites, Dispersed						
	<i>Improvements</i>	1	0	0		<i>L. Pri.</i>
	<i>Location</i>	1	12	12		<i>L. Pri.</i>
	<i>Resource Concerns</i>	1	0	0		<i>L. Pri.</i>
	<i>Size</i>	1	0	0		<i>L. Pri.</i>
	<i>Type</i>	1	0	0		<i>L. Pri.</i>
	<i>Use Level</i>	1	0	0		<i>L. Pri.</i>
	<i>Layer Total:</i>	12	24	24		
Regional Economic Profile						
	<i>Economic statistics</i>	1	0	0		<i>Published reports.</i>
	<i>Layer Total:</i>	1	0	0		
Research Natural Areas						
	<i>Location</i>	2	0	0		
	<i>Layer Total:</i>	2	0	0		
Resource accomplishment						
	<i>Outputs, costs</i>	1	0	0		<i>Report</i>
	<i>Layer Total:</i>	1	0	0		
Riparian Plant Communities						
	<i>Existing Vegetation</i>	1	0	0		<i>L. Pri.</i>
	<i>Location</i>	1	24	20		<i>L. Pri., To get full detail later: Des. 24 wks., Och. 20 wks.</i>
	<i>Plant Associations</i>	1	0	0		<i>L. Pri.</i>

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Layer Total:</i>	7	72	60		
Riparian Reserves						
	<i>Length</i>	2	0	0		
	<i>Location</i>	2	1	0		<i>Des. Need streams finished</i>
	<i>Type</i>	2	0	0		
	<i>Width</i>	2	0	0		
	<i>Layer Total:</i>	16	4	0		
Roadless						
	<i>Location</i>	1	0	0		
	<i>Name</i>	1		0		
	<i>Type</i>	1	0	0		
	<i>Layer Total:</i>	43	0	0		
Roads						
	<i>Access travel mgt</i>	6	0	0		<i>Work with paper maps</i>
	<i>Accident records on FS Roads</i>	2	2	2		<i>L. Pri., Not at this scale, may need for step 4</i>
	<i>Annual, def., Capital</i>	5	0	0		<i>To put to events</i>
	<i>Ave daily traffic</i>	10	0	0		
	<i>Clearing Width</i>	6	0	0		<i>Product, generated as a buffer.</i>
	<i>Closed roads - with gate, barrier,</i>	10	1	0		<i>Eng will input, some available</i>
	<i>Desnsity-Miles / unit area</i>	2	0	0		<i>Analysis</i>
	<i>Easements, right of ways, mtce.</i>	3	0	0	<i>Jun</i>	<i>In paper Atlas, not needed at this scale. For full detail: Des. 4 wks., Och. 1 wk.</i>
	<i>Economics roads data table (</i>	8	0	0		<i>Analysis output</i>
	<i>Fish passage culvert</i>	1	2	2		<i>Des. On paper</i>
	<i>Functional Class (FS only)</i>	11	0	0		
	<i>Highway Safety Act Road</i>	13	0	0		<i>Written description</i>
	<i>INFRA – features like slumps,rock</i>	13	0	0		<i>For full detail: Des. 4 wks., Och. 2 wks.</i>
	<i>Jurisdiction</i>	7	0	0		<i>Derived from cross with ownership</i>

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Location</i>	1	0	0	Jun	<i>also BLM, County, State and Other Feds w/label</i>
	<i>Locations of gates, barriers,</i>	6	1	0		
	<i>Locations w/in 50, 100, 200, 300,</i>	9	0	0		<i>Analysis - buffering</i>
	<i>Maintenance level</i>	10	0	0	Jun	<i>(open/closed)</i>
	<i>Objective Maintenance Level</i>	13	0	0		
	<i>Resource needs</i>	6	0	0		<i>(What does the road provide access for.) Data base. Analysis output</i>
	<i>Road hazard analysis data base</i>	2	0	0		<i>Not at this scale, may need for step 4</i>
	<i>Roads financial analysis product/</i>	2	0	0		<i>Analysis</i>
	<i>Route Status</i>	13	0	0		
	<i>Surface type (for locations below)</i>	10	2	0	Jun	<i>BLM - Rough by June</i>
	<i>Traffic classification (vehicle</i>	7	0	0		
	<i>Travel time from RS and Guard</i>	3	0	0		<i>Analysis</i>
	<i>Layer Total:</i>	530	38	8		
Rock Hounding Areas						
	<i>Location</i>	1	0	0		<i>Use Paper map</i>
	<i>Type</i>	1	0	0		<i>Use Paper map</i>
	<i>Layer Total:</i>	4	0	0		
ROS						
	<i>Classification</i>	2	0	0		<i>Imbedded in LRMP</i>
	<i>Location</i>	2	1	0		<i>Imbedded in LRMP</i>
	<i>Layer Total:</i>	4	1	0		
Slope Erosion Hazard						
	<i>Location</i>	9	0	0		<i>Model or calssify from field and aerial photos? Full detail: Des. 52 wks</i>
	<i>Type</i>	1	0	0		<i>Model or calssify from field and aerial photos? Full detail: Des. 52 wks</i>
	<i>Layer Total:</i>	22	0	0		

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
Soils						
	<i>Erosion potential</i>	1	0	0		<i>Interp. From soil Scientist. Des. 52 wks to complete</i>
	<i>Location</i>	1	0	6	<i>now</i>	<i>BLM - half done Och. - SRI 90% done, 6 wks to complete</i>
	<i>Type</i>	1	0	0		
	<i>Layer Total:</i>	48	0	24		
Special Forest Products						
	<i>Access restrictions</i>	1	0	0		<i>Low Pri. Not needed at RA scale</i>
	<i>Location</i>	1	4	0		<i>Low Pri., Land allocations, access restrictions, identifying collectors.</i>
	<i>Type</i>	1	0	0		<i>Low Pri.</i>
	<i>Layer Total:</i>	13	12	0		
Special-use Permit Sites						
	<i>Critical design vehicle</i>	1	0	0		
	<i>Location</i>	1	1	0		<i>Location of sites, travel restrictions, roads. Och. - Mapped points need to connect to INFRA. Alice Doremus coordinator.</i>
	<i>Type</i>	1	0	0		<i>of special-use permit,</i>
	<i>Layer Total:</i>	12	5	0		
Stream						
	<i>303d category</i>	1	1	0		<i>Des. 100K, Need to convert to 24K Och. 24K</i>
	<i>Class</i>	2	0	0		
	<i>Condition</i>	1	0	0		
	<i>Density</i>	2	0	0		<i>Analysis product</i>
	<i>Fish barriers location and</i>	1	1	0		<i>From Culvert survey</i>
	<i>Gaging stations</i>	1	0	0		
	<i>Length</i>	3	0	0		
	<i>Location</i>	13	8	0		
	<i>Monitoring sites</i>	1	0	0		
	<i>Name</i>	2	0	0		
	<i>Order</i>	2	0	0		

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Reaches</i>	1	0	0		
	<i>RHCA's and riparian reserves</i>	1	0	0		
	<i>Rosgen class, channel type</i>	2	4	4		
	<i>Routing number</i>	1	0	0		
	<i>Stream road crossings</i>	2	0	0		<i>Analysis</i>
	<i>Survey Locations</i>	2	0	0		
	<i>Uses</i>	1	0	0		
	<i>Woody Debris</i>	1	0	0		
	<i>Layer Total:</i>	139	61	8		
Stream - delivery zone						
	<i>Distribution of zone</i>	13	0	0		<i>Analysis result</i>
	<i>Location</i>	13	0	0		<i>Analysis result</i>
	<i>Layer Total:</i>	26	0	0		
Structures						
	<i>Location</i>	3	2	2		<i>Real property DB, check what it contains</i>
	<i>Type</i>	2	0	0		<i>Real property DB, check what it contains</i>
	<i>Layer Total:</i>	23	6	6		
Survey and Manage						
	<i>Location</i>	1	0.2	0		<i>ISMS not connected</i>
	<i>Species</i>	1	0	0		
	<i>Layer Total:</i>	6	0.4	0		
TEP Habitat						
	<i>Location</i>	1	0	1		<i>In Programatic BA</i>
	<i>Type</i>	1	0	0		<i>In Programatic BA</i>
	<i>Layer Total:</i>	2	0	1		
TEP Nest Sites						

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Location</i>	1	0	1	Jun	<i>In Programatic BA</i>
	<i>Type</i>	1	0	0		<i>In Programatic BA</i>
	<i>Layer Total:</i>	2	0	1		
TES Plants Species						
	<i>Location</i>	1	0	0		<i>Botany will check Och. Status</i>
	<i>Species</i>	1	0	0		
	<i>Layer Total:</i>	2	0	0		
Timber						
	<i>Milpond values</i>	1	0	0		<i>Published Material</i>
	<i>Layer Total:</i>	1	0	0		
Timber Harvest						
	<i>Date</i>	1	0	0		
	<i>Land allocations</i>	4	4	0		
	<i>Location</i>	1	2	4		<i>BLM - some will check</i>
	<i>Suitable</i>	4	3	2		
	<i>Treatment type</i>	1	0	0		
	<i>Volume</i>	1	3	1		
	<i>Layer Total:</i>	35	39	30		
Trailhead						
	<i>Location</i>	1	2	1		<i>H. Pri., Point layer, attach to infra. Do with Developed Rec.</i>
	<i>Parking capacity</i>	1	0	0		
	<i>Type</i>	1	0	0		<i>H. Pri., Of use</i>
	<i>Layer Total:</i>	8	6	3		
Trails						
	<i>Location</i>	1	2	0	now	<i>Only need trailheads. (BLM - in GTRN and Milican area GPS's)</i>

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Season of use</i>	1	0	0		<i>Only need trailheads</i>
	<i>Type</i>	1	0	0		<i>of use. Only need trailheads (Also code authorized vs unauth.)</i>
	<i>Layer Total:</i>	6	4	0		
Travel Access						
	<i>Forest Plan Access Standards and Management areas, restrictions</i>	1	1	0		<i>Use what we have for this scale.</i>
	<i>Travel access area restrictions</i>	1	1	1		<i>Use what we have for this scale.</i>
	<i>Travel access area restrictions</i>	1	2	2		<i>Use what we have for this scale. 2 - 3 wks to update if needed.</i>
	<i>Layer Total:</i>	3	4	3		
TSPIRS						
	<i>Reports/ cost, revenues</i>	2	0	0		<i>Published report</i>
	<i>Layer Total:</i>	2	0	0		
Unique Plant Communities						
	<i>Location</i>	3	1	1		<i>Not avail and not needed at this scale.</i>
	<i>Plant Associations</i>	3	0	0		<i>Not avail and not needed at this scale.</i>
	<i>Type</i>	3	0	0		<i>Not avail and not needed at this scale.</i>
	<i>Layer Total:</i>	9	1	1		
Unique Special Habitats						
	<i>Location</i>	3	4	4		<i>Des. - 4 wks to update, Och. - 4 wks to update</i>
	<i>Type</i>	3	0	0		<i>Not avail and not needed at this scale.</i>
	<i>Layer Total:</i>	6	4	4		
Vegetation						
	<i>Crown closure</i>	4	0	0		
	<i>Location</i>	2	0	0		
	<i>Plant Association</i>	5	0	1	Jun	<i>Des. - PI cover from 1999 Och. - ISAT data 25m pixels, ground truth BLM - Sat. interpretation</i>

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
	<i>Species</i>	1	0	0		
	<i>Stand Density</i>	1	0	0		
	<i>Structure</i>	3	0	0		<i>Dense/Old Structure Classes (large blocks)</i>
	<i>Type</i>	1	0	0		
	<i>Layer Total:</i>	39	0	4		
Vegetation						
	<i>Down woody debris</i>	1	0	0		<i>Polygon data from PAG-SC or PI</i>
	<i>Snag</i>	1	0	0		<i>Polygon data from PAG-SC or PI</i>
	<i>Layer Total:</i>	2	0	0		
Water Improvements						
	<i>Locationmanagement objectives.</i>	1	0	0		<i>See Improvements. of constructed improvements, road</i>
	<i>State Water rights data base</i>	1	0	1		<i>See Improvements</i>
	<i>Layer Total:</i>	14	0	4		
Water Sources						
	<i>Location</i>	9	1	0	<i>June</i>	<i>H. Pri., Fire wil do with Fire Resource points. Och. - classify, digitize</i>
	<i>Ownership</i>	1	0	0		<i>H. Pri.,</i>
	<i>Status</i>	1	0	0		<i>H. Pri.,</i>
	<i>Type</i>	1	0	0		<i>H. Pri., Wells, springs, etc.</i>
	<i>Use levels</i>	1	0	0		<i>H. Pri.,</i>
	<i>Layer Total:</i>	40	5	0		
Waterbody						
	<i>303d classification</i>	6	0	0		
	<i>Location</i>	9	0	0	<i>Jun</i>	<i>BLM - Rough by June</i>
	<i>Type</i>	1	0	0		<i>Lakes, ponds, impoundments, etc</i>
	<i>Layer Total:</i>	52	0	0		

<i>Layer</i>	<i>Attribute</i>	<i>Number of Requests</i>	<i># Weeks to Prepare</i>		<i>BLM Done by</i>	<i>Comments</i>
			<i>DES</i>	<i>OCH</i>		
Watersheds						
	<i>A 1&2 (high priority restoration)</i>	1	0	0		
	<i>Fifthfield</i>	3	0	0		
	<i>Key watersheds,</i>	14	0.2	0		<i>Need Crosswalk old to new</i>
	<i>Location,</i>	13	0	0		
	<i>Monitoring category 1&2</i>	1	0.2	0		<i>Need Crosswalk</i>
	<i>Sixthfield</i>	1	0	0		
	<i>Layer Total:</i>	64	1	0		
Wetlands						
	<i>Location</i>	1	4	4		<i>USF&W has, see Jerry Cordova</i>
	<i>Type</i>	1	0	0		
	<i>Layer Total:</i>	6	8	8		
Wild and Scenic River						
	<i>Location</i>	1	0	0		
	<i>Name</i>	1	0	0		
	<i>Layer Total:</i>	4	0	0		
Winter Range						
	<i>Location</i>	1	1	0	<i>Jun</i>	<i>Wildlife will get.</i>
	<i>Type</i>	1	0	0		
	<i>Layer Total:</i>	2	1	0		

Deschutes & Ochoco National Forests Crooked River National Grassland

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Projects & Plans

Large Area Planning Documents

ROAD ANALYSIS

Appendix I-3

Management Direction

For

Wildlife and Aquatic Resources

WILDLIFE

The Deschutes and Ochoco National Forest both prescribe wildlife objectives and Standard and Guidelines Forest-wide and for all management allocations. In addition the following management allocations were established specifically for wildlife objectives:

DESCHUTES NATIONAL FOREST

Metolius Wildlife Primitive

Home



SCHEDULE OF PROPOSED ACTIONS

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PLANS, ANALYSES, ASSESSMENTS

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- ✦ **Major Documents**
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- ✦ **Roads Analysis**

▶ **Links**

▶ **Evaluate Our Service**

We welcome your comments on our service and your suggestions for improvement.

Forest

Deschutes National Forest

1001 SW Emkay Drive
Bend, OR 97702

(541) 383-5300

Ochoco National Forest

3160 N.E. 3rd Street
Prineville, OR 97754

(541) 416-6500

**Crooked River National
Grassland**

813 S.W. Hwy. 97
Madras, OR 97741

(541) 475-9272



To protect and perpetuate a predominantly unmodified natural environment where natural ecological process can continue. To provide habitat for a variety of wildlife species, and to specifically maintain or enhance habitat for bald eagles. To provide an opportunity for primitive recreation within this undeveloped forest environment. Trails and roads will be designed, constructed, and maintained to minimum standard needed to achieve objectives and goals of this Management Area. Some roads may be closed by entrance treatment, or by obliteration and revegetation. Temporary closures may be used to limit access during sensitive nesting or migratory times. Unneeded roads and skid trails will be closed and returned to a natural vegetative condition.

Metolius Spotted Owl

Manage habitat to enhance the carrying capacity for Northern Spotted Owls. Road management to restrict public access within ¼ mile of active nests during March 1 through July 31 may be needed.

Management Area 3 Bald Eagle

Manage habitat to enhance the carrying capacity of bald eagles. Nesting habitat and foraging areas will be protected and enhanced. Road networks will be designed to facilitate easy control of access during nesting season. Road management will minimize public disturbances within ¼ mile of active nests from 1/1 through 8/31, to prevent disruption of nesting activities. Additional measures may be needed to prevent disturbance to juveniles from 9/1 to winter departure. Road closures are needed to restrict public access to the feeding area along Browns Creek at the Sheep Bridge fall kokanee spawning stream and along the west side of Wickiup Reservoir from 9/15 until freeze over.

Management Area 4 Spotted Owl

Manage habitat to enhance the carrying capacity for Northern Spotted Owls. Road management to restrict public access within ¼ mile of active nests during 3/1 through 7/31 may be needed.

Management Area 5 Osprey

Manage the habitat to enhance the carrying capacity for osprey. Road management may be needed to

restrict public access to nesting areas during 4/1 through 8/31.

Management Area 7 Deer Habitat (Winter and Transition habitats)

To manage vegetation to provide optimum habitat conditions on deer winter ranges while providing some domestic livestock forage, wood products, visual quality and recreation opportunities. Target open road densities shall average 1.0 - 2.5 miles per square mile in each implementation Unit, unless impacts to deer can be avoided or the proposed project would result in a net benefit to deer habitat.

Three Sisters Lynx Analysis Unit

Open road densities will be managed for a maximum goal of 2 miles of road per square mile. Minimize building of roads directly on ridge tops or areas identified as important for lynx habitat connectivity. Prohibit motorized vehicle use on all roads except arterial and collector roads within denning habitat from the period of April 15 to July 15. Limit public use on temporary roads, such as those constructed for timber sales or to access mines or leases, in lynx habitat. Dirt and gravel roads traversing lynx habitat should not be paved or otherwise upgraded in a manner that is likely to lead to significant increases in traffic volumes, traffic speeds, increased width of cleared ROW (right of way), or would foreseeably contribute to increases in human activity in lynx habitat.

OCHOCO NATIONAL FOREST

Eagle Roosting Areas

Provide winter roosting habitat for migrating bald eagles annually during the period December through April. The area will be free of potentially disturbing human activity in the vicinity of roosting areas from December 1 to May 1.

General Forest Winter Range and Winter Range

Big game use on winter range will be seen as the primary activity with other management activities and human intervention restricted, from December 1 to May 1. Habitat effectiveness for big game will be improved over time, due to increases in both quality

and quantity of thermal cover, and reductions in open road density. Road and trail use will be limited to one mile of open access per section, from December 1 to May 1; a greater density of trail and road access will be available during the remainder of the year, up to three miles per section.

Hammer Creek Wildlife/Recreation Area

Provide and maintain habitat diversity for a variety of wildlife species where open road density is minimal; and provide scenic, semi natural or natural appearing setting for non-motorized recreational opportunities. Access roads to trailheads will be open. All other roads will be closed to motorized use and rehabilitated after management projects are completed.

CROOKED RIVER NATIONAL GRASSLANDS

Antelope Winter Range

Manage for optimum winter range conditions for antelope. Harassment and stress on wildlife caused by motorized vehicle traffic will be reduced.

Metolius Deer Winter Range

Manage for big game winter range habitat. The implementation of seasonal road closures will reduce harassment and stress on wildlife from motorized traffic.

Rimrock Springs Wildlife Area

Provide unique habitat (wetlands, ponds, springs) within the juniper-sagebrush steppe.

EXISTING CLOSURES:

ODF&W delineated winter habitats throughout central Oregon. Separate designations of wintering areas were identified in each of the Forest Plans. In general the Forest designations are much smaller than those recognized by ODF&W. Throughout the analysis area there are seasonal closures in place for big game winter range, raptor nests, caves with bat populations, elk calving areas, green dot hunting closures, and year round closures. These closures were prescribed to protect habitats for species that are sensitive to human disturbance for all or a portion of their life cycle. Below is a list of the closures as well as a list of special management area designations with specific road related requirements to protect wildlife values.

Numerous roads or area closures prescribed in planning documents have not been closed due to funding or existing closure efforts are marginally effective. Current budget levels do not support adequate implementation or enforcement.

AQUATIC

Forest Plan direction for the roads analysis area encompasses five documents: Deschutes and Ochoco National Forest & Crooked River National Grassland Plans, Northwest Forest Plan, Infish, and Pac-Fish. Each of these documents outlines important management direction, especially for aquatic and riparian resources. In general, the overriding concern is for the maintenance and restoration of the riparian areas and stream systems resulting in improving native fish and aquatic species populations. This can include removal, redesign, rehabilitation or change of maintenance of roads that effect stream and riparian systems.

Roads Management Direction

RF-1. Federal, state, and county agencies should cooperate to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy and Riparian Management Objectives.

RF-2. For each existing or planned road, meet Aquatic Conservation Strategy and Riparian Management Objectives by:

- a. minimizing road and landing locations in Riparian Reserves
- b. completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
- c. preparing road design criteria, elements, and standards that govern construction and reconstruction
- d. preparing operation and maintenance criteria that govern road operation, maintenance, and management
- e. minimizing disruption of natural hydrologic flow paths, including diversion of stream flow and interception of surface and subsurface flow.
- f. restricting side casting as necessary to prevent the introduction of sediment to streams.
- g. avoiding wetlands entirely when construction new roads.

RF-3. Determine the influence of each road on Aquatic Conservation Strategy and Riparian Management Objectives through watershed analysis. Meet Aquatic Conservation Strategy and Riparian Management Objectives by:

- a. reconstructing roads and associated drainage features that pose a substantial risk.
- b. prioritizing reconstruction based on current and potential impact

to riparian resources and the ecological value of riparian resource affected.

- c. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy and Riparian Management Objectives and considering short-term and long-term transportation needs.

RF-4. New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of stream flow out of the channel and down the road in the even of crossing failure.

RF-5. Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is infeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.

RF-6. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.

RF-7. Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy and Riparian Management Objectives. As a minimum, this plan shall include provisions for the following activities:

- a. inspections and maintenance during storm events.
- b. inspections and maintenance after storm events.
- c. road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.
- d. traffic regulation during wet periods to prevent damage to riparian resources.
- e. establish the purpose of each road by developing the Road Management Objective.

Aquatic Conservation Strategy Objectives

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.
2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.
3. Maintain and restore the physical integrity of the aquatic system,

- including shorelines, banks, and bottom configurations.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
 5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
 6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
 7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.
 8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provided adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

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Appendix I-4 Issue Background Papers

Access Issue Statement:

The road system provides access for public, private, and administrative uses. Because historical patterns of use are changing and the agency's road maintenance budget is not currently able to keep up with increasing maintenance needs, changes to the road system may be necessary. There is a concern that any changes to the road system may affect access for goods and services provided.

Background

The Forest Service currently manages more than 380,000 miles of roads in the national forests and grasslands. These roads range from permanent, double-lane paved highways to single-lane, low standard roads intended to be used by only high-clearance vehicles. The majority of this vast road system was constructed to facilitate timber harvest or otherwise support timber management. Other administrative uses, commercial uses, and recreational activities have all benefited from the development of the forest road system.

The use of the road system has changed dramatically over the years from being predominantly used for support of timber management objectives to present day conditions where over 90 percent of use is

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estimated to be related to some form of recreation activity such as hunting, fishing, camping, hiking, skiing, berry picking, driving for pleasure, etc.

Along with the changing use patterns on the road system, and especially the dramatic increase in recreation traffic, the Forest Service road budget is not able to keep up with road maintenance needs. It is estimated that, nation-wide, the Forest Service has a growing \$8.4 billion dollar maintenance and reconstruction backlog and receives only 20 percent of the annual maintenance funding needed to maintain the road system to environmental and safety standards.

The shift in use patterns, changes in user expectations, and the inability of current road maintenance funding to keep up with road maintenance needs have led the Forest Service to conclude that finding new approaches to road management and new sources of road maintenance funding will be necessary to support resource management objectives now and into the future.

Social and Economic Issue Statement:

The existing road system plays an important role in support of local/regional social and economic sustainability. Based on recent road budget trends, we may not be able to afford to maintain our existing road system. Changes to the road system may have social and economic ramifications.

Background

The communities surrounding the Forests depend on the forests and grasslands to help meet their needs and the road system serves as the interface between the needs of the local communities (e.g. timber, forage, recreation) and the ecosystems themselves. As a result, the interaction of humans and ecosystems needs to be looked at in a broader context than the physical and biological.

From a historical prospectus it is evident that all of the local community's economies and cultural values were natural resource based and to a certain degree, especially in the more rural, less populated areas, still are. Livestock, agriculture, and timber were/are the backbone of the local economies and as a result strongly shaped the social fabric that still defines most of the communities today. The existing road system was developed largely in the context of this historical perspective.

The goods (e.g. timber, livestock) and many of the services (recreation, scenery supported by the Forests) are highly dependent on the types and location of roads that provide access for these uses. As a result, access to the resources on the Forests will continue to have a profound effect on both the economic and social dimensions of the communities that surround them.

Over all uses of the road system and public lands within the Zone is changing in character as a result of the changing social and economic conditions in the region, while at the same time changes in resource and road management policies on federal lands are influencing economic and social conditions.

Roads have become vital components of the human use of forested

systems. Without roads, developing the economic activity critical to the quality of modern life would have been difficult, and roads remain central to many forest uses today. With less emphasis on commodity production, mainly timber harvest, the current road system cannot be maintained given the existing funding structure. The Forests need to identify a road system that is affordable, meets both public and administrative access needs, and minimizes resource damage.

Recreation Issue Statement:

How and where does the existing and planned road system affect recreation areas, sites, and facilities?

Background

The Central Oregon area contains a unique mix of topography and vegetation, which; 1) invites recreation exploration, as well as destination recreation, and 2) allows for relatively easy vehicular access to many areas. Hence, the developed and dispersed recreation sites have, over the years been discovered and accessed by roads, many of which have been user created. Many of these roads are currently system roads, but there are many which are not. These user created roads tend to access dispersed recreation sites and opportunities such as caves, campsites, geologic features, etc. Developed recreation sites have system, county or state routes accessing them in most cases.

Many of the user created roads are accessing areas that may or may not be desirable to be accessed from a resource standpoint. There may be impacts to vegetation, water and wildlife from these user created roads. Erosion is a common concern as well as soil compaction and mass movement.

From a use/social standpoint, increased access to these areas, which could cause overuse of areas that are vulnerable from a resource standpoint exacerbating the impacts.

In general, the population and popularity of the Central Oregon area is consistently increasing, bringing more and more people who want to pursue developed and dispersed recreation opportunities. As the population ages, there is also an increase in the relative amount of motorized recreation activity, be it 4 wheel drive vehicle, OHV, snowmobile, etc.

Botany Issue Statement:

In some areas, roads may affect the long-term health and functioning of plant resources, including special habitats, such as wetlands and wet meadows, and Threatened, Endangered, and Sensitive plant populations. Roads are increasing noxious weed populations, which impact native plant communities.

Background

Wetland habitats may be impacted by increased sedimentation and changes in hydrologic function and water quality. A road may alter

the function of a stream's floodplain and/or off-channel habitat by changing drainage patterns. Roads may intercept runoff, which can accelerate erosion and lower water tables, increase sediment loading and delivery of toxic pollutants, change plant species composition by introducing noxious weeds, and degrade water quality. A culvert that is not functioning properly (for e.g., the culvert is under-sized and the hydraulic capacity is exceeded) may increase sediment into wetlands and streams. In some areas, productive wetlands have been converted to compacted road surfaces. Many of these habitats have had fill placed on top of existing habitat as roads are built through them. Road failures in landslide terrain can impact special habitats. The resulting changes in drainage patterns, soil composition, and introduction of noxious weeds from roadside shoulders may cumulatively result in significant alteration of the existing plant communities. Of these effects, those that affect the areas ability to receive, store and move water will likely have the greatest impact on a wetland's condition and function.

Other impacts could occur due to increased public access. There may be increased collecting of unique plant species that occur within special habitats. Roads may facilitate the use of off-highway vehicles into adjacent special habitats. High-use recreation areas, both dispersed and developed sites, may impact special habitats, such as wetlands and riparian areas. Recreation use also affects riparian plant communities. Roads may provide access for off-highway vehicles into riparian habitats. Dispersed and develop recreation can impact the health and vigor of riparian plants, depending on the level of reaction use.

Roads facilitate the establishment and spread of noxious weeds, which impact native plant communities. Areas scheduled for road reconstruction, as well as on-going maintenance activities, have a high risk of introducing and spreading noxious weeds, which can alter species composition and associated wildlife use within habitats such as meadows.

These types of uses will use more and more of system and user created roads to access recreation areas. Driving for pleasure is the number one recreation activity.

Wildlife Issue Statement:

Wildlife populations and habitats have been impacted by road systems and the resulting human activities associated with increased access to remote habitats. Road-associated factors are additive to that of habitat loss from roads and other activities. These cumulative impacts have led to several species becoming locally extinct or being listed as Threatened, Endangered, or Sensitive throughout their range.

The physical presence of the road and potential for collisions with cars has resulted in animals being killed when traveling between habitats, disrupted habitat selection processes for home ranges, reduced habitat suitability, allowed invasion of edge species and non natives, road associated habitats accumulate lead and other toxins that originate from motorized vehicles with potentially lethal effects, and altered migration movements.

Human associated activities have resulted in a reduced sense of security resulting in habitat avoidance, death from legal and illegal hunting, increased stress resulting in reductions in productivity or death, over-trapping, collection, and habitat degradation.

Background

With the increased western expansion of civilization has come an increased in the amount of roads, size of roads, volume of traffic, and type of vehicles. In their own way each of these have impacted wildlife populations and habitats. Areas in the west including Central Oregon have been experiencing the effects of roads and road related activities increase in the last decade. Local examples of these effects include: Deer, elk, and antelope migration routes have been altered due to several state highways. The expansion and sprawl of population centers has forced several sheet migrations into more restricted corridors. When these focused migration points come in contact with a state highway of the magnitude of Highway 97 numerous animals are killed yearly.

Wolf and grizzly bear were extirpated from Oregon several decades ago primarily due to hunting. Since that time the amount of human occupation and level of roading have increased to a level where it is unlikely populations could be restored. In places on the Deschutes and Ochoco N.F. road densities reach levels greater than 10 miles per square mile.

Contiguous blocks of habitat have been fragmented and habitats previously excluded from human intrusion accessed. Forest roads originally constructed to facilitate logging activities now facilitate numerous types of recreational activities. The popularity of these activities, increasing population base, and new technologies has increased the number and type of vehicles utilizing National Forests. This has resulted in higher traffic volumes on primary and secondary roads, increased violation of road and area closures, noise disturbance, and previously inaccessible habitats being disturbed by motorized and nonmotorized recreationalists.

Technology and human population growth are changing faster than the scientific knowledge regarding the associated effects. Some of the effects of roads and road associated human activities are well documented others are yet to be discovered. The effects of roads and road related activities vary by species; however, documented species-specific effects tend to remain consistent from one geographical area to another. The following is a summary of the findings of the Interior Columbia Basin Ecosystem Management Plan's comprehensive survey of existing literature regarding the effects of roads and road associated human activity:

Various road-associated factors can negatively affect habitats and populations of terrestrial vertebrates (Bennett 1991, Forman and Hersperger 1996, Forman and others 1997, Mader 1984, Trombulak and Frissell 2000). Effects of road-associated factors can be direct, such as habitat loss and fragmentation (Miller and others 1996, Reed and others 1996) or indirect, such as population displacement or avoidance in areas near roads in relation to motorized traffic and associated human activities (Mader 1984). Indirect effects can be subtle, such as the negative effects of all-terrain vehicles (Busack and Bury 1974, Lukenbach 1978) that can and do travel over a myriad of offroad and onroad conditions, and whose movements are

facilitated by road access. Negative factors associated with roads, and their specific effects on habitats and populations, are diverse and not always easily recognized. These factors go beyond the obvious, direct effects of habitat loss from road construction and maintenance, which affects all species.

1. Road construction converts large areas of habitat to nonhabitat (Forman 2000, Hann and others 1997, Reed and others 1996); the resulting motorized traffic facilitates the spread of exotic plants and animals, further reducing quality of habitat for native flora and fauna (Bennett 1991, Hann and others 1997). Roads also create habitat edge (Mader 1984, Reed and others 1996); increased edge changes habitat in favor of species that use edges, and to the detriment of species that avoid edges or experience increased mortality near or along edges (Marcot and others 1994).

2. Species that depend on large trees, snags, or down logs, particularly cavity-using birds and mammals, are vulnerable to increased harvest of these structures along roads (Hann and others 1997). Motorized access facilitates firewood cutting, as well as commercial harvest, of these structures.

3. Several large mammals are vulnerable to poaching, such as caribou, pronghorn, mountain goat, bighorn sheep, wolf, and grizzly bear (e.g., Dood and others 1985, 1986; Knight and others 1988; McLellan and Shackleton 1988; Mech and others 1970; Scott and Servheen 1985; Stelfox 1971; Yoakum 1978). Roads facilitate poaching (Cole and others 1997).

4. Wolves and grizzly bears experience chronic, negative interactions with humans, and roads are a key facilitator of such interactions (Mace and others 1996, Mattson and others 1992, Thiel 1985). Repeated, negative interactions of these two species with humans increases mortality of both species and often causes high-quality habitats near roads to function as population sinks (Mattson and others 1996a, 1996b, Mech 1973).

5. Carnivorous mammals such as marten, fisher, lynx, and wolverine are vulnerable to over-trapping (Bailey and others 1986, Banci 1994, Coulter 1966, Fortin and Cantin 1994, Hodgman and others 1994, Hornocker and Hash 1981, Jones 1991, Parker and others 1983, Thompson 1994, Witmer and others 1998), and over-trapping can be facilitated by road access (Bailey and others 1986, Hodgman and others 1994, Terra-Berns and others 1997, Witmer and others 1998). Movement and dispersal of some of these species also is believed to be inhibited by high rates of traffic on highways (Ruediger 1996) but has not been validated. Carnivorous mammals such as lynx also are vulnerable to increased mortality from highway accidents with motorized vehicles (as summarized by Terra-Berns and others 1997).

6. Reptiles seek roads for thermal cooling and heating, and in doing so, these species experience significant, chronic mortality from motorized vehicles (Vestjens 1973). Highways and other roads with moderate to high rates of motorized traffic may function as population sinks for many species of reptiles, resulting in reduced population size and increased isolation of populations (Bennett 1991). For example, in Australia, 5 million reptiles and frogs are estimated to be killed annually by motorized vehicles on roads (Ehmann and Cogger 1985, as cited by Bennett 1991). Roads also

facilitate human access into habitats for collection and killing of reptiles.

7. Many species are sensitive to harassment or human presence at particular use sites, which is often facilitated by road access; potential reductions in productivity, increases in energy expenditures, or displacements in population distribution or habitat use can occur (Bennett 1991, Mader 1984, Trombulak and Frissell 2000). Examples are human disturbance of leks (sage grouse and sharp-tailed grouse), of nests (raptors such as ferruginous hawk), and of dens (kit fox). Another example is elk avoidance of large areas near roads open to traffic (Lyon 1983, Rowland and others 2000), with the magnitude of elk avoidance increasing with rate of traffic (Wisdom and others 1999, Johnson and others 2000).

8. Bats are vulnerable to disturbance and displacement caused by human activities in caves, mines, and on rock faces (Hill and Smith 1984, Nagorsen and Brigham 1993). Cave or mine exploration and rock-climbing are examples of recreation that potentially reduce population fitness of bats that roost in these sites (Nagorsen and Brigham 1993, Tuttle 1988). Such activities may be facilitated by human developments and road access (Hill and Smith 1984).

9. Ground squirrels often are targets of recreational shooting ("plinking"), which is facilitated by human developments and road access (Ingles 1965). Most species of ground squirrels included in our analysis are local endemics; consequently, these small, isolated populations may be especially vulnerable to recreational shooting, potentially resulting in severe reductions or local extirpations of populations.

10. Roads often restrict the movements of small mammals (Mader 1984, Merriam and others 1988, Swihart and Slade 1984). Consequently, roads can function as barriers to population dispersal and movement of some species of small mammals (Oxley and Fenton 1974).

11. Many granivorous birds are attracted to grains and seeds along roadsides, resulting in high mortality from vehicle collisions (Vestjens 1973). For example, pine siskens and white-winged crossbills are attracted to road salt, which can result in mortality from vehicle collisions (Ehrlich and others 1988).

12. Terrestrial vertebrates inhabiting areas near roads accumulate lead and other toxins that originate from motorized vehicles, with potentially lethal but largely undocumented effects (Bennett 1991). In summary, no terrestrial vertebrate taxa appear immune to the myriad of road-associated factors that degrade habitat or that increase mortality. These multifaceted effects have strong management implications for landscapes characterized by moderate to high densities of roads, which is the typical pattern across large areas of the basin (figs. 21, 22). That is, about 51 percent of the basin supports road densities estimated as moderate, high, or extremely high (Quigley and others 1996).

Aquatics/Fisheries Issue Statement:

Aquatic populations of fish, amphibians, and invertebrates have been impacted by roads. As a result, stream systems have a reduced

capability to produce and maintain these populations due to increased stream temperatures and sediment, reductions in channel complexity, and channel constriction. Road crossings have affected the ability of fish populations and other aquatic species to migrate successfully into previously occupied habitat, or to have upstream genetic interchange.

There is a concern that roads are affecting water quality and quantity in terms of stream temperature and sediment. Increased drainage networks are affecting timing by delivering water with shorter lag times and higher peaks to stream systems. Stream channels across the forest have been impacted by roads causing stream channel aggradation, channel incision and changes in channel types. Wetlands and floodplains have been filled in and disconnected from their stream channels.

Background

Problems associated with roads that affect aquatic populations on both forests include increases in sediment from surface erosion and road fill failures. Fine sediment effects reproductive and rearing success of aquatic populations, and can decrease pool depth. Deep pools are an important habitat parameter for survival of fish adults and juveniles in winter and summer, as these areas provide modulated temperatures. Roads on both forests have constricted floodplains and stream channels, reducing habitat complexity and area, and ground water retention, along with the reducing the streams ability to respond to floods and other catastrophic events. Constriction of the channel cause changes in channel type and gradient, which can result in channel incision, which further contributes to decreases in aquatic habitats. In addition, roads paralleling streams interrupt the flow of riparian and upland materials to the stream system. Shade, large wood debris, subsurface water flow, and coarse sediment inputs have all been interrupted resulting in reduced habitat complexity and increased temperatures.

Perhaps the largest impact from roads on the fisheries, and to some extent the amphibian resources, has been in the form of reduced access to habitat from impassable culverts. Many stream crossings have culverts that are poorly designed not only for aquatic species passage but also for passage for flood flows. These culverts have effectively eliminated upstream passage for juveniles and in some cases adults. Genetic interchange is therefore limited in these areas to a downstream flow, although perhaps more importantly is the loss of upstream passage for aquatic species during summer low flows when cooler temperatures are likely in the headwater areas, which could result in mortality.

On the Deschutes and Ochoco National Forest 98 streams do not meet water quality standards and have been added to the 303d list for non-compliant streams. Of these streams, 51 are listed for temperature and 2 are listed for sediments. The other 35 occurrences are listed for various other habitat threatening parameters. In the Little Deschutes Sub-basin of the Deschutes Basin, 4 streams are listed for temperature and 0 for sediment. In the Upper Deschutes Sub-basin of the Deschutes Basin, 5 streams are listed for temperature and 2 are listed for sediments. On the Lower Crooked Sub-basin of the Deschutes Basin, 12 streams are listed for temperature and 0 are listed for sediments. In the Upper

Crooked Sub-basin of the Deschutes Basin, 30 streams are listed for temperature and 0 are listed for sediments. The existence of roads in our forest has been shown to contribute to the degradation of some streams through an increase in temperature and an increase in sediment.

Undersized culverts are a frequent occurrence in the Ochocos. It has been estimated by Jim Seymour, hydrologist on the Ochocos, that as many as 2/3 of the culverts are undersized. His definition of undersized is that the culvert is less than 80% of the stream bankfull width. Due to the constriction, water passing through undersized culverts have increased velocities and have contributed to scouring below the culverts. At times, this constriction causes sediment to be deposited on the upstream end, and shallow pools to form that would reduce the culvert carrying capacity.

Most of the arterial and collector roads are located in stream bottoms. In many locations, where the stream meanders the stream cuts into the road fillslope. Some roads cut into paleolandslides, and contribute to landslides. Paved roads being upgraded to meet wider national standards cause a larger disturbance area. Ditch maintenance provides another source of fine sediment for delivery to the streams. Roads intercept groundwater and surface water causing increased overland flow and greater erosion on road surfaces and below drainage structures. Inadequate cross drainage has caused many roads to become entrenched and berms to develop. Berms often confine water on the roadway, increasing the velocity and scouring. In many cases, there is a lack of relief culverts that would pull water off the road onto the hillslope. During field reviews of rainfall events, an estimated 10% of the water runs down the road. The high use of natural surface roads during the wet season can cause rutting which reduces the effectiveness of cross drains and contributes to an increase in sediment delivery. These cumulative impacts often cause the water and sediments to flow directly into the streams with a shorter lag time and a greater peak.

Road construction has required the removal of riparian vegetation to accommodate road right-of-way, improve visibility, and reduce the hazard of trees falling on the roadway. The removal of vegetation has caused a reduction in the shading of streams, thereby causing increased stream temperatures in our forest. The reduction of shade trees continues to affect the quality of stream water causing streams to fail to meet water quality standards. It is important to the health of the aquatic ecosystem that streams meet or surpass water quality standards.

Decreases in vegetation cover, the modification of slopes to accommodate roads, and surface water concentration on roads has lead to increases in sediments in the streams.

Historically, organic debris has plugged culverts at road crossings. Improper alignment and undersizing of road stream crossings has encouraged debris blockage. There are places where road culverts are dented by maintenance equipment, thereby reducing its design capacity. Other roads are equipped with culverts with an insufficient flow capacity. Plugged, damaged, and insufficiently sized culverts have caused streams to rise up onto the road and cause erosion or to "blow out" the road crossings. The increase in water flow on forest service roads has adversely affected the water quality causing the streams to fail to meet water quality standards.

Mass wasting has occurred on some forest roads, especially on steeper slopes. Mass wasting often severely affects road-stream crossing fills and transports fill and channel materials to higher order streams.

In the process of building roads, wetlands and floodplains have been filled in and disconnected from their stream channels. Wetlands and floodplains are crucial components of natural flood control. The cumulative effects are an increase in flood frequency in the watershed.

Roads and associated structures influence the quantity and timing of stream flows, resulting in impacts to downstream channels and aquatic ecosystems. Excessive outflow falls and increased velocity of stream flow have caused downstream channel aggradation. The cumulative effects are an increase in flood frequency in lower sections of the watershed.

In the past, roads have been evaluated and upgraded whenever money has been available. Usually money has been made available when a timber sale occurs. This has resulted in spotty evaluations of roads made only as a part of specific environmental analysis. This Roads Analysis will make evaluations of roads on a forest wide scale.

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APPENDIX I-5 Watershed Summaries

The overall strategy for the benefit/risk assessment was to use fifth field watersheds as the basic geographic scale to bound the analysis, and to look at individual road segments within that watershed. The fifth field watershed scale was selected for a number of important reasons. Given the scale of this analysis (two National Forests and a National Grassland), using fifth field watersheds would allow one to discern important interactions without getting bogged down in too much detail (sixth field), or become so watered down (fourth field or sub-basin) as to become meaningless. Focusing at this scale will also help to prioritize watersheds for further analysis based on resource concerns and potential restoration needs, identify issues within individual watersheds, establish the context for watershed analysis or project scale analysis, and identify potential management options for the main road system within a watershed.

Since the roads being analyzed in this process consisted of the major road network that accesses the Forests, and are the major travel routes within and through the Forest, it was important to

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not only look at a road within a particular watershed, but where it originated, where it was going to, and its relationship to other roads. For example, although there may not have been anything significant about a road within a particular watershed, if this road was the major access to a destination resort in another watershed, than the rating in this watershed would reflect that fact. Whereas, if there was another access to this resort that provided the primary access to the same members of the public or communities as the road being evaluated, then the road being evaluated would get a different rating within this watershed.

A watershed summary was developed for each of the 69 fifth field watersheds within the analysis area. It is believed that this is an important component of the process in that it provides an opportunity to look at a watershed in a holistic manner not just on a road-by-road perspective. Following is a brief summary of benefits, problems, and risks associated with the roads within each watershed. The watershed boundaries are displayed on Maps 16 and 17 in the Map Appendix

Badlands

The Badlands watershed is located on the Fort Rock side of the Bend/ Fort Rock Ranger District. The majority of lands within the watershed are administered by the Forest Service (northeast part of the District) and by the BLM. Within the BLM lands, there are large blocks of private lands. The watershed drains east from NFS lands onto BLM lands. There are no perennial or intermittent streams.

The main travelways include Road 18, which provides access through the watershed, and road 23, which provides access from Highway 20. Recreation facilities and attractions include access to the East Fort Rock OHV trail system, Sand Springs, and Lava Cycle Cave. Recreational activities also include dispersed driving, camping, OHV, and hunting activities. The watershed contains a number of recognizable features including China Hat, Pine Mountain, East Butte, and the PotHoles. Utilities include power lines, and the Pine Mountain electronic site. Administratively the area is managed for timber, range, and other uses.

Roads within the Badlands Watershed rate low to moderate for special habitats, TES plants, and noxious weeds. Currently, the noxious weed species of primary concern is spotted knapweed. Though all roads have the potential to increase the spread of noxious weeds, Road 2017 has existing spotted knapweed populations that threaten sensitive plant habitat. Roads 23 and 2312 bisect fragile buckwheat flats/rhyolite pumice areas, elevating concerns about off-road vehicle use and introduction and spread of noxious weeds, and

travel through sensitive plant (green-tinged paintbrush and pumice grape fern) populations. Regarding TES plants, known sensitive plant populations occur along Roads 2017, 23, 2312, and 2510; other roads in this analysis area cross through sensitive plant habitat.

Roads that rated high concerns for wildlife habitats include 2017, 201500, 2017501, 23, 2312, 2313, and 2315. Roads 2017, 2017500, 2017501 provide access to sage grouse nesting and migration, and mule deer winter range areas. Road 23 provides access to a very heavy mule deer movement area and is just south of key sage grouse areas. Roads 2312 and 2313 provide access to mule deer winter range, elk wintering near Mahogany Butte, and Lava Cycle Cave. Road 2315 passes through an important deer movement area. All of these roads can interfere with sage grouse nesting and seasonal migrations, and mule deer and elk movements.

There are no roads of concern for the aquatic portion of this analysis.

Potential future management considerations:

- Control OHVs from going off the roads in the vicinity of Roads 2017, 2017500, 2017501, and 23. These areas contain important sage grouse nesting habitat.
- Roads 2017 (on the Ft. Rock side), 23, 2312, 2313, and 2315 pass through winter range/migration route areas. Recommend efforts, such as signing, to reduce traffic speeds. Road improvements, such as widening and straightening, that would promote higher traffic speeds may further impact deer. Seasonal closures are encouraged in all winter range areas.
- Consider seasonal closures on Road 2312 to reduce access to Lava Cycle Cave.

Bear Creek

The Bear Creek watershed drains the southwest side of the Maury Mountains into Prineville Reservoir (Crooked River). Bear Creek is the main stream channel with tributaries of Little Bear, Kloochman, Faught, and Friday Creeks.

Private and Bureau of Land Management (BLM) administered lands dominate this watershed. The Forest Service (FS) administers a minor amount of land. The ranching community is a large presence within the watershed and is dependent on State Highway 27 and FS Road 1640 that accesses the Paulina valley and Prineville. Road 1640 is a school bus route. Two reservoirs, Kloochman and Antelope, are used for irrigation and recreation. Hunting use is high and the area has become a focus for wild turkey hunting. The watershed has a high level of Native American artifacts, and "pot hunting" has historically been a major influence. Administratively, the area is actively managed for timber, range, and other uses.

The underlying lithology is composed of over 80 percent highly erosive pyroclastics, landslide debris, and unconsolidated gravels. The remainder is a combination of intrusive basalts and extrusive olivine basalt flows. The dormant landslide terrain comprises 1 percent of the landform. The following roads rated out as the highest concern for aquatics: 16, 1640, and 17. A combination of moderately rated factors and road position (either mid-slope or stream bottom)

lead to the concerns. Roads 16 and 1750 had moderate concerns for geology, flow, and fish passage and crossed mid-slope. Road 1640 parallels Kloochman Creek and had moderate concerns for fine sediment and floodplain interaction, while Road 17 had the same types of concerns and parallels Faught Creek.

County and State roads with high traffic and existing noxious weed populations contribute to noxious weed seed movement. These roads were rated high for noxious weed concerns. Noxious weeds of concern include diffuse and spotted knapweed, Canada thistle, sulfur cinquefoil, and Mediterranean sage. The Bear Creek Watershed has largely not been surveyed for Sensitive plants. There is only low probability of finding Sensitive plants.

Road 17 was rated as high from a wildlife standpoint because it is within 400 yards of a bald eagle nest and is used almost year round.

Potential future management considerations:

- Replace undersized culverts along Road 16.

Bear Creek (Bridge)

The Bear Creek (Bridge) watershed is located on the Prineville side of the Lookout Mountain Ranger District. Bear Creek is the main stream within the watershed.

The southern end of the watershed is mainly public land administered by the Forest Service. The watershed grades to private land with some interspersed BLM-administrated lands to the north. There are no major communities within the watershed. State Highway 27, which borders the watershed to the south, is a major portal road through the Ochoco NF from McKay Creek (Prineville) over to Highway 26. The Lucky Strike and Valley View mines are within the watershed. In addition, there are a number of other agate claims. Whistler Springs is a public agate collecting area. Road 27 borders the Mill Creek Wilderness, the largest and most heavily used Wilderness on the Ochoco NF. There are a number of trailheads along this road and hunting use is high. Administratively, the area is actively managed for timber, range, and other uses.

The underlying lithology is composed of 3 percent landslide debris and 89 percent highly erosive pyroclastics and unconsolidated gravels. The remaining 8 percent is a combination of intrusive basalts and extrusive rhyolite flows. The active and dormant landslide terrain comprises 10 percent of the landform. The following roads rated out as the highest concern for aquatics: 2730, 2730250, and 2735. A combination of moderate and low rated factors leads to the concerns. Road 2730 has a high rating for geology because it is on landslide terrain, a moderate rating for fine sediment and flow, and a low rating for floodplain and fish. This road is a gravel surface road that is midslope. The road crosses Bear Creek and twelve intermittent streams. Road 2730250 has a high rating for geology, a moderate rating for fine sediment and flow, and a low rating for fish and wetlands. The road is native surface with some spots of gravel. The road is midslope in landslide terrain and crosses Rail Creek, Scotty Creek, and several intermittent streams. Road 2735 has a high rating

for geology; a moderate rating for fine sediment, floodplain, and flow; and a low rating for fish. The road crosses the north fork of Bear Creek, parallels Bear Creek and crosses Scotty and Grant Creeks. The road crosses landslide terrain.

The paved portion of Road 27 was rated as high risk for noxious weeds with existing spotted knapweed and Canada thistle populations. Roads 2730, 2735, and 2750 were rated as moderate risk. All roads in this watershed were rated as low or no risk to special habitats and sensitive plants.

Road 27 has a high rating for wildlife because it runs along the top (north) of the Mill Creek Wilderness and fragments interior habitats adjacent to the Wilderness. Road 2730 was rated high because it parallels and enters winter range area. Road 2735 was also rated as high because the seasonal road closure is not implemented on the ground and adds to road density in winter range.

Potential future management considerations:

- Consider relocating portions of Road 27 for wildlife concerns. This road provides access to two trails, the Mill Creek Wilderness, and rock hounding/locatable mineral sites. Alternately, close a section in the middle (north of the Mill Creek Wilderness) to eliminate "loop" access. The section between Whistler and the end of the asphalt is a good candidate for closure because it is constructed on landslide scarp. Closing a section of the road would maintain access to the two trailheads. If a section of the road is closed, need to increase maintenance on other roads to account for increased traffic. Continue to maintain an east-west route through the area (compliant with the Highway Safety Act).
- Continue treating noxious weeds (specifically spotted knapweed).
- Upgrade/replace undersize culvers on Roads 2730 and 2730250.
- Modify the seasonal closure method on Road 2735. The current method is not effective.

Bridge Creek

The Bridge Creek watershed drains the north side of the Ochoco Mountains into the John Day River. Bridge Creek is the main stream channel with tributaries of Johnson, West Branch Bridge, Thompson, and Nelson Creeks. Two very small reservoirs, Nelson and Thompson, are located in this watershed and are primarily for stock watering.

The south end of the watershed is mainly public land administered by the Forest Service. The watershed grades to private land with substantial blocks of BLM administrated lands to the north. The National Park Service administers the John Day Fossil Beds National Monument within this watershed. The town of Mitchell is within the watershed, as well as Mitchell's public water supply. Road 2630 is a major east-west route across the north end of the Ochoco NF. Road 2630 runs from Highway 26 in the west to Road 12 in the east. Road 2630 road is the historically important Summit Trail (MA-F7), and within this watershed there are high value, single lane, native surface segments. It also borders the Bridge Creek Wilderness, one of three Wildernesses on the Ochoco NF. Road 2210 is a major access portal

from Mitchell and the surrounding ranching communities to the Ochoco NF from the north. Road 2210 is part of the old Prineville to Mitchell Highway. The Crystal Springs church camp is also accessed from this road. There are a number of historically significant trails, particularly the Maxwell and Vowell. There is a lot of dispersed recreation use in this watershed, particularly hunting. One major campground, Wildwood, is located in the watershed.

Administratively, the area is actively managed for timber, range, minerals, and other uses.

The underlying lithology is composed of 30 percent Mesozoic sedimentary rocks, 6 percent basalt, 10 percent landslide debris and 54 percent highly erosive pyroclastics and unconsolidated gravels. The active and dormant landslide terrain comprises 10 percent of the landform. On NFS lands, steelhead trout and redband trout are the primary fish species of concern. There were only four roads that were rated, and two had high concern for aquatic risk. A combination of moderately rated factors and road position (either mid-slope or stream bottom) lead to the concerns. Road 2210 had moderate concerns for all risk factors except fish and geology which were rated high. This road parallels West Branch Bridge Creek for much of its length, is on landslide terrain, and has steep switchbacks in the upper drainage. Road 2630, while located near the top of the watershed, rated high due to landslide terrain and crossing the upper end of Bridge Creek. Bridge Creek contains steelhead trout.

There were low road-related risks to special habitats and Sensitive plants in this watershed. Road 2210 has a high risk rating for noxious weeds. A large hound's tongue population occurs along this road. Road 2630 was rated as a moderate noxious weed risk due to hound's tongue and Canada thistle populations along this road.

Road 2630 has a high wildlife rating because it parallels the wilderness boundary where there is a high potential for wolverine use. Illegal firewood along this road is a huge problem because firewood cutting remove important down woody debris habitat components.

Potential future management considerations:

- Begin or continue treating noxious weeds along Road 2210 (large population of hounds tongue).
- Upgrade/replace undersize culverts on Road 2210.
- Consider seasonal closures on Road 2630 during spring runoff to reduce sediment delivery.
- Consider closing loop access along Road 2630. This is an important wildlife "solitude" area. Closing loop access to large habitat blocks and primitive areas will reduce harassment.

Camp Creek

The northeastern part of the Maury Mountains makes up the headwaters of this watershed.

Ownership within the watershed is mostly private and BLM, with a minor amount of FS administered lands. Although there are no major communities, ranching is a significant presence within the watershed and depends on the few roads within the watershed. In particular,

Road 450 a level two road ties into County Road 127, which provides access to the Forest for private lands to the south. County Road 127, which borders the watershed on the south, is the major east-west access route north of Highway 20. There are a couple of small developed recreation sites, and Arrow Point is a major dispersed recreation destination. Administratively, the area is actively managed for timber, range, and other uses.

The underlying lithology is composed of 4 percent landslide debris and 77 percent highly erosive pyroclastics and unconsolidated gravels. The remaining 19 percent are extrusive basalt flows. The dormant landslide terrain comprises 4 percent of the landform. Road 16 rated out as the highest concern for aquatics. Road 16 has a high rating for geology, a moderate rating for flow and a low rating for fine sediment, floodplain, and wetlands. The road is a gravel midslope road on landslide terrain. The road crosses Double Creek, Wiley Creek and Wiley Tributary 1 as well as five intermittent tributaries.

Road-related risks to Sensitive plants in the Camp Creek watershed are low because there is low probability that Sensitive plants occur. There is a lack of surveys in this area. Special habitat concerns due to roads are primarily because of risk of invasion by noxious weeds. State Highway 380 and Crook County roads have high traffic and high potential to spread weeds.

There are no roads that were rated as a high concern for unique wildlife features or habitat characteristics.

Potential future management considerations:

- None

Crescent

The Crescent watershed is located on the Crescent RD. It drains the area to the west of the Upper Little Deschutes watershed. The Forest Service (Crescent RD) administers the majority of lands within the watershed. From NFS lands, the watershed drains east onto private lands. Crescent Creek is the main stream channel with tributaries of Big Marsh, Cold, Whitefish, Summit, and Refrigerator Creeks. Big Marsh, Crescent Lake, and Summit Lake are the major features in this watershed.

There are a couple of large private inholdings within the contiguous NFS lands. The main travel routes include Roads 60 (over Windigo Pass), 58 (to Crescent Lake Junction), 46 (to Summit Lake), and 61 (to Willamette Pass). Major recreational attractions include the Crescent Lake complex, developed campgrounds, Oregon Crest Recreation Area, and the Diamond Peak Wilderness area. Uses include all kinds of developed and dispersed activities, including mushroom harvesting. The State also maintains a small airport within this watershed. Administratively, the area is primarily managed for timber and range.

This land consists mostly of glacial canyons, glacial outwash plains, and shield volcanoes, and is covered by 15 to 80 inches of Mazama ash. On NFS lands, redband trout are the primary fish species of

concern, although brown trout and brook trout are also present. The following five roads rated out as the highest concern for aquatics: 58, 5826, 60, 6010, and 6020. A combination of low to moderately rated factors and road position (either mid-slope or stream bottom) lead to the concerns. Road 6020 had the highest overall concern due to its position and crossing of wetlands and Big Marsh Creek. Road 5826 at the upper end of Big Marsh was also a concern.

Noxious weed concerns are rated high along Roads 46, 58, 6015, and 61. Currently, the noxious weed species of primary concern are diffuse and spotted knapweeds, Canada thistle, bull thistle, tansy ragwort, and St. John's wort. Roads 46, 58, and 61 have high traffic and are major road corridors for spreading weeds. According to current GIS maps and the FS Region 6 Threatened, Endangered, and Sensitive Plant List, TES plants are not an issue at this time in this watershed. There is a diversity of special habitats and Roads 6010, 6020, and 6030 rated high risk for impacting numerous wetland type habitats.

Road 46 rated as a very high concern for wildlife habitats. This road accesses or passes through lynx, bald eagle, spotted owl, old growth, and late-successional habitats. This road has high traffic volumes and crosses several riparian areas. It also borders wilderness areas. Concrete barriers along this road can also interfere with wildlife movements. Roads 4660 and 60 also had high concerns for wildlife movement because paved sections contain concrete barriers.

Potential future management considerations:

- Begin or continue noxious weed treatments along Roads 46, 58, and 61.
- There are existing populations of diffuse and spotted knapweed, Canada and bull thistle, St. John's wort, and tansy along Road 46 which is a high traffic area. There are existing populations of spotted knapweed, Canada and bull thistle, St. John's wort, dalmatian toadflax, and butter and eggs along Highway 58, where there have been repeated disturbances (highway maintenance, cinder distribution) in weed sites.
- Check for and replace undersize culverts along Roads, 60, 6010, 6020, and 6030. The culvert on Road 60 at Refrigerator Creek is a low priority for replacement.
- Consider upgrading the native surface section on Road 60 to aggregate. Aggregate surfacing would reduce the need for annual maintenance and would reduce fine sediment delivery.
- There is visible evidence of erosion on Road 6010. Road needs to be upgraded or maintenance frequency needs to increase.
- Pave the stream crossing where Road 6020 crosses Refrigerator Creek (Big Marsh). This project is being submitted for county funding. Currently, the road bisects the stream. The existing culvert needs to be replaced or additional culverts needs to be installed to maintain wetlands.

Crooked River Grasslands

The Crooked River Grasslands watershed drains several intermittent streams into Lake Billy Chinook.

The communities of Culver, Crooked River Ranch, and Round Butte Estates are within the watershed. The entire watershed is considered a major urban interface zone. There are a lot of private lands and major farming and ranching operations. Highway 97 is within the watershed as well as the Lower Crooked River Road, which provides the majority of access to the westside of the Crooked River National Grassland. There are numerous special use endurance events, Smith Rock State Park, Cove Palisades State Park, Henderson Flats OHV area, horse and bike trails, and the Crooked River arm of Lake Billy Chinook within the watershed. As with most of the Crooked River National Grassland, there are numerous historic and prehistoric sites. The Crooked River Wild and Scenic River Corridor is also within the watershed.

The underlying lithology is composed of 46 percent highly erosive pyroclastics and unconsolidated gravels. The remainder is extrusive basalt flows. The reservoir underlies 3 percent of the watershed. The dormant landslide terrain comprises 5 percent of the landform. Road 63 rated out as the highest concern for aquatics. The road has a high rating for fish. The road crosses Lake Billy Chinook, which has threatened and endangered specie. The road is in landslide terrain.

Road-related risks to special habitats and Threatened, Endangered, and Sensitive plants are low to non-existent in the Crooked River Grassland watershed. Noxious weeds are the primary road-related issue, with Roads 5740, 5770, 62, 63, and U.S. Highway 97 rated as high risk due to existing weed populations and moderate to high traffic along these roads. Spotted knapweed and medusahead are the primary noxious weed concerns.

There are no roads that were rated as a high concern for unique wildlife features or habitat characteristics.

Potential future management considerations:

- Begin or continue noxious weed treatments along Roads 5740, 5770, 62, and 63.

Deep Creek

The Deep Creek watershed drains the west side of the Paulina RD and flows into the North Fork of the Crooked River downstream of Big Summit Prairie. Deep Creek is the main stream channel with tributaries of Crazy, Jackson, Double Corral, and Little Summit Creeks. Little Summit Prairie is within the watershed.

There are two private inholdings within this watershed. Road 42 is a major access road across the Ochoco NF from Highway 26 to Paulina. It is also a summer link to the town of Paulina. In addition, Roads 30, 4270, and 4250 are major access portals. There are two small campgrounds and lots of dispersed recreation. Deep Creek is the only watershed with a lot of dispersed recreation, other than hunting, on the Paulina RD. The Camp Watson Military Road is mostly in this watershed and prehistoric sites are plentiful. Administratively this is one of the more active watersheds for timber, range, and other uses, and includes the North Fork of the Crooked River Wild and Scenic River.

The underlying lithology is composed of 99 percent basalt and 1 percent unconsolidated gravels. The dormant landslide terrain comprises 1 percent of the landform. Deep Creek is a strong hold for redband trout and includes key spawning, rearing, and refugia habitat for the species. Fish passage barriers exist at numerous road crossings. Road 4250 has the most risk to aquatic resources in the watershed. This road parallels Deep Creek and crosses numerous tributaries. A combination of factors and road position (stream bottom) lead to the concerns. The road had a high rating for fish species and moderate concerns for flow and fish passage.

A diversity of special habitats occurs in Deep Creek watershed. Road 4250 was rated as having a high risk from roads due to a combination of noxious weed, high recreation, and high concerns for floodplain functioning. Moderate road-related risks to special habitats were identified along Roads 12, 30, 4254, 4256, 4270, 4272, and 4274 due to noxious weeds, dispersed recreation use, and/or concerns about road effects on the hydrology.

Deep Creek is an important watershed for the sensitive plant Peck's long-bearded mariposa lily (*Calochortus longebarbatus* var. *peckii*). In addition, scalloped moonwort (*Botrychium crenulatum*) also occurs in this watershed. Roads 12, 42, 4250, 4270, 4272, and 4274 were rated as high risk to Sensitive plants due to noxious weed risks, high recreation use in the riparian habitats where it occurs, and/or concerns about hydrologic interference.

A variety of high-risk noxious weeds occur in this watershed, including spotted knapweed, Canada thistle, hound's tongue, whitetop, and Russian knapweed. Roads 42 and 4270 were identified as having a high risk of spreading noxious weeds. Roads 30, 4250, 4254, 4256, 4274, and 4276 were rated as moderate risk for noxious weeds.

Potential future management considerations:

- Replace undersize culverts on Roads 12, 2630 (near Happy Camp and Double Corral), 30, 42, 4250, and 4276.
- Consider seasonal closures on Road 2630 during spring runoff to reduce sediment delivery.
- The surfacing on Road 30 is worn out and needs to be replaced.
- Begin or continue noxious weed treatments along Roads 42, 4250, 4270, and 4274.
- Protect occupied *Calochortus* habitat near Road 42, 4270, 4272, and 4274. A population of hounds tongue is increasing and is likely to spread into *Calochortus* habitat along Road 42. The population on Road 4270 is a key population center and has been identified for protection under the draft Conservation Strategy.
- Protect *Salix drummondiana*, a rare willow species on the Ochoco. Noxious weeds are present in habitat. This is one of two known occurrences of this willow on the Ochoco NF.

Deschutes South

The Deschutes South watershed is located on the Crooked River National Grasslands and is north west of the town of Madras. The northwest side of the watershed encompasses part of the

Confederated Tribes of the Warm Spring Reservation.

The communities of Metolius and Round Butte are within the watershed. Most of the watershed is considered a major urban interface zone. There are lots of private lands and farming is an important activity. The Pelton dam, Lake Simtustus, along with PPE's regulatory dam, and Haystack reservoir, are all within the watershed. There are numerous special use endurance events, Haystack reservoir campground, and the Cyrus Horse Camp within the watershed. There are substantial historic (Gray Butte cemetery, Perryville historic town site) and prehistoric sites.

The underlying lithology is composed of 63 percent highly erosive pyroclastics and unconsolidated gravels. The remainder is a combination of extrusive basalt and andesite flows. The dormant landslide terrain comprises 1 percent of the landform. There are several intermittent streams and reservoirs. No roads were rated as high or moderate for the aquatics resource.

Road 5740 rated as high risk for spreading noxious weeds due to existing weed populations and high traffic along this road. Roads 55, 56, 5750, 66, 6670, 96, 9605, 9601, and 97 rated as moderate risk for noxious weeds. Problem weed species include whitetop, medusahead, Russian, diffuse and spotted knapweeds. No roads were rated as high or moderate for special habitats or Sensitive plants.

There are no roads that were rated as a high concern for unique wildlife features or habitat characteristics.

Potential future management considerations:

- Begin or continue noxious weed treatments along Road 5740.

Devils Garden

The Devils Garden watershed is located on the Fort Rock side of the Bend/Fort Rock RD. The majority of lands within the watershed are administered by the Forest Service (southeast part of the District) and by the BLM. There are large blocks of privately owned lands along the NF boundary and within the BLM lands. From NFS lands, the watershed drains southeast onto BLM and private lands. There are no perennial or intermittent streams.

The main travelways include Road 18, which provides north-south access through the RD and is a secondary (summer) community tie for Bend and Fort Rock; Road 22, which provides access west-east across the RD from Highway 97 and is a major portal route for LaPine; and Road 23, which provides north-south access within and through the watershed. Recreation facilities include South Ice Cave Picnic area and China Hat campground. Recreational activities include dispersed driving and camping, OHV (Road 2248 provides access to OHV play areas), and hunting. The BLM area to the southeast contains the Devil Garden geologic area, which is a prime example of an area that offers desert solitude. Administratively the area is managed for timber, range, and other uses.

Road 2268 rated as high risk for noxious weeds due to a large infestation of spotted knapweed at Opal Mine. Roads 18 and 23 have

known noxious weed populations (moderate rating; spotted knapweed and Canada thistle). The majority of roads within this watershed are fairly weed-free except for bull thistle in old timber harvest areas. The sensitive plant pumice grape fern (*Botrychium pumicola*) occurs in this watershed. However, all roads in this analysis rated as low risk for impacts to pumice grape fern. No special habitats were identified in this analysis.

Roads 23, 2315, 2320, 2325, and 2350 rated the highest concerns for wildlife. All five of these roads provide access to important mule deer winter range areas and important deer movement areas.

There are no roads of concern for aquatics.

Potential future management considerations:

- Begin or continue noxious weed control efforts along Road 2268 (spotted knapweed, bull thistle).
- Consider seasonal closures along Roads 23, 2315, 2320, 2325, and 2350 for mule deer winter range and movement.

Fall

The majority of lands within the watershed are administered by the Forest Service (east part of the Bend/Fort Rock RD). It drains the area northeast of Crane Prairie and Wickiup Reservoirs. Fall River is the main stream channel and flows into the Deschutes River. There are large blocks of privately owned lands along the NF boundary. From NFS lands, the watershed drains east onto primarily private lands along the Fall and Deschutes river corridors.

The main travel routes include Road 46, the Cascade Lakes Highway; Road 45, a major north-south access route; and Roads 40, 42, and 43, which are primarily east-west travel routes that connect Highway 97 with the Cascades Lake Highway. Major recreational facilities include Mount Bachelor ski area, Edison Snow Park, and Fall River campground. There is a lot of dispersed camping along the Deschutes River, and hunting and fishing are both very popular. Outside of the heavy recreational and special use permit administration; the area is managed for timber, range, and other uses.

The land consists of youthful lava fields of the Mt. Bachelor volcanic chain to the west, a plateau of lava fields and volcanic cones to the east, and thick fine-grained sediments of the LaPine Basin to the south. The area is covered with 10 to 30 inches of Mazama ash. The following roads rated out as the highest concern for aquatics: 4360 and 4370. Road 4360 has a moderate rating for fine sediment and a low rating for floodplain. This road is a native surface road that crosses Fall River multiple times and has several culverts that are insufficient for flow and fish passage. Road 4370 has a moderate rating for fine sediment and a low rating for wetlands. The road is a native surface road that parallels the west side of the Deschutes River below Wickiup Reservoir.

All roads within Fall Watershed ranked low for special habitats and TES plants. High noxious weed ratings were given to Roads 40, 42, 43, 4370, 4380, 44, 46. The primary noxious weed species of

concern is spotted knapweed, although dalmation toadflax does occur along Road 42.

Roads 40, 41, 42, 43, 4330, 4358, 4360, 4370, and 4525 had high wildlife concerns. Road 40 is a paved highway and is a major route to the Cascade Lakes and wilderness areas. Roads 41, 4180, 43, 4330, 4360, and 4370 are high traffic roads that pass through important deer and elk migration areas. Roads 42, 4358, and 4360 are within the Fall key elk area. Road 4360 also provides access to two bald eagle management areas with active nests. Road 4370 passes directly under a bald eagle nest and provides access to the Pringle Falls RNA. Road 4525 passes through an owl territory; nesting, roosting, and foraging habitat; and a late-successional reserve.

Potential future management considerations:

- Begin or continue noxious weed treatments along Roads 40, 42, 43, 4370, 4380, 44, and 46.
- Resurface Road 41. This project has already been scheduled.
- Road closures on and adjoining Road 4358 are not effective. Gates need to be maintained or removed. Other closure methods should be considered.
- Upgrade or replace a series of undersize culverts along Road 4360 (Fall Road).
- Consider installing a gate to permanently close Road 4370. This road passes under a bald eagle nest. Road passes through a BEMA (Bald Eagle Management Area) and a RNA (Research Natural Area). Traffic to the campground would need to be rerouted.

Freemount

This watershed does not contain any Forest Development Roads that were analyzed at the Forest-wide scale.

Grindstone

The Grindstone watershed drains the area southeast of the town of Paulina and west of the Upper Beaver Watershed. Grindstone Creek is the main stream channel with the major tributary being Trout Creek. This watershed does not contain any Forest Development Roads that were analyzed at the Forest-wide scale.

Hampton

The Hampton watershed is located near the eastside of Fort Rock. There are no perennial streams and one intermittent stream.

The only road in the analysis area is Highway 20, which is not a concern from an aquatics perspective. No risks were identified for special habitats and TES plants. A high risk for noxious weeds was identified due to high traffic and high road maintenance activities.

Headwaters

The Headwaters watershed is located on the Bend side of the Bend/fort Rock RD and is contained entirely within the National Forest. It drains the upper Deschutes from Mt. Bachelor downstream to Crane Prairie Reservoir. The Deschutes River is the main stream channel with numerous tributaries throughout the watershed.

Highway 46, the Cascade Lakes Highway, is the major access through the watershed. This area receives the highest recreational use on the Deschutes NF. There are many developed campgrounds that cater to water-related activities. Mount Bachelor, Dutchman Snow Park, and trailheads into the Three Sisters Wilderness are all within this watershed. Reservoirs, especially Crane Prairie, receive very heavy dispersed recreation use. Other attractions include the Three Sisters Wilderness, the popular South Sister, and Devil and Green Lake trails. Outside of the heavy recreational and special use permit administration; the area is managed for a variety of uses including timber and range.

This land consists of deeply glaciated volcanic terrain to the north, the youthful Mt. Bachelor volcanic chain of lava to the east, glaciated lava fields to the west, and glacial outwash fans in the middle and to the south. The area is covered with 0 to 24 inches of Mazama ash. On NFS lands, redband trout are the primary fish species of concern, although brown trout and brook trout are also present. Roads 46 and 4630 rated out as the highest concern for aquatics. Road 46 had the highest concern where it crosses the Sparks Lake area and associated tributaries that influencing wetlands and channel form, where it crosses other wetland habitat areas as it heads south along the Deschutes River, and the area 2-5 miles north of the reservoir where the road encroaches on the floodplain of the Deschutes River. Road 4630 is of greatest concern where it crosses Cultus River, and where it influences Cultus Creek, Deer Creek, and four wetlands.

Road 46 rated as high risk to special habitats because it crosses through or near a variety of habitats, such as subalpine meadows and wetlands. Road-related concerns are noxious weeds and off-road vehicle trespass into fragile habitats, such as the buckwheat flats near Mt. Bachelor. There were no TES plant concerns identified in this analysis. Noxious weeds are a high concern on numerous roads: 40, 42, 4240, 4285, 4286, 4290, 4291, and 46 and many of the spur roads that lead off of it. Spotted knapweed is of primary concern, although other species do occur, such as dalmation toadflax, diffuse knapweed, and Canada thistle.

Numerous roads in this watershed had high concerns for wildlife. Roads 4285 and 4286 pass through high use migration areas for mule deer and elk. Roads 4600472, 4625, 4625-100, 4625-500, 4625-605, 4625-607, all provide access to wilderness areas and lakes. Bald eagles nest and roost in and around these areas. High recreation use, especially camping and woodcutting, associated with these lakes can affect eagles and modify important habitat characteristics (i.e. removing down logs). Roads 4628, 4630, 4631, 4632, 4635, 4635-110, 4635120, and 4636 all pass through late-successional reserves, spotted owl home ranges, and Critical Habitat Units.

Potential future management considerations:

- Begin or continue noxious weed control projects on Roads 42, 4240, 4285, 4286, 4290, 46, 4600319, 4600400, 4600420, 4600430, 460450, 4600472, 4600480, 4600482, 46500, 4600655, 4600659. There are several different weed species; spotted knapweed and dalmatian toadflax seem to be the most prevalent.
- Consider seasonal closures on Roads 4285 and 4286 to reduce disturbance during big game migration.
- On Road 46, consider installing a series of relief culverts or stream crossings near Sparks Lake to restore floodplain and wetland function.
- Consider permanent closure of loop access routes. These loops are formed by or in the vicinity of Roads 4600472, 4625, 462510, 462530, 462550, 4625605, 4625607, 462580, 4630, 4631, 4632, 4635, 4635110, 4635120, and 4636. This closure effort would need to a coordinated effort because some of these roads access campgrounds/lodges. These roads are in the proximity of key wildlife areas for owls and eagles and wilderness areas.
- Replace the undersize culvert on Road 4635110.

Irrigation Canals

The Irrigation Canal watershed is located on BLM administered land west of Powell Butte. The Irrigation Canal watershed has no perennial or intermittent streams. The underlying lithology is composed of 100 percent extrusive basalt flows. The only roads in the analysis area are paved and are not a concern for aquatics. There are no perennial or intermittent streams. This watershed does not contain any Forest Development Roads that were analyzed at the Forest-wide scale.

Four Deschutes County roads, U.S. Highway 20 and State Highway 126 have a high risk for introducing and spreading noxious weeds due to high traffic levels and high road maintenance activities.

Lake Billy Chinook

The Lake Billy Chinook watershed is located partially on the Crooked River National Grassland and partially on the Sisters RD. There are no perennial streams in this watershed.

Road 63 and 64 originates within this watershed and provides primary access to the subdivisions of Geneva and Three Rivers. There are also lots of interspersed private lands and rural homesites creating a major urban interface within the watershed. Part of the Lake Billy Chinook State park and the Deschutes arm of Lake Billy Chinook are within the watershed. There are substantial historic (cemeteries, rock walls, town sites, travel ways) and prehistoric sites.

The underlying lithology is composed of 25 percent highly erosive pyroclastics and unconsolidated gravels. The reservoir covers 3 percent of the area. The remaining 72 percent is underlain by extrusive basalt flows. Dormant and active landslide terrain comprises 1 percent of the landform. The Deschutes and Crooked Rivers converge to form Lake Billy Chinook, behind the Round Butte dam. Road 63 crosses landslide terrain, as it passes through the

state park.

Road 6510 rated as high risk to special habitats and Threatened, Endangered, and Sensitive plants. A rare lichen, *Texasporium sancti jacobi*, occurs along this road. Noxious weed concerns were also identified along this road (moderate risk rating). Road 6520 also rated as high risk for this same rare lichen and a moderate risk for noxious weeds. Other road-related risks in this watershed for special habitats and Threatened, Endangered, and Sensitive plants were low to non-existent.

A high noxious weed risk rating was identified for Road 6320. Moderate noxious weed risks were identified for Roads 11, 1126, and 2055. Road 2055 is of special concern because of the high weed infestations in the Fly Lake area. Road 2055 was also identified as having a high risk to special habitats (scablands) due to high off-road use and noxious weeds and to Peck's penstemon, a Sensitive Plant.

Road 63 was rated as high for wildlife. Road 63 accesses a heavily used deer wintering area. This road has a high traffic volume that travels at high speed.

Potential future management considerations:

- Consider increasing or improving signage along Road 63 to slow traffic and reduce potential wildlife/vehicle collisions.
- Treat weed populations along Road 6320 because weeds may threaten populations of cultural plants.
- Protect habitat for rare lichen, *Texasporium sancti jacobi*, near Roads 6510 and 6520. Begin or continue control measures to prevent nearby noxious weeds (medusahead) from spreading.

Little Deschutes

The Little Deschutes watershed drains the area west of the town of LaPine. The Little Deschutes River is the main stream channel and flows into the Deschutes River. Most of the land within the Watershed is privately owned. The Forest Service (Crescent RD) administers one large block and a few scattered parcels. The BLM administers a couple of large blocks and numerous smaller parcels scattered throughout the watershed.

The area is considered a major urban interface zone as exemplified by the presence of LaPine and many rural subdivisions and remote homesites. Highway 97 runs directly through the watershed and Road 9745 is the primary access route for a number of subdivisions. Road 22 is a major portal route for the people of LaPine to access the Deschutes NF. Administratively the area is managed for timber, range, and other uses. Much of the BLM lands are OHV play areas.

This area consists of youthful lava fields of the Mt. Bachelor volcanic chain to the west, a plateau of lava fields and volcanic cones to the east, and thick fine-grained sediments of the LaPine Basin to the south. From 10 to 30 inches of Mazama ash cover the area. Road 43 rated out as the highest concern for aquatics. Road 43 has a moderate rating for floodplain and wetlands. This road is commonly known as the Wickiup Junction Road and crosses the Little Deschutes River.

There were no road related concerns to special habitats and TES plants identified in this analysis. Special habitats may occur and there may be TES plant populations close to roads that are not mapped. Highway 97 is a major vector for noxious weeds, primarily spotted knapweed with some diffuse knapweed populations. Other roads in this watershed rated as low or moderate risk for noxious weeds.

Road 62 rated out as the highest concern for wildlife. Road 62 passes through a late-successional reserve and a spotted owl territory.

Potential future management considerations:

- None

Long Prairie

The Long Prairie watershed is located on the Fort Rock side of the Bend Fort Rock RD. About half the land base is administered by the Forest Service. NFS lands in this watershed are largely contiguous. At the lower elevations the ownership pattern changes to private (30 percent). There are large blocks of BLM lands in the valley bottom (20 percent). There are also a scattering of lands administered by the Fremont NF in the southwestern part of the watershed.

Highways 97 and 31, which provides access to Silver Lake, Christmas Valley, Lakeview, and beyond, are within the watershed. Road 2220 is a major access road to large blocks of industrial timberlands. Road 22 is a major portal road onto the Ft. Rock RD for the citizens of the LaPine area, as well as a secondary community route for Fort Rock. The area gets very heavy hunting during the fall deer-hunting season. There is a moderate level of dispersed use, mainly in the summer and fall seasons. The Spring Butte fire lookout and the powerlines to Christmas Valley are also within the watershed. The area is managed for a variety of uses including timber and range.

Roads in Long Prairie watershed rated low or zero for risk to special habitats. Only a few special habitats were identified in the analysis: an aspen stand along Road 2415 and a wet meadow along Highway 97 south of LaPine. There are moderate concerns for pumice grape fern populations occurring along Road 24, with low concerns for other populations occurring along Roads 31, 3115, 3117, and 3118. Roads 31 and Highway 97 are rated as high risk for spreading noxious weeds (diffuse and spotted knapweeds).

Highway 31 rated a high concern for wildlife because of heavy traffic and the large number of vehicle collisions with deer.

There are no roads of concern for aquatics.

Potential future management considerations:

- Continue noxious weed control efforts along Road 31. Biggest problem is weed populations on private land that are not being treated. Populations on NFS lands have been reduced by control efforts but reinfestations are likely.

Lower Beaver

The headwaters of the Beaver Creek watershed are located on the Paulina RD. Wolf Creek is the main stream channel. The watershed drains south onto private lands with interspersed BLM lands. There are two large private inholdings surrounded by NFS lands. The community of Paulina, which services the very large and productive Paulina valley ranching community, is within the watershed. Road 12 is a major north-south portal, Road 58 links to the Rager Ranger Station and to Road 42, which is a school route. County roads 112 and 113 are also school routes, and State Highway 380 leads to the community of Izee and large ranches in the east. The second most used campground on the District, Wolf Creek, is within the watershed. Disperses recreation, especially hunting, is also high.

The underlying lithology is composed of 28 percent highly erosive pyroclastics and unconsolidated gravels. The remaining 72 percent are extrusive basalt flows. The dormant landslide terrain comprises less than 1 percent of the landform. The following two roads rated out as the highest concern for aquatics: 3810 and 4290. A combination of moderately rated factors leads to the concerns. Road 3810 has a moderate rating for fine sediment and floodplain as well as a low rating for flow and fish. This road is gravel and parallels Wolf Creek. Road 3810 crosses Wolf Creek twice and also crosses four intermittent tributaries. Road 4290 road is a gravel road that parallels an intermittent tributary to Wolf Creek and three to four perennial streams that are not on the stream layer.

Roads 3810, 4260, 4290, and 5810 rated as moderate risk to special habitats. Special habitats include meadows, scablands, springs, and aspen stands. Roads 4260 and 4290 rated as moderate risk to Sensitive plants. The remaining roads analyzed for this watershed rated as either low or no risk to special habitats and TES plants.

Roads 3810, 42, 4280, and 5810 rated as high risk for noxious weeds. Problem species include Canada thistle, hound's tongue, whitetop, and diffuse and spotted knapweeds. Most of the high risk ratings were due to high traffic combined with relatively high recreation use.

There are no roads that were rated as a high concern for unique wildlife features or habitat characteristics.

Potential future management considerations:

- Begin or continue noxious weed treatments along Roads 3810, 42, 4280, and 5810.
- Upgrade portions of Road 58 and convert to county jurisdiction.

Lower Crooked River Valley

The Lower Crooked River Valley watershed includes the area of the Crooked River from just south of Prineville downstream to about Smith Rock State Park and north to the top of Grizzly Mountain. The Crooked River is the main stream channel with the McKay Creek drainage as the major tributary. Joe Fisher Reservoir is located in the watershed and is primarily a stock watering lake. The southeast

corner of the Crooked River National Grassland is within the watershed.

The majority of the watershed is under private ownership, with interspersed BLM lands. The City of Prineville, along with the communities of Lone Pine and Juniper Canyon are all within the watershed. Highway 26, a major State Highway, is within the watershed along with road 7960 (Lone Pine Road). The Lone Pine Road is a major access route into the Crooked River National Grassland. The Lone Pine Road is also a major community access route for Madras, Redmond, and Terrebone, and is also a Jefferson County tour route. The southern part of the Crooked River National Grassland supports major recreational activities such as camping at Skull Hollow campground, heavy dispersed recreation use at McCain Orchards, and the Gray Butte Trailhead and trail. There are two major electronic sites, Gray Butte and Grizzly Mountain, along with Portland General Electric's natural gas pipeline and substation. The area has very high prehistoric and historic significance, such as the old town site of Grizzly.

The underlying lithology is composed of 36 percent basalt/andesite/rhyolite, 4 percent landslide debris and 60 percent highly erosive pyroclastics and unconsolidated gravels. The dormant landslide terrain comprises 5 percent of the landform. Redband trout are the main species of concern within this portion of the Crooked River. There were no roads of concern from aquatics in this watershed.

Road 5710 rated as moderate risk to special habitats (riparian and aspen). All other roads analyzed in this watershed rated as low or no risk to special habitats. There were no Threatened, Endangered or Sensitive plant concerns identified. For road-related risks to noxious weeds, State Highway 380 was of greatest concern, rating as a high risk due to existing weed populations and high traffic. All other roads rated as low risk to introducing and spreading noxious weeds.

There are no roads that were rated as a high concern for unique wildlife features or habitat characteristics.

Potential future management considerations:

- None

Lower Dry River

The Lower Dry River watershed is located partially on the Crooked River National Grassland and partially on the Ft. Rock side of the Bend/Fort Rock RD. The headwaters of Lower Dry River are on the northeastern side of the Fort Rock RD. There are no perennial or intermittent streams in the watershed.

The watershed drains to the northeast onto BLM lands. Lands administered by the BLM dominate the watershed. There are also numerous large blocks of privately owned lands. The primary travelways include Road 18 (China Hat). The China Hat Road is the second most heavily used road on the Ft. Rock RD. It is the major north-south portal through the Ft. Rock RD and is a secondary (summer) community access route for the communities of Bend and Fort Rock. Highway 20, which is the primary access from Bend to

Burns, also cuts through this watershed. This watershed is close to Bend; it receives heavy use and exhibits a lot of urban interface interactions. There are a number of day-use areas but no developed campgrounds. The main features/attractions are caves. Wind, Ice, Boyd, and Skeleton caves are all unique features and generate a lot of recreational use. In addition, the Skeleton wildfire burned most of this watershed. In the past this created additional traffic as people come to see the effects of a major wildfire. Administratively the area is managed for timber, range, and other uses.

The underlying lithology is composed of the over 30 percent highly erosive pyroclastics and unconsolidated gravels. The remaining 70 percent are extrusive basalt flows. There are no roads of concern for the aquatic portion of this analysis.

No special habitats were identified within 200 feet of roads within this analysis. Sensitive plant (green-tinged paintbrush) populations occur along roads 1825 and 2015, but the roads are considered low risk to these populations. Road 1815, U.S. Highway 20, State Highway 126, and Deschutes County roads are high risk for spreading noxious weeds due to high traffic and existing weed populations.

Numerous roads in this watershed were rated as high concerns for wildlife. Roads 18, 1800-200, 1814, 1815, 1815-800, 1819, 1820, 1825, and 2015 all provide access to mule deer winter range, including some low elevation winter range areas. Road 2015 provides access to a sage grouse lek located on private land. Roads 1800 and 1820 provide access to caves.

Potential future management considerations:

- Road 1800-200 access Wind and Bat caves. Consider some form of heritage site protection.
- Begin or continue noxious weed treatments along Road 1815 (spotted and diffuse knapweed).
- Consider seasonal closures along Roads 18 and 1818. These roads provide access to caves and winter range areas.
- Consider closing portions of Road 2015. This road accesses an important sage grouse lek site.

Lower Metolius

The northwest part of the Crooked River National Grassland and northeastern part of the Sisters RD lie within this watershed. The Lower Metolius watershed drains the lower half of the Metolius basin and includes the Metolius arm of Lake Billy Chinook. Numerous tributaries are present throughout the area with the Metolius River as the main channel.

The town of Metolius and the Three Rivers subdivision are within the watershed. There are numerous ranching operations within this watershed. Road 11 provides access to Green Ridge, Sisters, and Lake Billy Chinook. Road 1170 is the continuation of Road 11, and provides access to private lands and the Three Rivers Subdivision. Road 1170 is in need of resurfacing. Roads 11 and 1170 are involved in the relicensing of Portland General Electric's hydroelectric facility.

Although most of the Metolius River facilities do not fall in this watershed, it does receive heavy dispersed recreational use along the river, heavy developed recreation along the lake, and contains a couple of major campgrounds. The area contains lots of rock pits and private timberlands.

The underlying lithology is composed of 30 percent highly erosive pyroclastics, landslide debris, and unconsolidated gravels. Lake Billy Chinook underlies 2 percent of the area. The remaining 68 percent is composed of mafic intrusive and a combination of basalt, andesite, and rhyolite extrusive flows. The dormant landslide terrain comprises less than 1 percent of the landform. This land consists of older, dissected, volcanic rocks, which include lavas, thick layers of ash, and sand and gravel. The steep and long slopes of Green Ridge and the Horn-of-the-Metolius above the Metolius River can produce debris flows during major storms. On NFS lands, redband and bull trout are the primary fish species of concern, although brown trout and brook trout are also present. The following two roads rated out as far and away the highest concern for aquatics: 1499 and 64. These two roads parallel the eastern and southern sides of the Metolius River. Road 1499 starts on the southern end of the watershed and parallels the eastern edge of the river. It is native surfaced and crosses over 30 intermittent tributaries and debris fans from debris flows. Road 64 is in the lower section of the drainage and the final two miles are a major concern. This has some major fine sediment problems due to surface erosion and sloughing slopes.

Roads 1499, 6510, and 6520 rate as high risk to all three botanical factors: special habitats, TES plants, and noxious weeds. High risk weed species, medusahead, threatens scabland habitats that contain a rare lichen, *Texasporium sancti jacobii*. High noxious weed risks were identified along Roads 1129, 1170, 1180, 1190, 1193, 1499, 63, 64, and 65.

Hydrologic interference and weed risk were concerns identified for special habitats that occur along Roads 11, 1140, 1190, 1193, 1499, 6320, and 64 within the Lower Metolius watershed. Two sensitive plants, peck's penstemon (*Penstemon peckii*) and tall agoseris (*Agoseris elata*), occur within the Lower Metolius watershed. The primary road-related concern for these sensitive plants is the introduction and spread of noxious weeds along roads into sensitive plant habitats. Several other roads rated as moderate concern for risk to TES plants.

Roads 11, 1140, 1150, 1190, and 64 were rated as a high concern for wildlife. Road 11 passes through a heavy, winter-time deer movement area. Road 1190 is a major north-south route that affects big game migration. Roads 1150 and 1190 border primitive wildlife areas and possible wolverine habitat. Illegal fire wood harvest along Roads 1140 and 1150 reduces large woody debris. Roads 1140, 1150, and 1190 access Late-Successional Reserves and spotted owl nesting, roosting, and foraging habitat. Roads 1140 and 1190 also access Old Growth Management Areas and Critical Habitat Units. Road 64 is the main paved access route from Highway 97 to the Perry South and Monty Campgrounds. High recreation use is affecting bald eagles.

Potential future management considerations:

- Review undersize culverts at intermittent tributaries along Road 1150. Upgrade or remove undersize culverts. If it were determined that culverts would not be effective in this area, convert to drivable dips.
- On Roads 1490 and 1499 convert culverts to drivable dips. Minimize the amount of fill at stream crossings.
- Consider obliterating the last 2 miles of Road 64. Major sloughing is occurring on the cut/fill slopes and contributing sediment into bull trout habitat.
- Begin or continue noxious weed control projects along Roads 1170, 1180, 1499, and 64. Diffuse knapweed is the most prevalent species.

Lower North Fork Crooked

The Lower North Fork Crooked watershed is located on the Big Summit side of the Lookout Mountain RD. The southeast end of the Big Summit RD contains the headwaters of this watershed. The North Fork Crooked River is the main stream channel.

The watershed grades from Forest Service to BLM to private lands as one moves south. Although there are few major roads, Teaters Road provides access from the Paulina Highway to the Ochoco NF. There is lots of dispersed recreation, especially hunting and river related. Lower Falls on the Crooked River occurs within the watershed. The Star Gazer Party is held in this watershed every summer. The South Boundary Road Closure area, where motorized access is limited, is within the watershed. Administratively, the area is actively managed for timber, range, and other uses.

The underlying lithology is composed of 16 percent highly erosive pyroclastics, landslide debris, and unconsolidated gravels. The remaining 84 percent are extrusive basalt flows. The dormant landslide terrain comprises less than 1 percent of the landform. Road 4230 rated out as the highest concern for aquatics. A combination of moderate and low rated factors leads to the concerns. Road 4230 has a moderate rating for fine sediment, floodplain, and wetlands and a low rating for flow and fish. This road parallels Rough Canyon Creek, then Fox Canyon Creek, then North Fox Canyon Creek. The road also runs close to five reservoirs.

Road 4260 rated high for TES plants due to a small, vulnerable isolated population of Peck's long-bearded mariposa lily that is threatened by noxious weeds. This road also rated high for noxious weeds because connecting roads have hound's tongue. Roads 4225 and State Highway 380 rated moderate risk for noxious weeds.

There are no roads that were rated as a high concern for unique wildlife features or habitat characteristics.

Potential future management considerations:

- Upgrade/replace culverts along Road 4230.
- Consider closing Road 4230 through route. The native surface section is contributing fine sediment to stream courses.

Lower Ochoco

The Lower Ochoco watershed drains the area to the east of Prineville including Ochoco Reservoir and the lower part of Ochoco Creek. Ochoco Creek and Veazie Creek are the major streams in the drainage.

The majority of this watershed is private land, interspersed with BLM lands. There are few Forest Service administered lands. The City of Prineville and the Ochoco Reservoir are main influences. The Green Mountain Trailhead is within this watershed.

The underlying lithology is composed of 12 percent basalt, 5 percent landslide debris, and 82 percent highly erosive pyroclastics and unconsolidated gravels. The dormant landslide terrain comprises less than 1 percent of the landform. Ochoco Reservoir underlies 1 percent of the watershed. Ochoco Reservoir contains rainbow/redband trout, large mouth bass, crappie, and catfish. The primary fish species of concern is redband trout in Ochoco Creek. The following two roads rated out as the highest concern for aquatics (although overall concern was only moderate): Highway 26 and Road 4215. The primary cause for concern, for both roads, is the position of the road adjacent to the streams and impacts to floodplains. Road 3380, located on landslide terrain, rated moderate for geology.

Noxious weeds are the highest botanical concern in the Lower Ochoco watershed. Three of the five roads analyzed in this watershed rated as high risk for noxious weeds (Roads 26, 27, and State Highway 380). The other two roads rated as moderate risk for noxious weeds. Problem noxious weed species include whitetop, dalmation toadflax, Canada thistle, spotted and Russian knapweed.

Road 4215 rated as moderate risk to special habitats (riparian habitat with willow, alder, and possibly cottonwoods). The floodplain has been altered. All roads in this watershed rated as low or no risk to Sensitive plants.

There are no roads that were rated as a high concern for unique wildlife features or habitat characteristics.

Potential future management considerations:

- Monitor area along Road 26 for noxious weed spread. There are several noxious weeds species on private land with few or no control efforts.
- Begin or continue noxious weed treatments along Road 27.

Lower South Fork

The Lower South Fork watershed is located on the Paulina RD. The South Fork John Day River is the main stream channel. The watershed drains to the South Fork of the John Day River.

The community of Dayville's primary access to the Ochoco NF is Road 42. The Black Canyon Wilderness, one of three Wildernesses on the Ochoco NF, is in the upper end of the watershed. The area is known for its "trophy" hunting (deer and elk), has two developed campgrounds, Frazier and Mud spring), and trailheads into the wilderness. Administratively, the area is actively managed for timber,

range, and other uses.

The underlying lithology is composed of 3 percent Mesozoic sedimentary rocks and 3 percent landslide debris and unconsolidated gravels. The remaining 94 percent are extrusive basalt flows. The dormant landslide terrain comprises a little over 1 percent of the landform. The following two roads rated out as the highest concern for aquatics: 5850 and Grant County Road 42. A combination of high, moderate, and low rated factors leads to the concerns. Road 5850 has a moderate rating for fine sediment, floodplain, and fish and a low rating for flow and wetlands. This road crosses the North Fork Wind Creek, Squaw Creek and numerous intermittent tributaries. Grant County Road 42 has a high rating for fish, a moderate rating for fine sediment and floodplain and a low rating for flow. The road is gravel and follows the South Fork John Day River.

There are no roads that rated a high concern for botany in this watershed.

There are no roads that were rated as a high concern for unique wildlife features or habitat characteristics.

Potential future management considerations:

- None

Lower South Fork Crooked

The Lower South Fork Crooked River watershed drains the South Fork of the Crooked River.

This watershed does not contain any Forest Development Roads that were analyzed at the Forest-wide scale.

Lower Crooked River (RM 56.5 - 70.5)

The Lower Crooked River watershed drains the Crooked River from Bowman Dam downstream to about 5.5 miles south of Prineville. This watershed does not contain any Forest Development Roads that were analyzed at the Forest-wide scale.

State Highway 27 was rated with a high risk for introducing and spreading noxious weeds.

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ROAD ANALYSIS

Code Definitions (Road Management Recommendation Table)

Field Heading

ROAD - Road Number

BMP - Beginning mile point for a segment of road


EMP - Ending mile point for a segment of road

SURF - Road Surface Type

- NAT = Native Material (Dirt)
- IMP = Improved Surface (Cinders, Pit Run rock, etc.)
- AGG = Aggregate (Gravel)
- BIT = Bituminous Surface Treatment (Chip Seal, Oil Mat, paved)
- AC = Asphalt Concrete (Hot Mix, paved)

Maint Level - Existing or Proposed Maintenance Level

- 1 = Road is CLOSED year around
- 2 = Road is OPEN and maintained for HIGH CLEARANCE vehicles
- 3 = Road is OPEN and maintained



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Forest

Deschutes National Forest

1001 SW Emkay Drive
Bend, OR 97702

(541) 383-5300

Ochoco National Forest

3160 N.E. 3rd Street
Prineville, OR 97754

(541) 416-6500

**Crooked River National
Grassland**

813 S.W. Hwy. 97
Madras, OR 97741

(541) 475-9272



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for LOW CLEARANCE vehicles,
(usually has native or gravel
surfacing)

- 4 = Road is OPEN and maintained for LOW CLEARANCE vehicles, (low standard paved road or might have stabilized gravel surfacing)
- 5 = Road is OPEN and maintained for LOW CLEARANCE vehicles, (high standard, double lane, paved road)

Mgmt Strategy - Recommended Management Strategy (See following page for definitions)

Maint Frequency - Existing or Proposed Maintenance Frequency (See following page for definitions)

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ROAD ANALYSIS

Road Management Recommendations

Step four of the road analysis established the level of use and need for each road segment as well as indentified relative levels of environmental impacts and risks associated with the roads. By comparing access needs with environmental risks, an initial assessment was made as to whether present road mangement practices were sufficient for the segment or whether road maintenance efforts need to be adjusted either up or down to match present conditions. The following strategies were assigned to each road segment:

Management Strategies

- A. **Maintain As Is:** (Existing maintenance efforts are generally in balance with access needs, no resource impacts are identified that would warrant a change in maintenance levels.)
- B. **Increase Maintenance Level:** (Access needs identified exceed existing maintenance efforts and/or



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Prineville, OR 97754

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**Crooked River National
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Madras, OR 97741

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resource impacts have been identified that indicate a need to perform maintenance at a higher level.)

- C. **Decrease Maintenance Level:** (Access needs identified do not support maintaining road at current level. Resource impacts are low and do not require maintenance to continue at present level.)
- D. **Implement Seasonal Travel Restrictions:** (Access is generally needed during the snow free season, but resource concerns indicate a need for travel restrictions to be implemented at some time of the year to mitigate negative impacts.)
- E. **Close Year Around:** (Access needs are low and only necessary for administrative or project use. Road can be closed between projects. Resource concerns or maintenance budget limitations indicate a need to close road between project activities.)
- F. **Decommission or Convert to Other Uses:** (Full-sized vehicle access is no longer needed, road can be removed from the transportation inventory. Road can either be stabilized and returned to resource production or converted to other uses such as a motorized or non-motorized trail.)

Maintenance Frequency:

In addition to the management strategies listed above, the frequency of road maintenance activities was further categorized as needing to be performed on an annual, regular or "as needed" basis. These terms are defined where **annual maintenance** is performed at least one time per year, **regular maintenance** is performed at least every other year, and **as needed maintenance** occurs infrequently as conditions require, maybe once every 5 to 10 years.

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ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost /mile	Segment COST	
5840000	8.99	12.24	NAT	A	2	AS NEEDED	\$69	\$225	2	AS NEEDED	\$69	\$225	
5840000	12.24	12.30	NAT	A	2	AS NEEDED	\$69	\$5	2	REGULAR	\$125	\$8	
5840000	12.30	12.52	NAT	A	2	AS NEEDED	\$69	\$15	2	REGULAR	\$125	\$27	
5850000	0.00	0.18	AGG	A	2	AS NEEDED	\$179	\$32	2	AS NEEDED	\$179	\$32	
5850000	0.18	2.60	AGG	A	2	AS NEEDED	\$179	\$434	2	AS NEEDED	\$179	\$434	
5850000	2.60	5.70	IMP	A	2	AS NEEDED	\$134	\$416	2	AS NEEDED	\$134	\$416	
5850000	5.70	9.00	NAT	A	2	AS NEEDED	\$69	\$229	2	AS NEEDED	\$69	\$229	
5870000	0.00	4.55	AGG	A	2	AS NEEDED	\$179	\$816	2	REGULAR	\$235	\$1,069	
5870000	4.55	4.60	AGG	A	2	AS NEEDED	\$179	\$8	2	REGULAR	\$235	\$11	
5870000	4.60	6.50	NAT	A	2	AS NEEDED	\$69	\$132	2	REGULAR	\$125	\$237	
7210000	0.38	1.80	NAT	A	2	AS NEEDED	\$69	\$98	2	AS NEEDED	\$69	\$98	
9605000	0.00	0.54	AC	A	4	ANNUAL	\$1,424	\$769	4	REGULAR	\$1,424	\$769	Road into Haystack Reservoir
9605000	0.54	1.64	AC	A	4	ANNUAL	\$1,424	\$1,566	4	REGULAR	\$1,424	\$1,566	

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Code Definitions (Human Uses Assessment Table)

Field Heading

ROAD - Road Number

BMP - Beginning mile point for a segment of road

EMP - Ending mile point for a segment of road

WATERSHED - 5th field watershed

PUBLIC USES

Com Tie - Ties to Communities

SFP - Special Forest Products

Dev Rec - Developed Recreation Sites

Dis Rec - Dispersed Recreation Sites

Dis Use - Dispersed Recreation Uses

PRIVATE USES

Own - Ownership

SU - Special Uses

ADMINISTRATIVE USES

(T) - Timber Use

(R) - Range Use


(F) - Fire Use

(LM) - Lands and Minerals

(TR) - Tribal Use

(H) - Heritage Resources

AVG - Average Score



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SUM RATING - Summary Rating

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ROAD ANALYSIS

ACCESS NEEDS ASSESSMENT (Human Uses)


Public and Tribal Access:

Community/public roads:

- How does the road system connect public roads and access to communities?
- As defined here a community is at a minimum: yearlong occupancy of at least 10 permanent households. Other situations will be captured under the ownership category. Should community size be a factor?

0 - Does not provide any access to or between communities and no connection to public roads .

1-3 Road segment is secondary and low use (less than 25% of total ingress/egress) access to communities and/or provides only cursory access to the Forest).



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4-6 Road segment is secondary and moderate use (more than 25%, less than 50% of total ingress/egress) access to communities and/or provides secondary access to the Forest).

7-9 Road segment is primary access route and receives high use (more than 50% of total ingress/egress) access to communities and/or is a "portal" (provides primary access to the Forest).

Special Forest Products:

- How does the road system affect access for collecting special forest products?
- How does the road system affect managing special use permits?

0 - Road does not access special forest product or special use permit areas.

1-3 Road provides secondary access to special forest product area and special use permit areas and short-term (one time event) special use permit areas.

4-6 Road provides primary access to special forest product area and short-term (one time event) special use permit areas.

7-9 Road provides primary access to special forest product areas and long-term (multiple year) special use permit areas..

Developed Sites:

- Where are the caves for protection/recreation with respect to the road system?
- Is there adequate road access to all existing and planned developed sites: campgrounds, trailheads, day use areas, viewpoints, interpretive sites, etc. Are access roads maintained at a level commensurate with the type and amount of use? There

are many short spur roads that access developed campgrounds included in this analysis. This factor includes sites on the individual road being considered and the access it provides to other developed sites. Should size (PAOT, etc.) be a factor?

0 - Road does not lead to any existing or planned developed sites.

1-3 Road leads to one or more low use developed sites (little to no week-day use, less than 25% of capacity on all but holiday weekends).

1-3 Road leads to one or more trail-heads that access low use wilderness/unroaded area (<5 people per day).

4-6 Road leads to one or more moderate use developed sites (moderate {10-25%} week-day use, less than 50% of capacity on all but holiday weekends).

4-6 Road leads to one or more trail-heads that access moderate use wilderness/unroaded area (5-20 people per day).

7-9 Road leads to one or more high use developed sites (moderate to high {>25%} week-day use, more than 50% of capacity on weekends).

7-9 Road leads to one or more trail-heads that access high use wilderness/unroaded area (>20 people per day)

Dispersed Sites:

- Is there road access to dispersed use sites?
- This factor only considers sites on the segment being considered. The access to other sites will be captured under the dispersed use factor.

0 - Road leads to no dispersed recreation sites.

1-3 Road provides access to low number of dispersed sites with low usage (little to no week-day use, occupied less than 25% of summer weekends).

Primary use is only during big game hunting season.

4-6 Road provides access to moderate number of dispersed sites with moderate use (some week-day use, occupied 25% to 50% of summer weekends).

7-9 Road provides access to high number of dispersed sites with high use (some week-day use, occupied > 50% of summer weekends).

Dispersed Use:

- Is there an adequate amount of roads available for driving for

pleasure and other dispersed recreation needs such as hunting, fishing, sight seeing, forest products collection and caving?

0 - Road leads to no dispersed recreation opportunities.

1-3 Road provides access to low level of use and types of dispersed opportunities. Primary use is only during big game hunting season.

4-6 Road provides access to moderate level of use and types of dispersed opportunities. Primary use is summer-fall.

7-9 Road provides access to high level of use and types of dispersed opportunities. Primary use is summer-fall. Roads that may only have a moderate amount of use but also provide access to winter recreation use are included here.

Private Access

This factor includes access needs for private or other legal obligations such as providing access to private land ownership through right-of-way easements, cost-share agreements, road use permits, or other special use permit sites like rock pits, communication sites, etc.

The private access factor is categorized into the following two groups according to the related key questions:

Ownership:

- How does the road system connect large blocks of land in other ownership to public roads?
- How does the road system affect managing roads with shared ownership or with limited jurisdiction?

Special uses:

- How does the road system affect operating water diversions and impoundments?
- How does the road system affect access for collecting special forest products?
- How does the road system affect managing special use permits?

0 = Road segment does not include any private use, right-of-way, cost-share, or other special use permit access.

(1-3) = Road segment has short-term commitments through road use or other special use permits.

(4-6) = Road segment provides long-term access to private land or other special use permit areas.

Alternative routes are available to provide reasonable access to the land owner or permittee.

(7-9) = Road segment provides long-term, primary access (alternative routes are not available) to private land or other special use permit areas. Access is required by law.

Administrative

This factor addresses the importance of the road system for administration, management, or protection of forest resources. The forest manager has flexibility to analyze options and select the one that provides the best balance of resource, social and economic needs.

Administrative Human Use Factor is related to the following sub-factors and key questions:

Timber (T):

- How does the road system affect access needed for administrative use?
- How does the road system affect managing the timber base and other lands?

Rating System (T) Will the segment of road be needed for access for administrative use (timber sales), and managing the timber base (Silviculture)? Does the road segment provide primary (main route) or secondary (more than one access route) for timber management.

0 = Road segment does not affect access needs for timber management and administration.

(1-3) Road segment will not be needed for 10 or more years for timber management and administration.

(4-6) Road segment is the secondary route and will be used in the next 5 years, or road will not be needed for 5 to 10 years for timber management and administration.

(7-9) Road segment is the primary route and will be used in next 5 years for timber management and administration.

Range (R):

- How does the road system affect access to range allotments or

pastures?

- Will the permittee need the road segment for access to check on livestock or developments, haul water, or drop-off or pick-up livestock).
- Will the FS need the road for access to monitor livestock presence, utilization, or ecosystem health?

Rating System (R) Will the road segment be needed for access for range allotments. Does the road segment provide primary (main route) or secondary (more than one access route) for range allotments (pastures)?

0 = Road segment is not needed for access to range allotments.

(1-3) Road segment provides secondary access to one range allotment (pastures).

(4-6) Road segment provides secondary access to 2 or more range allotments (pastures).

(7-9) Road segment provides primary access to one or more range allotments (pastures).

Fire (F):

- Does the road system provide necessary (based on risk) access for firefighting resources, water sources, fire camp locations, and other improvements?
- Does the road system provide necessary access for fuels treatment including personnel, contract administration, equipment, water sources?
- What impact does the road system have on the current fire organization with respect to budget, and effectiveness?
- How does the road system affect access to water sources for road reconstruction/fire/range needs (water wells, pump chances, tanks, etc.)?

Rating System (F) Does the road segment provide primary (main route) or secondary (more than one access route) for fire management (suppression, fuel treatment).

0 = Road segment is not needed for access for fire management.

(1-3) Road segment provides secondary access for fire management to a limited area. Does not provide access to water source, fire camp location or other improvements (improvements include both public and private and what would be considered the urban interface. It is not needed as an escape route.

(4-6) Road segment provides secondary access for fire management and provides access to one, water source, fire camp location or other improvements.

(7-9) Road segment provides primary access

for fire management and provides access to one or more water sources, fire camp location or other improvements.

Lands/Minerals (LM):

- What is the likely transportation system needed for future needs (geothermal, mining claims, mineral material sources, etc)? We were thinking about adding a quality component?
- How does the road system affect access to rock-hounding areas?
- Where are the caves for protection with respect to the road system?

Rating System (LM) Will the road segment be needed for access for Lands and Minerals, (rock-hounding, geothermal). Primary access is the main route and secondary access has more than one route into the area..

0 = Road segment does not provide access needs for Lands and Minerals. (geothermal, mining claims, mineral material sources, etc)

(1-3) Road segment provides secondary access to one area. (geothermal, mining claims, mineral material sources, etc)

(4-6) Road segment provides secondary access to 2 or more areas. (geothermal, mining claims, mineral material sources, etc)

(7-9) Road segment provides primary access to one or more areas. (geothermal, mining claims, mineral material sources, etc)

Heritage (H):

All known heritage sites in the GIS spatial layer were intersected with the routes of roads to be analyzed. A subset of selected site types was identified.

Ratings of 8 (high) were assigned when heritage sites of selected site types intersected with roads analyzed. Rating of 3 (low) was assigned when sites with site types with low risks or no intersects with roads to be analyzed.

***Heritage data was not available for roads outside Ochoco NF boundaries and these public, state, or county roads were assigned a rating of 9 to indicate risk associated with no data.

Site types and/or features were selected known to have high values and, or be at risk due to proximity to identified travel routes. These site types include:

101 Prehistoric structure	211 Dendroglyphs
102 Burial/grave/cemetery	213 Mine/Adit
103 Ethnographic village	215 Road
104 Hearth	216 Stock driveway/corridor
105 Housepit	217 Trail
106 Midden	17 Root gathering area (obsolete)
107 Shell midden	19 Fishing station (obsolete)
109 Petroglyph	41 LS w/ flaked tools (obsolete)
110 Pictographs	42 LS w/ ground stone tools (obsolete)
117 Rockshelter/cave	43 LS w/ both flaked tools and ground stone (obsolete)
118 Traditional Cultural Properties	44 Lithic scatter w/ features (obsolete)
122 Flaked tools	46 Hearth and/or fire cracked rocks (obsolete)
123 Ground stone tools	67 Logging camp (obsolete)
124 Cache	68 Historic camp/community (obsolete)
204 Historic structure	85 Picnic/community kitchen (obsolete)
205 Historic structure remains	
206 Historic structure complex	
207 Historic structure complex remains	

(TR) Tribal:

Ratings for Tribal access and concerns were based on knowledge of the area and potential for gathering. Ratings of 9 were assigned for very high values, 8 for high, and 6 and 7 for moderate.

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Code Definitions (Aquatic Assessment Table)

Field Heading

ROAD - Road Number

BMP - Beginning mile point for a segment of road

EMP - Ending mile point for a segment of road

WATERSHED - 5th field watershed

Rating Factors

GEO - Geologic Hazard (landslide potential)

FINE SED - Fine Sediment (surface erosion)

FLOOD PLANE - Flood Plane (function)

FLOW - Flow (intercepts surface runoff)


FISH - Fish Populations (listed species)

WET LAND - Wetlands (presence along roads)

SUM - Total numerical sum of all rating factors for a given road segment

SUM RATING - Summary Rating - (L) Low, (M) Moderate, (H) High

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AQUATIC RISK ASSESSMENT

The objective of the Aquatic Assessment is to characterize how the transportation system may be influencing watershed processes and aquatic habitat at the subbasin (5th level HUC) and subwatershed (6th level HUC) scale. The assessment at the subbasin and subwatershed scale is basically the same, the primary difference being the scale of watershed and road segment to be analyzed. The basic units of assessment at the subbasin scale are the watersheds within the subbasin and road segments of arterial and collector roads within the watersheds. The basic units of assessment at the subwatershed scale are subwatersheds within the watershed and road segments of local roads. The subbasin scale analysis will help prioritize watersheds for further analysis based upon aquatic resources and potential restoration needs, identify issues within watersheds, establish context for the subwatershed or project scale analysis and identify potential management of the arterials and collectors. Analysis of local roads at the subwatershed or project level is essentially the same, but the segment scale will be different and watershed conditions are based upon the condition

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of the subwatershed. The watershed and subwatershed condition ratings are based upon the watershed BAs with further information provided by completed watershed analysis and existing GIS layers. The watershed condition ratings establish a context for the road segment ratings. The segment ratings are based upon stream survey data, road logs, culvert surveys, and local knowledge.

Road Segments - Roads will be divided into segments. The segments can be delineated in a manner analogous to a stream reach. When the character of a road changes then there will be a new segment. Segments should be delineated as long as possible without losing the characteristics of the road. Road segments in the subbasin analysis will be divided into individual lengths for that subbasin (i.e. a road segment in a 5th level HUC will start as the road passes into the HUC and end as it passes out). Road segments on the 6th field HUC level are first defined as valley bottom road mid-slope road or ridge top road. The segments are then further delineated based upon the risk factors, or changes in a physical characteristic recognized as affecting resources, such as frequency of stream crossings. A road segment would change when the segment changed from a valley bottom to mid-slope, mid-slope to ridge top, or if the definition remains the same (valley bottom, mid-slope, ridge top), a new road segment would be delineated when one of the risk factors (below) changes. For example, a new road segment should be delineated when the road goes from a high risk geologic hazard to a low risk, the impact on floodplain function changes, the road goes from a significant subwatershed to a subwatershed that is not felt to be significant, etc. Road maintenance level may also need to be included.

Development of the Aquatic Impact/Risk Factors

Aquatic factors were developed to capture key processes associated with roads as they link to aquatic environments. The list of factors includes: geologic hazard; road related sediment; floodplain off-channel habitat riparian reserve function; flow effects; at risk fish populations; and wetlands. The term "at risk fish" in this document refers to fish listed as Threatened or Endangered or Sensitive.

Numbers following each section are associated with the Key Questions associated with the INA for the Aquatics section.

Geologic hazard (AQ-2, 9, 10, 11): This factor was developed to incorporate the natural risk of mass wasting as an effect on roads or potential for roads to accelerate mass movement events. Three forms of mass movement were identified: debris flows (shallow rapid landslides); earth slumps (fairly deep land slides); and deep-seated landslides.

The interpretation of mass wasting was taken from the Oregon State Geology Map and 1985 resource photo interpretation. These interpretations were based upon observations of landslide features, the Ochoco Soil Resource Inventory (SRI), literature references,

geomorphic mapping, bedrock weathering properties, geologic structural features, slope gradient, drainage characteristics and patterns, and regolith features.

On the Ochoco National Forest, the higher risk terrain is located at the intersection of any combination of the dormant and active landslide terrain with Quaternary landslide debris, Clarno-Formation and John Day Formation, L soil mapping units of the Ochoco SRI or the Piture Gorge basalt/John Day/Clarno interface.

On the Deschutes national Forest, debris flows are associated with extreme rain-on-snow weather events in the Metolius River drainage. They are most likely to occur on steep slopes of glacial valleys and on the steeper slopes of Green Ridge.

Geologic hazard was considered a highly important factor relating to aquatic conditions. Each road segment will receive a rating for Geologic Hazard. Listed below is a summary of hazard rating:

- **0 = NO RISK** - There is no risk of landslides along the road.
- **1-3 = LOW RISK** - The terrain that the road corridor crosses has 1 to 2 of the site features associated with landslide probability. Little evidence of natural landslides have been observed and if present are localized and small. Delivery of fine sediment from natural landslides is considered low. Risk assessment indicates slope stability has a low probability of occurrence (<25%) with normal (proper) road design measures. Normally the degree of site limitation is minor and can be overcome. Generally, off-site sediment generation from road caused failures is low.
- **4-6 = MODERATE RISK** - The terrain that the road corridor crosses has 2 or more site features associated with landslide probability. Evidence of natural landslides has been observed locally but the landslide risk is not common throughout the area. Delivery of fine sediment from natural landslides is considered moderate within a few hundred feet of perennial streams. Risk assessment indicates that slope failure has a moderate probability of occurrence (25-50%) with normal (proper) road design. Special planning, design, or maintenance can usually overcome the degree of limitation. However, occasionally landslides have been triggered within the road corridor delivering moderate levels off-site sediment.
- **7-9 = HIGH TO VERY HIGH RISK** - The terrain that the road corridor crosses has most or all of the site features associated with landslide probability. Natural landslides have been observed and occur over much to most of the area. Delivery of fine sediment from natural landslides is considered high to very high. Risk assessment indicates that significant slope failure has a high to very high probability of occurrence (50-75% or >75%) with normal (proper) road design measures. The degree of limitation may not be completely overcome with special design or maintenance measures. Large and/or small scale landslides have been triggered within road corridors delivering high levels of off-site sediment.

Road Related Fine Sediment (AQ-1, 2, 5, 8, 10, 15, 18) Surface erosion occurs on wildland roads due to erosion of the road surface,

cutslopes and fillslopes and accelerated mass failures. Surface erosion of the road is sensitive to road design, road maintenance and geologic hazard. Road surface, design and maintenance of drainage structures can influence the amount of road surface erosion. Insufficient drainage structures, culverts, including ditch-relief culverts can also be sources of sediment. Roads crossing areas of high geologic hazard or with unstable fill slopes may contribute to accelerated mass wasting initiated by the failure of the fill slope. Culverts at stream crossings can be a sediment source if the culvert is under-sized and the hydraulic capacity is exceeded, or the culvert inlet is plugged causing streamflow to overtop the road. Large amounts of sediment or mass wasting can also be generated if the plugged culvert results in failure of the crossing resulting in a debris flow, or if the culvert is overrun resulting in the stream flowing down the road surface eroding the surface and fill. Ditch relief culverts that erode fill material directly into streams are another sediment source. The increase in sediments can cause streams that do not meet water quality standards to be listed as impaired under section 303(d) of the Clean Water Act.

Fine Sediment - (AQ-1, 2, 5, 8, 10, 15, 17, 18) -

- **0 = NO RISK** - Road segment has a paved surface, crossings are bridged or sufficient to pass the 100 year flood and associated debris. Cut and fill slopes are vegetated and are not eroding. Crossings are not impacting channel morphology downstream.
- **1-3 = LOW RISK** - Road segment is native surfaced, or graveled but has no visible erosion. Ditch relief culverts are not causing erosion of fill into streams, crossings are perpendicular to the stream and sufficient to pass the 100 year flood, or designed so that if failure occurs, only the prism at the crossing fails. Crossings are not impacting channel morphology downstream or causing downstream bank erosion. There is no evidence of accelerated mass wasting due to the road segment. The stream is on the 303d list for sediments.
- **4-6 = MODERATE RISK** - Road segment is not meeting above criteria to some degree. Potential impacts to at risk fish habitat appear to be minor due to amount of erosion. Potential for sediment delivery if a crossing failure or fill slope failure were to occur is minor. Change to channel morphology due to a crossing is confined to the site or does not alter the channel type. The stream is on the 303d list for sediments.
- **7-9 = HIGH RISK/VERY HIGH RISK** - Road segment has high potential impacts to at risk fish habitat. Road surface and/or fill slopes exhibit erosion into streams, visible ditch erosion, or cut slope erosion into ditches. Sediment directly enters fish-bearing stream from ditch. Fill slopes are beginning to fail, and there is evidence of accelerated mass wasting due to the sediment and/or crossings with high potential for failure where failure of the prism will result in a large amount of sediment delivered into at risk fish habitat. If culverts are over-topped it is probable that the stream will travel down the road and deliver sediment to at risk fish habitat. Crossings are altering stream channel type downstream and/or causing downstream bank erosion. The stream is on the 303d list for sediments.

Floodplain Function, Off-Channel Habitat and Riparian

Reserves (AQ-1, 3, 5, 6, 8, 12, 16): This factor addresses how the road segment has altered the function of a stream's floodplain and/or off-channel habitat. Floodplains are important regulators of streamflow and water quality. They absorb overbank floodwaters, allowing water to soak through the vegetation/organic mat and into the ground where it is stored and released more slowly into streams. In doing so, functioning floodplains can provide more water in late summer and reduce peak floods in winter and spring.

Roads can affect floodplains by limiting the frequency of overbank flows thereby concentrating greater volumes of water within stream banks, and by interfering with the ability of the stream to migrate across its floodplain. In addition, roads can prevent hillslope runoff from recharging floodplain aquifers, intercept runoff and flood waters thereby eroding and degrading water quality, and indirectly degrade floodplain function by encouraging off-road motorized access from roads onto floodplains. Indicators of direct and indirect floodplain or riparian reserve degradation include soil compaction, noxious weed introduction, evidence of soil erosion or mass wasting of road fill during peak runoff, water quality changes, artificial confinement of streams, stream bank erosion, interruption of hillslope delivery of water onto floodplain, and loss of downed or standing woody debris which is both an energy dissipater and a habitat component. Similar impacts occur if roads are within or provide vehicle access to the portion of a riparian reserve which affects aquatic habitat; loss of bank vegetation with associated loss in cover and accelerated bank erosion, reduction in large wood from the channel or potential large wood due to wood cutting or hazard tree removal, soil compaction and accelerated surface erosion. Off-road access, provided by roads onto floodplains or riparian reserves, is influenced by factors which include: proximity of road to floodplain, slope of ground leading from road onto floodplain, and desirability of floodplain determined by its width and demands for dispersed use. With more alteration, the likelihood increases that stream systems will not be functioning properly and those road segments within the floodplain will be at higher risk of damage.

Off-channel habitats provide important rearing habitat and refuge habitat during high flows. Roads in the floodplain may isolate these off-channel areas so they are no longer accessible to fish or completely fill them. A road system may not isolate or fill an off-channel area but by providing access to vehicles result in loss of vegetation, bank stability, large wood input, cover and a loss of overall habitat quality.

Floodplain Function - (AQ-1, 3, 5, 6, 8, 12, 16)

- **0 = NO RISK** - Road segment is not located in valley bottom or is located on toe slope in confined valley bottom outside the 100 year floodplain and not interfering with floodplain functions and does not provide for dispersed recreation access.
- **1-3 = LOW RISK** - Road segment located on slightly confined valley or unconfined bottoms with localized areas of road encroachment on stream channel or off channel habitats. Road location may be providing limited motorized off-road access onto floodplain or within riparian reserves such that floodplain or riparian habitat conditions which affect aquatic habitat could start

degrading in localized areas within a few years with continued use (see indicators above).

- **4-6 = MODERATE RISK** - Road segment located on moderately confined valley or unconfined bottoms with localized areas of road encroachment on stream channel. Road location may be providing motorized off-road access onto floodplain or within riparian reserve such that floodplain or riparian habitat conditions which affect aquatic habitat showing signs of degrading in localized areas (see indicators above).
- **7-9 = HIGH RISK/VERY HIGH RISK** - Road segment is located on unconfined valley bottom which frequently or continuously restricts channel migration and off-channel habitat. Road segment is affecting riparian habitat conditions affecting vegetation, altering movement of water, accelerating erosion processes, and interfering with recruitment of large woody debris. Road segment is providing access for motorized off-road dispersed use within the floodplain or riparian reserve to the point riparian habitat conditions affecting riparian habitat are being degraded or channel changes from a class B to a class C type stream, or there is a greater width to depth ratio. Stream is 303(d) listed for temperature, lack of shade contributes to elevated temperatures.

Flow effects (AQ-1, 3, 4, 5, 12, 19): This factor addresses road segments that, 1) intercept surface runoff and near surface ground water along cut slopes and ditchlines, converting subsurface flows to surface flows, and 2) increase delivery efficiency of these flows by diverting them directly to streams. Where these combined flows are continuous between roads and stream systems there is hydrologic connectivity. Hydrologic connectivity is defined as any road segment that during runoff has a continuous surface flow between any part of the road prism and a natural stream channel. Water moves from hillslopes to valley bottom via surface and subsurface paths. Roads affect flow when they cut across hillslopes and/or require fill material through depressions that interrupt these natural paths. Road cutslopes or ditches intercept surface runoff and groundwater, accelerating their movement toward stream crossings. This action frequently increases soil erosion risks and routing efficiencies, which deliver road derived sediments and contaminants to streams and can alter peak flows and channel characteristics downstream. Precipitation/runoff mechanisms including rain-on-snow, spring snowmelt and convectional storms should be considered when evaluating a road segment's hydrologic connectivity. Indicators of these effects include water interception on road surfaces and ditchlines, absences of ditchline relief culverts or crossdrains, or interruption and detention of flows by road fill.

Flow Effects - (AQ- AQ-1, 3, 4, 5, 12, 19)

- **0 = NO RISK** - Road segment is not intercepting concentrating runoff or groundwater in ditchlines. Runoff is cross-drained through a vegetative filter prior to reaching stream channels. Natural flow paths are maintained uninterrupted.
- **1-3 = LOW RISK** - Road segment is occasionally intercepting runoff (<25% of length), esp. during peak events but generally not groundwater. Delivery efficiencies are low due to combination

of landform slope and weakly developed stream networks (usually greater than 300 feet from the stream. Some additional ditch relief is necessary for routing surface runoff through vegetative filter. Downstream stream reaches may be susceptible to damage from increase peak flows. Road densities are 2-3 miles per square mile (only use during 6th field analysis).

- **4-6= MODERATE RISK** - Road segment frequently intercepts both surface runoff and/or groundwater (25-50% of the length of the segment) in sufficient volumes to influence flow downstream and moderately delivering waters directly to streams. Landform slopes are moderately steep and drainage densities moderate, providing increased delivery efficiency to stream channels (usually 150-300 feet from the stream channel). Downstream stream channels have occasional unstable reaches and are susceptible to damage from increased peak flows. Road prisms may be interrupting and detaining water preventing it from recharging floodplain aquifers. Road has moderately hydrologic connectivity to the stream system. Road densities are 4-5 miles per square mile (only use during 6th field analysis).
- **7-9= HIGH RISK/VERY HIGH RISK** - Road segment frequently intercepts both surface runoff and/or groundwater (>50% of segment length) in sufficient volumes to influence flow downstream and delivers waters directly to streams. Steep slopes and high drainage densities provide increased delivery efficiency to stream channels (usually less than 150 feet from stream channels). Downstream stream channels are unstable and susceptible to damage from increased peak flows. Road prisms may be interrupting and detaining water preventing it from recharging floodplain aquifers. Road has high hydrologic connectivity to the stream system. Road densities are 6 miles per square mile or greater (only use during 6th field analysis).

At Risk Fish Populations (AQ-2, 6, 7, 13, 14): This factor addresses whether fish listed for protection under the Endangered Species Act or on the Regional Foresters Sensitive Species List or Essential Fish Habitat, are present in the watershed and the relative importance to recovery within the subbasin. The term "significant" here is used to denote important spawning and/or rearing habitat that is key to populations persistence. This factor addresses the relative importance of a subwatershed to the conservation and recovery of at risk fish and to help weight the potential for adverse impacts to at risk fish or their habitat. Besides the potential impacts to aquatic habitat, roads can increase the potential for poaching or introduction of exotic species.

At Risk Fish Populations - (AQ-2, 6, 7, 13, 14)

- **0 = NO RISK** - Road segment with the following set of conditions: road segments located in a watershed with no listed fish species; stream crossings are not migration barriers (any life stage) for other fish species.
- **1-3 = LOW RISK** - Road segment is in a subwatershed with at risk fish but is not a significant subwatershed for At Risk species. Stream crossings are not barriers to at risk fish but may be to other species. Or at risk fish are not present and some stream

crossings are barriers to some life stages of other species.

- **4-6 = MODERATE RISK** - Road segment is in a subwatershed with at risk fish but is not a significant subwatershed for an At Risk species. One or more crossings are a barrier to at risk fish at some life stage; or road segment is in a significant subwatershed for an at risk species, no road crossings are barriers to any life stage of an at risk species, poaching is not a major concern.
- **7-9 = HIGH RISK/VERY HIGH RISK** - Road segment is in a significant subwatershed for an at risk species and no road crossings are barriers to any life stage of an at risk species, but poaching due to access from the road segment is a concern though not necessarily documented. The road segment is or has potential, based upon the previous factors, to have serious adverse impacts to at risk fish habitat; and/or there are road crossing barriers to some life stage of an at risk species and/or there is known poaching of at risk fish occurring.

Wetlands and Wet Meadows AQ-3, 5, 6: This factor addresses whether wetlands are present along road systems and do road segments interfere with their condition and function, ground water movement or wetland vegetation. The wetlands also include seeps, springs and sag ponds related to landslide terrain.

A road segment's influence on the condition and function of adjacent wetlands is a result of either a direct impact, such as a road location relative to the wetland, or indirect impacts related to the road's effect on the wetland's supporting hydrology, vegetative community and soil characteristics. The most notable effects include converting productive wetlands to compacted road surfaces, providing motorized off-road access into these areas, constraining and diverting both surface and subsurface flows that support the water table, intercepting runoff which can accelerate erosion and lower water tables, increasing sediment loading and delivery of toxic pollutants, conversion of plant species composition by introducing noxious weeds, reducing baseflows and increasing peak flow and flood frequencies and degrading water quality. Of these effects, those that affect the areas ability to receive, store and move water will likely have the greatest impact on the wetland's condition and function.

Wetlands and Wet Meadows AQ-3, 5, 6:

- **0 = NO RISK** - Road segment is either not near or adjacent to wetlands/wet meadows, or road design characteristics are providing for the uninterrupted movement of surface and groundwater necessary to support the wetland's vegetation and soil characteristics.
- **1-3 = LOW RISK** - Road segment is adjacent to, or crosses small localized wetlands or wet meadows (<5 acre in size). Road design characteristics, particularly crossings of surface and near surface water paths are limiting the available water necessary to inundate and saturate the landform and support the wetland's vegetation and soil characteristics. Initiation of wetland degradation including noxious weed establishment, increased sediment loading, and decreased area of saturation is occurring.
- **4-6 = MODERATE RISK** - Road segment is adjacent to, or crosses large scale wetlands or wet meadows (6-50 acres in

size). The road's location and design have displaced or degraded the wetland's size and function. Runoff is being delivered directly to the wetland during high flow events, increasing sediment and contaminant loadings. Crossings of surface and near surface water paths have somewhat limited the volume, timing and distribution of water necessary to saturate the landform and support the wetland's vegetation and soil characteristics. Road segment could, or is starting to provide motorized off-road vehicles access into the area, further contributing to its degradation.

- **7-9 = HIGH RISK** - Road segment is adjacent to, or crosses landscape scale wetlands or wet meadows (greater than 50 acres). The road's location and design have displaced or degraded the wetland's size and function. Runoff is being delivered directly to the wetland, increasing sediment and contaminant loadings. Crossings of surface and near surface water paths have severely limited the volume, timing and distribution of water necessary to saturate the landform and support the wetland's vegetation and soil characteristics. Road segment is providing motorized off-road vehicles access into the area, further contributing to its degradation.

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ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
1200000	21.20	21.23	Deep Creek	1	3	2	2	3	4	15	M	Undersized culverts @ Little Summit and Derr Cr. Segments causing fine sediment and adjustments to channel morphology, some fish passage problems associated	replace undersize culverts (moderate rating).
1200000	21.23	26.90	Deep Creek	1	3	2	2	3	4	15	M	Undersized culverts @ Little Summit and Derr Cr. Segments causing fine sediment and adjustments to channel morphology, some fish passage problems associated	
1200000	26.90	28.27	Deep Creek	1	3	2	2	3	4	15	M	Undersized culverts @ Little Summit and Derr Cr. Segments causing fine sediment and adjustments to channel morphology, some fish passage problems associated	
1200000	28.27	34.40	Deep Creek	1	3	2	2	3	4	15	M	Undersized culverts @ Little Summit and Derr Cr. Segments causing fine sediment and adjustments to channel morphology, some fish passage problems associated	
1200000	0.00	0.08	Deep Creek	1	3	2	2	3	4	15	M	Undersized culverts @ Little Summit and Derr Cr. Segments causing fine sediment and adjustments to channel morphology, some fish passage problems associated	
1200000	0.08	0.10	Deep Creek	1	3	2	2	3	4	15	M	Undersized culverts @ Little Summit and Derr Cr. Segments causing fine sediment and adjustments to channel morphology, some fish passage problems associated	
1200000	0.00	5.00	Deep Creek	1	3	2	2	3	4	15	M	Undersized culverts @ Little Summit and Derr Cr. Segments causing fine sediment and adjustments to channel morphology, some fish passage problems associated	
1200000	0.00	0.10	Deep Creek	1	3	2	2	3	4	15	M	Undersized culverts @ Little Summit and Derr Cr. Segments causing fine sediment and adjustments to channel morphology, some fish passage problems associated	
1200000	2.42	2.89	Lower Beaver	1	0	0	0	0	0	1	L	Top of Ridge	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
1200000	2.89	2.94	Lower Beaver	1	0	0	0	0	0	1	L	Top of Ridge	
1200000	2.94	3.30	Lower Beaver	1	0	0	0	0	0	1	L	Top of Ridge	
1200000	0.00	0.10	Mountain Creek	5	0	0	4	0	0	9	M	Mac Creek Drainage, paved, gnarly switchbacks	
1200000	0.00	0.40	Mountain Creek	5	0	0	4	1	0	10	M	Mac Creek Drainage, paved	
1200000	0.20	0.26	Rock Creek	1	0	0	1	0	0	2	L	Ridge top, little bit of ash cap	
1200000	0.00	3.55	Rock Creek	1	0	0	1	0	0	2	L	Ridge top, little bit of ash cap	
1200000	3.55	8.52	Rock Creek	1	0	0	1	0	0	2	L	Ridge top, little bit of ash cap	
1200000	8.52	8.60	Rock Creek	1	0	0	1	0	0	2	L	Ridge top, little bit of ash cap	
1250000	0.00	3.32	Deep Creek	1	0	0	0	0	0	1	L	Top of ridge	
1250000	3.32	4.75	Deep Creek	1	0	0	0	0	0	1	L	Top of ridge	
1250000	0.00	1.02	Deep Creek	1	0	0	0	0	0	1	L	Top of ridge	
1250000	1.02	2.82	Deep Creek	1	0	0	0	0	0	1	L	Top of ridge	
1250000	17.44	17.73	Lower Beaver	1	0	0	0	0	0	1	L	Top of Ridge	
1250000	17.73	17.87	Lower Beaver	1	0	0	0	0	0	1	L	Top of Ridge	
1250000	17.87	18.12	Lower Beaver	1	0	0	0	0	0	1	L	Top of Ridge	
1250000	18.12	19.72	Lower Beaver	1	0	0	0	0	0	1	L	Top of Ridge	
1250000	11.40	11.43	Rock Creek	1	0	0	2	0	0	3	L	Ridge top, little bit of ash cap	
1250000	11.43	11.43	Rock Creek	1	0	0	2	0	0	3	L	Ridge top, little bit of ash cap	
1250000	11.43	11.65	Rock Creek	1	0	0	2	0	0	3	L	Ridge top, little bit of ash cap	
1250000	11.65	11.90	Rock Creek	1	0	0	2	0	0	3	L	Ridge top, little bit of ash cap	
1250000	0.00	5.40	Rock Creek	1	0	0	2	0	0	3	L	Ridge top, little bit of ash cap	
1250000	0.00	0.18	Rock Creek	1	0	0	2	0	0	3	L	Ridge top, little bit of ash cap	
1250000	0.18	2.60	Rock Creek	1	0	0	2	0	0	3	L	Ridge top, little bit of ash cap	
1280000	4.96	5.31	Mountain Creek	5	2	0	0	1	0	8	M	Gravel barnhouse campground road, landslide debris	
1600000	1.38	1.85	Bear Creek	4	3	2	4	4	2	19	M	Four perennial stream crossings (Friday creek), three intermittent stream crossings	School bus route, increase maintenance level and maintenance frequency.
1600000	1.85	7.45	Bear Creek	4	3	2	4	4	2	19	M	Four perennial stream crossings (Friday creek), three intermittent stream crossings	Replace undersize culverts.
1600000	18.67	21.96	Camp Creek	7	2	2	4	0	3	18	H	Gravel, midslope, crosses Double Cabin, Wiley Creek and Wiley Trib 1, and five intermittent tribs, landslide terrain and landslide debris - 100%, pretty low small pack	Increase maintenance level and maintenance frequency.
1600000	29.97	30.24	Mid Crooked Rive	3	2	0	2	0	0	7	L	Crosses three intermittent tributaries, midslope at top of watershed	Increase maintenance level and maintenance frequency.
1600000	0.00	8.30	Mid Crooked Rive	3	4	4	2	2	3	18	M	Parallels Newsome and Sherwood Creek, some wetland, aggregate, then crosses and parallels Wildcat and Drake Creek	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
1600000	8.30	12.89	Mid Crooked Rive	3	4	4	2	2	3	18	M	Parallels Newsome and Sherwood Creek, some wetland, aggregate, then crosses and parallels Wildcat and Drake Creek	
1600000	12.89	12.90	Mid Crooked Rive	3	4	4	2	2	3	18	M	Parallels Newsome and Sherwood Creek, some wetland, aggregate, then crosses and parallels Wildcat and Drake Creek	
1610000	7.45	7.63	Bear Creek	2	0	0	0	0	0	2	L	No roads, on top ridge, 50 ft in watershed	
1610000	12.90	13.40	Mid Crooked Rive	2	4	4	2	2	3	17	M	Crosses Newsome Creek, adjacent to Woods Springs	Current seasonal closure method is ineffective. Needs to find better method.
1620000	0.00	0.02	Mid Crooked Rive	4	4	4	2	2	3	19	M	Parallels Gibson Creek, landslide terrain 25%	Private land owner would like gates to close road.
1640000	0.00	0.80	Bear Creek	3	5	4	3	2	2	19	M	Parallels Kloochman Creek for 2.5 miles, gravel	Potential project - Increase maintenance level to reduce sediment delivery. Road parallels Newsome Creek.
1640000	0.80	0.94	Bear Creek	3	5	4	3	2	2	19	M	Parallels Kloochman Creek for 2.5 miles, gravel	Monitor to determine actual need. Seasonal closure is ineffective. Need to find better closure. Private land owner would like to see Gates.
1670000	21.96	23.00	Camp Creek	2	1	0	2	0	0	5	L	Crosses three intermittent tributaries	
1670000	23.00	28.99	Camp Creek	2	1	0	2	0	0	5	L	Crosses three intermittent tributaries	
1670000	0.00	0.40	Camp Creek	2	1	0	2	0	0	5	L	Crosses three intermittent tributaries	
1670000	30.24	30.59	Mid Crooked Rive	4	3	0	2	0	1	10	M	Crosses Rimrock Creek and upper end of Maury Creek	
1670000	30.59	30.61	Mid Crooked Rive	4	3	0	2	0	1	10	M	Crosses Rimrock Creek and upper end of Maury Creek	
1670000	30.61	30.61	Mid Crooked Rive	4	3	0	2	0	1	10	M	Crosses Rimrock Creek and upper end of Maury Creek	
1670000	30.61	31.55	Mid Crooked Rive	4	3	0	2	0	1	10	M	Crosses Rimrock Creek and upper end of Maury Creek	
1680000	7.63	7.92	Bear Creek	3	0	0	0	0	0	3	L	Top of ridge	
1680000	13.40	21.86	Mid Crooked Rive	6	3	2	2	0	3	16	H	Crosses Wildcat Creek, wetland, 80% landslide terrain	
1680000	21.86	21.90	Mid Crooked Rive	6	3	2	2	0	3	16	H	Crosses Wildcat Creek, wetland, 80% landslide terrain	
1680000	21.90	21.94	Mid Crooked Rive	6	3	2	2	0	3	16	H	Crosses Wildcat Creek, wetland, 80% landslide terrain	
1690000	1.10	4.70	Mid Crooked Rive	4	3	0	0	0	0	7	M	Crosses Wildcat Creek	
1690000	4.70	11.60	Mid Crooked Rive	4	3	0	0	0	0	7	M	Crosses Wildcat Creek	
1690000	11.60	17.90	Mid Crooked Rive	4	3	0	0	0	0	7	M	Crosses Wildcat Creek	Increase maintenance level and frequency.

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
1700000	7.92	8.22	Bear Creek	2	5	4	2	2	2	17	M	Parallels Faught Creek for 3 miles, native surfaced, road to Antelope Reservoir, crosses Bear Creek	First two segments may not need increased maintenance.
1700000	8.22	8.87	Bear Creek	2	5	4	2	2	2	17	M	Parallels Faught Creek for 3 miles, native surfaced, road to Antelope Reservoir, crosses Bear Creek	
1700000	8.87	9.13	Bear Creek	2	5	4	2	2	2	17	M	Parallels Faught Creek for 3 miles, native surfaced, road to Antelope Reservoir, crosses Bear Creek	
1700000	0.00	0.57	Mid Crooked Rive	2	4	4	2	2	0	14	M	Parallels Pine Creek	
1700600	0.94	1.18	Bear Creek	1	0	0	0	0	0	1	L	Antelope Reservoir campground	
1700600	1.18	1.38	Bear Creek	1	0	0	0	0	0	1	L	Antelope Reservoir campground	
1750000	9.13	10.25	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	10.25	10.33	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	10.33	13.60	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	13.60	15.22	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	15.22	20.00	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	20.00	21.50	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	0.00	4.44	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	4.44	4.44	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	4.44	4.44	Bear Creek	2	2	1	3	0	0	8	L	Top of ridge, but crosses to south side, native surface, crosses four intermittent streams	
1750000	0.40	1.20	Camp Creek	2	0	0	0	0	0	2	L	Top of ridge	
1750000	1.20	1.70	Camp Creek	2	0	0	0	0	0	2	L	Top of ridge	
1750000	31.55	31.85	Mid Crooked Rive	3	1	0	0	0	0	4	L	Top of watershed	
1750000	34.59	35.89	Mid Crooked Rive	3	3	0	0	0	2	8	L	Crosses Sanford Creek and its wetland	
1750000	0.57	0.70	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
1750000	0.70	10.30	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	0.00	0.70	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	0.00	8.42	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	8.42	8.70	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	8.70	16.70	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	0.00	5.80	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	0.00	5.00	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	5.00	5.09	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	0.00	0.20	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1750000	0.20	0.40	Mid Crooked Rive	3	2	0	0	0	0	5	L	Top of drainage, 30% landslide terrain	
1760000	0.00	9.00	Camp Creek	2	2	0	3	0	0	7	L	Native surfaced, midslope	
1760000	9.00	15.17	Camp Creek	2	2	0	3	0	0	7	L	Native surfaced, midslope	
1760000	0.00	0.02	Mid Crooked Rive	2	3	0	0	0	0	5	L	Goes to Tower Point Lookout	
1760000	0.02	0.20	Mid Crooked Rive	2	3	0	0	0	0	5	L	Goes to Tower Point Lookout	
2150000	22.37	22.69	McKay	4	7	6	2	2	0	21	2H	Road up Allen Creek, native surfaced, Crosses Allen Creek four times, Parallels Allen Creek for 10 miles, then Fall Creek for two miles	
2150000	22.69	22.86	McKay	4	7	6	2	2	0	21	2H	Road up Allen Creek, native surfaced, Crosses Allen Creek four times, Parallels Allen Creek for 10 miles, then Fall Creek for two miles	
2150000	2.12	2.14	Trout Headwater	3	4	3	4	1	1	16	M	Crosses east fork Foley Creek, parallels Foley, native surfaced	County road - gravel entire road (potential project for county funding) gravel would reduce fine sediment delivery. Verify accuracy of data (may be partial gravel)
2150000	0.00	0.30	Willow Creek	2	2	0	0	0	0	4	L	Ridge top, native surface	ditto
2200000	3.22	3.40	Bridge Creek	2	4	4	2	7	0	19	H	Parallels Johnson Creek	ditto
2200000	0.00	0.20	Middle N. Fork Cr	3	3	2	1	1	3	13	L	Crosses by Allen Creek Reservoir and Beetle Creek, parallels Booth Creek	ditto
2200000	0.00	0.10	Middle N. Fork Cr	3	3	2	1	1	3	13	L	Crosses by Allen Creek Reservoir and Beetle Creek, parallels Booth Creek	
2200000	0.00	2.50	Mountain Creek	6	3	3	2	7	1	22	2H	Gravel, parallels Badger Creek, crosses numerous dry meadows, crosses Hoffman, Bug and four intermittent tribs, landslide terrain	
2200000	0.00	2.00	Mountain Creek	6	3	3	2	7	1	22	2H	Gravel, parallels Badger Creek, crosses numerous dry meadows, crosses Hoffman, Bug and four intermittent tribs, landslide terrain	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
2200000	0.90	1.20	Upper N. Fork Crd	1	4	4	2	2	4	17	M	Parallels and crosses Howard Creek, and parallels and crosses west Howard Creek, crosses Indian Creek, Cross White Creek, Stump Creek, Fox Creek, Elliot Creek	
2200000	0.00	0.50	Upper N. Fork Crd	1	4	4	2	2	4	17	M	Parallels and crosses Howard Creek, and parallels and crosses west Howard Creek, crosses Indian Creek, Cross White Creek, Stump Creek, Fox Creek, Elliot Creek	
2200000	0.00	18.13	Upper Ochoco	3	0	5	3	4	5	20	M	Parallels Ochoco Creek, crosses numerous times, paved, near Walton Lake	
2200930	0.00	0.20	Mountain Creek	6	0	0	0	1	0	7	H	Scott's campground, landslide terrain	
2210000	0.00	1.00	Bridge Creek	6	6	5	4	7	0	28	3H	Parallels west branch of Bridge Creek, crosses O'Kelly and other unnamed creeks, very steep with switchbacks	
2210000	0.00	4.30	Bridge Creek	6	6	5	4	7	0	28	3H	Parallels west branch of Bridge Creek, crosses O'Kelly and other unnamed creeks, very steep with switchbacks	
2210000	0.00	3.30	Upper Ochoco	4	3	4	2	0	2	15	M	Parallels Thronson Creek for half stream length	
2210000	0.00	3.32	Upper Ochoco	4	3	4	2	0	2	15	M	Parallels Thronson Creek for half stream length	County segment- West Branch Bridge Creek Federal Highways Project, replace undersize culverts.
2210000	0.00	14.08	Upper Ochoco	4	3	4	2	0	2	15	M	Parallels Thronson Creek for half stream length	
2220000	14.08	19.93	Upper Ochoco	2	0	0	0	0	2	4	L	Road around Walton Lake	
2220000	19.93	19.95	Upper Ochoco	2	0	0	0	0	2	4	L	Road around Walton Lake	
2220010	36.57	41.08	Upper Ochoco	2	0	0	0	0	0	2	L	Spur	
2230000	0.00	0.20	Middle N. Fork Crd	2	1	0	0	0	0	3	L	Ridge top, native	
2230000	0.00	6.51	Middle N. Fork Crd	2	1	0	0	0	0	3	L	Ridge top, native	
2230000	6.51	14.76	Middle N. Fork Crd	2	1	0	0	0	0	3	L	Ridge top, native	
2230000	14.76	19.30	Middle N. Fork Crd	2	1	0	0	0	0	3	L	Ridge top, native	
2230000	19.30	23.30	Middle N. Fork Crd	2	1	0	0	0	0	3	L	Ridge top, native	
2230000	23.30	24.80	Middle N. Fork Crd	2	1	0	0	0	0	3	L	Ridge top, native	
2230000	24.80	26.10	Middle N. Fork Crd	2	1	0	0	0	0	3	L	Ridge top, native	
2230000	26.10	28.88	Middle N. Fork Crd	2	1	0	0	0	0	3	L	Ridge top, native	
2230000	0.50	1.95	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2230000	0.00	0.98	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2230000	0.98	2.45	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2230000	55.93	56.66	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2230000	56.66	59.21	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2230000	59.21	60.22	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2230000	0.00	1.80	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2230000	1.80	2.24	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
2230000	0.00	1.44	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2230000	1.44	3.04	Upper N. Fork Crd	3	4	3	2	0	0	12	M	Parallels Fox Creek	
2300000	19.95	19.99	Upper Ochoco	2	0	0	0	0	1	3	L	Parallels Ochoco Creek	
2300403	41.08	41.72	Upper Ochoco	0	0	0	0	0	0	0	L	Road to Big Summit RD compound	
2600000	14.70	21.50	Bear Creek (Bridg	4	0	0	4	0	0	8	M	Paved, parallels Heflin Cree for 1.5 miles, crosses two intermittent tributaries, landslide terrain	
2600000	0.00	7.70	Bridge Creek	2	1	4	2	7	0	16	H	Paved, crosses one intermittent trib, parallels west fork of Bridge Creek	
2600000	7.70	9.43	Bridge Creek	2	1	4	2	7	0	16	H	Paved, crosses one intermittent trib, parallels west fork of Bridge Creek	
2600000	0.00	1.10	Deschutes South	0	0	0	0	0	0	0	L	State Highway, crosses numerous intermittent tributaries	
2600000	0.00	2.31	Deschutes South	0	0	0	0	0	0	0	L	State Highway, crosses numerous intermittent tributaries	
2600000	0.00	2.75	Deschutes South	0	0	0	0	0	0	0	L	State Highway, crosses numerous intermittent tributaries	
2600000	0.00	0.40	Lower Crooked Rf	0	0	0	0	0	0	0	L	Paved, crosses Grizzly Mountain Canyon Creek, Lytle Creek	
2600000	0.00	1.13	Lower Crooked Rf	0	0	0	0	0	0	0	L	Paved, crosses Grizzly Mountain Canyon Creek, Lytle Creek	
2600000	1.13	1.43	Lower Crooked Rf	0	0	0	0	0	0	0	L	Paved, crosses Grizzly Mountain Canyon Creek, Lytle Creek	
2600000	1.43	3.53	Lower Crooked Rf	0	0	0	0	0	0	0	L	Paved, crosses Grizzly Mountain Canyon Creek, Lytle Creek	
2600000	19.83	25.10	Lower Ochoco	2	3	4	2	0	1	12	M	Paved, follows Ochoco Creek	
2600000	25.10	25.45	Lower Ochoco	2	3	4	2	0	1	12	M	Paved, follows Ochoco Creek	
2600000	25.45	28.57	Lower Ochoco	2	3	4	2	0	1	12	M	Paved, follows Ochoco Creek	
2600000	28.57	37.90	Lower Ochoco	2	3	4	2	0	1	12	M	Paved, follows Ochoco Creek	
2600000	4.00	7.90	Lower South Fork	2	0	0	0	0	0	2	L	State Highway at Dayville	
2600000	22.86	23.22	McKay	0	0	0	0	0	0	0	L	Paved highway	
2600000	0.00	0.16	Mill	2	0	4	0	0	0	6	M	Crosses Mill Creek right above Ochoco reservoir	
2600000	0.20	1.50	Mountain Creek	6	0	0	0	1	0	7	H	Highway, major reconstruction, landslide terrain	
2600000	11.18	11.29	Rock Creek	2	3	0	2	7	0	14	H	Highway crosses Rock Creek that has adult steelhead	
2600000	0.00	0.54	Upper Middle Joh	2	3	0	2	7	0	14	H	Crosses cottonwood creek	
2600000	19.99	30.00	Upper Ochoco	1	4	6	3	4	4	22	H	Parallels Mark's Creek	
2600000	5.90	6.10	Willow Creek	0	0	0	0	0	0	0	L	Paved	
2600000	6.10	7.61	Willow Creek	0	0	0	0	0	0	0	L	Paved	aka Marks Creek watershed
2600000	7.61	7.88	Willow Creek	0	0	0	0	0	0	0	L	Paved	
2600150	41.72	47.51	Upper Ochoco	1	0	0	0	0	0	1	L	Cougar Campground	
2600550	30.00	36.98	Upper Ochoco	1	0	0	0	0	0	1	L	Ochoco Divide Campground	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
2600550	0.00	11.79	Upper Ochoco	1	0	0	0	0	0	1	L	Ochoco Divide Campground	
2600828	7.88	8.36	Willow Creek	0	0	0	0	0	0	0	L	Spur	
2610000	11.79	19.92	Upper Ochoco	3	3	4	2	0	3	15	M	Parallels Little Hay Creek, aggregate, parallels Coyle Creek	
2610000	0.00	4.43	Upper Ochoco	3	3	4	2	0	3	15	M	Parallels Little Hay Creek, aggregate, parallels Coyle Creek	
2610400	4.43	8.68	Upper Ochoco	2	0	0	0	0	0	2	L	Compound, Campground	
2610401	47.82	55.91	Upper Ochoco	2	0	0	0	0	0	2	L	Compound, Campground	
2610500	0.00	6.28	Upper Ochoco	2	0	0	0	0	0	2	L	Compound, Campground	
2610510	8.68	22.54	Upper Ochoco	2	0	0	0	0	0	2	L	Compound, Campground	
2610511	0.00	5.09	Upper Ochoco	2	0	0	0	0	0	2	L	Compound, Campground	
2610515	6.28	19.61	Upper Ochoco	2	0	0	0	0	0	2	L	Compound, Campground	
2610515	19.61	19.72	Upper Ochoco	2	0	0	0	0	0	2	L	Compound, Campground	
2620000	19.72	24.00	Upper Ochoco	4	4	4	1	0	2	15	M	Parallels Long Hollow Creek for part of road length	
2630000	9.43	11.70	Bridge Creek	6	4	3	2	7	4	26	2H	Top of watershed, crosses Dunn Spring Lake and upper end of Bridge Creek, native surface, springs, landslide terrain, landslide debris	
2630000	11.70	11.74	Bridge Creek	6	4	3	2	7	4	26	2H	Top of watershed, crosses Dunn Spring Lake and upper end of Bridge Creek, native surface, springs, landslide terrain, landslide debris	
2630000	11.74	13.90	Bridge Creek	6	4	3	2	7	4	26	2H	Top of watershed, crosses Dunn Spring Lake and upper end of Bridge Creek, native surface, springs, landslide terrain, landslide debris	Monitor road on annual basis. High concern from wildlife standpoint.
2630000	13.90	18.67	Bridge Creek	6	4	3	2	7	4	26	2H	Top of watershed, crosses Dunn Spring Lake and upper end of Bridge Creek, native surface, springs, landslide terrain, landslide debris	Implement seasonal closures to reduce erosion potential during spring melt.
2630000	0.00	6.40	Deep Creek	1	3	3	0	3	3	13	L	Top of ridge, crosses Happy Camp, Double Corral (both fish barriers and undersized), GIS layer does not show all stream crossings	do not increase maintenance level
2630000	6.40	9.00	Deep Creek	1	3	3	0	3	3	13	L	Top of ridge, crosses Happy Camp, Double Corral (both fish barriers and undersized), GIS layer does not show all stream crossings	wildlife would like to close roads that provide loop access to major habitat blocks and major primitive areas--this is important wildlife area for solitude/lack of human disturbance.

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
2630000	0.00	1.78	Deep Creek	1	3	3	0	3	3	13	L	Top of ridge, crosses Happy Camp, Double Corral (both fish barriers and undersized), GIS layer does not show all stream crossings	Native Surface section - implement seasonal closures to reduce erosion potential during spring melt.
2630000	1.78	2.38	Deep Creek	1	3	3	0	3	3	13	L	Top of ridge, crosses Happy Camp, Double Corral (both fish barriers and undersized), GIS layer does not show all stream crossings	replace undersize culverts near Happy Camp and Double Corral
2630000	2.38	6.37	Deep Creek	1	3	3	0	3	3	13	L	Top of ridge, crosses Happy Camp, Double Corral (both fish barriers and undersized), GIS layer does not show all stream crossings	
2630000	28.88	33.50	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	33.50	34.03	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	34.03	34.04	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	All of these, seasonal closures to reduce erosion during spring runoff and wet season in the fall.
2630000	34.04	34.13	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	34.13	34.18	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	34.18	35.50	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	35.50	43.50	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	0.00	0.33	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	0.00	6.70	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	0.00	3.65	Middle N. Fork Cr	3	1	0	0	0	0	4	L	Ridge top, native	
2630000	0.00	0.75	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	0.75	1.90	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	0.00	4.65	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	All of these, seasonal closures to reduce erosion during spring runoff and wet season in the fall.
2630000	0.00	1.48	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	1.48	3.67	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	3.67	5.49	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	5.49	6.20	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	0.00	4.40	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	0.00	3.32	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	3.32	4.96	Mountain Creek	3	1	0	0	1	0	5	L	Ridge top road	
2630000	3.04	7.00	Upper N. Fork Cr	1	2	0	0	0	2	5	L	Ridge top	
2630000	0.00	0.46	Upper N. Fork Cr	1	2	0	0	0	2	5	L	Ridge top	
2630000	0.46	1.42	Upper N. Fork Cr	1	2	0	0	0	2	5	L	Ridge top	see Bridge Creek comments - wildlife, increase maintenance level on aggregate section.
2630000	5.09	7.08	Upper Ochoco	4	2	0	0	0	2	8	M	Ridge top	
2630000	0.00	0.50	Upper Ochoco	4	2	0	0	0	2	8	M	Ridge top	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
2630000	0.50	6.68	Upper Ochoco	4	2	0	0	0	2	8	M	Ridge top	increase maintenance level rather than travel restrictions because of dormant landslide terrain and seeps.
2680000	1.99	2.92	Willow Creek	0	0	0	0	0	0	0	L		Implement seasonal closures to reduce erosion potential during spring melt.
2690000	2.92	3.80	Willow Creek	0	0	0	0	0	0	0	L		No consistent recommendations. Increased maintenance would increase use of loop road. Suggestions to implement seasonal closure instead of increased maintenance.
2700000	0.00	0.30	Bear Creek (Bridg	6	0	0	1	0	4	11	H	Paved portion is at top of ridge	
2700000	0.00	1.30	Bear Creek (Bridg	6	1	0	0	0	2	9	H	Native surfaced portion is still at top of ridge, landslide terrain above and below road	
2700000	1.30	1.33	Bear Creek (Bridg	6	1	0	0	0	2	9	H	Native surfaced portion is still at top of ridge, landslide terrain above and below road	Parallels wilderness boundary for about 5 miles. This is a high value segment of the Summit Trail--maintain as native surface.
2700000	1.33	1.34	Bear Creek (Bridg	6	1	0	0	0	2	9	H	Native surfaced portion is still at top of ridge, landslide terrain above and below road	Relocate section of 27 road to the ridge top (north of current location). Would affect two trails. Illegal firewood cutting along roadway. Potential vehicle access to wilderness. Heavy use - additional maintenance.
2700000	1.34	3.00	Bear Creek (Bridg	6	1	0	0	0	2	9	H	Native surfaced portion is still at top of ridge, landslide terrain above and below road	Unable to increase maintenance in current location (wilderness, summit trail).
2700000	0.00	4.00	Bear Creek (Bridg	6	1	0	0	0	2	9	H	Native surfaced portion is still at top of ridge, landslide terrain above and below road	Close a section in the middle to eliminate through "loop" road. Close at whistler through to asphalt because this section is constructed on landslide scarp. This option maintains access to trailheads.
2700000	4.00	4.60	Bear Creek (Bridg	6	1	0	0	0	2	9	H	Native surfaced portion is still at top of ridge, landslide terrain above and below road	If a section of the 27 road were closed, then maintenance would need to be increased on other roads to account for increased traffic.

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
2700000	0.00	2.57	Bear Creek (Bridge)	6	1	0	0	0	2	9	H	Native surfaced portion is still at top of ridge, landslide terrain above and below road	
2700000	3.53	8.40	Lower Crooked R	0	0	0	0	0	0	0	L	Little McKay road that goes North out of Prineville	
2700000	8.40	13.50	Lower Crooked R	0	0	0	0	0	0	0	L	Little McKay road that goes North out of Prineville	Finally, leave it the same. These recommendations include all native surface sections.
2700000	37.90	39.54	Lower Ochoco	1	0	0	0	0	0	1	L	Little McKay	
2700000	23.22	24.10	McKay	3	1	4	3	5	2	18	M	Paved follows McKay Creek, then follows Little McKay	
2700000	24.10	24.11	McKay	3	1	4	3	5	2	18	M	Paved follows McKay Creek, then follows Little McKay	
2700000	24.11	26.49	McKay	3	1	4	3	5	2	18	M	Paved follows McKay Creek, then follows Little McKay	
2700000	0.16	2.60	Mill	2	0	2	2	0	4	10	M	Six wetland hits, almost a ridgetop road, paved	
2700000	0.00	0.68	Mill	2	2	1	1	0	4	10	M	Six wetland hits, almost a ridgetop road, native surfaced	
2700000	0.68	4.60	Mill	2	2	1	1	0	4	10	M	Six wetland hits, almost a ridgetop road, native surfaced	see Bear Creek (Bridge) comments
2700000	0.00	0.19	Mill	2	2	1	1	0	4	10	M	Six wetland hits, almost a ridgetop road, native surfaced	
2700000	0.19	0.38	Mill	2	2	1	1	0	4	10	M	Six wetland hits, almost a ridgetop road, native surfaced	
2700000	0.38	0.45	Mill	2	2	1	1	0	4	10	M	Six wetland hits, almost a ridgetop road, native surfaced	
2700000	0.45	0.52	Mill	2	2	1	1	0	4	10	M	Six wetland hits, almost a ridgetop road, native surfaced	
2700000	2.14	2.20	Trout Headwater	1	0	0	0	1	0	2	L	Ridge top	
2700000	2.20	2.24	Trout Headwater	1	0	0	0	1	0	2	L	Ridge top	
2700000	6.68	11.77	Upper Ochoco	3	0	0	0	0	0	3	L	Ridge top, paved	
2700000	11.77	15.67	Upper Ochoco	3	0	0	0	0	0	3	L	Ridge top, paved	
2705000	26.49	26.60	McKay	4	3	1	3	0	3	14	M	Aggregate, crosses two intermittent streams, wetland	
2710000	30.60	33.70	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	0.00	0.01	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	0.01	3.33	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	3.33	3.67	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	3.67	12.00	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	12.00	20.60	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	20.60	23.20	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	23.20	24.20	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	24.20	25.80	McKay	3	1	0	0	0	0	4	L	Top of ridge	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
2710000	25.80	26.00	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	26.00	26.26	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	26.26	29.43	McKay	3	1	0	0	0	0	4	L	Top of ridge	
2710000	0.00	3.10	Trout Headwater	2	0	0	0	1	0	3	L	Ridge top	
2710000	0.00	3.10	Trout Headwater	2	0	0	0	1	0	3	L	Ridge top	
2710000	0.00	0.46	Trout Headwater	2	0	0	0	1	0	3	L	Ridge top	
2710000	0.46	1.70	Trout Headwater	2	0	0	0	1	0	3	L	Ridge top	
2710000	0.00	0.28	Trout Headwater	2	0	0	0	1	0	3	L	Ridge top	
2710000	0.28	0.90	Trout Headwater	2	0	0	0	1	0	3	L	Ridge top	
2710000	0.90	3.55	Trout Headwater	2	0	0	0	1	0	3	L	Ridge top	
2710000	0.00	5.27	Trout Headwater	2	0	0	0	1	0	3	L	Ridge top	
2715000	29.43	29.84	McKay	7	0	0	0	0	0	7	H	Near Dutchman Spring, 100 feet in watershed, landslide debris	
2715000	5.27	5.75	Trout Headwater	8	3	2	0	1	0	14	H	Follows Dutchman Creek, landslide terrain	
2720000	26.60	27.43	McKay	3	0	0	0	0	1	4	L		
2720000	2.24	3.46	Trout Headwater	8	4	2	5	4	0	23	H	Midslope road, native surface, Potlid Creek, Cartwright Creek, Big Log Creek, Dutchman Creek, landslide terrain	
2720000	3.46	3.70	Trout Headwater	8	4	2	5	4	0	23	H	Midslope road, native surface, Potlid Creek, Cartwright Creek, Big Log Creek, Dutchman Creek, landslide terrain	
2720000	3.70	4.19	Trout Headwater	8	4	2	5	4	0	23	H	Midslope road, native surface, Potlid Creek, Cartwright Creek, Big Log Creek, Dutchman Creek, landslide terrain	Need annual monitoring on active landslide. Replace undersize culverts
2720000	4.19	5.90	Trout Headwater	8	4	2	5	4	0	23	H	Midslope road, native surface, Potlid Creek, Cartwright Creek, Big Log Creek, Dutchman Creek, landslide terrain	Upgrade pipes
2720000	5.90	9.92	Trout Headwater	8	4	2	5	4	0	23	H	Midslope road, native surface, Potlid Creek, Cartwright Creek, Big Log Creek, Dutchman Creek, landslide terrain	
2720000	9.92	11.07	Trout Headwater	8	4	2	5	4	0	23	H	Midslope road, native surface, Potlid Creek, Cartwright Creek, Big Log Creek, Dutchman Creek, landslide terrain	
2720000	11.07	11.73	Trout Headwater	8	4	2	5	4	0	23	H	Midslope road, native surface, Potlid Creek, Cartwright Creek, Big Log Creek, Dutchman Creek, landslide terrain	
2725000	29.84	29.97	McKay	3	0	0	0	0	1	4	L		
2725000	5.75	7.57	Trout Headwater	7	3	3	3	3	0	19	H	Follows Trout Creek, crosses Potlid, landslide terrain	
2730000	2.57	5.47	Bear Creek (Bridg	8	4	2	5	2	0	21	H	Gravel, midsloped road, crosses Bear Creek and twelve smaller and intermittent streams, landslide terrain	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
2730000	5.47	5.81	Bear Creek (Bridg	8	4	2	5	2	0	21	H	Gravel, midsloped road, crosses Bear Creek and twelve smaller and intermittent streams, landslide terrain	Need annual monitoring. Determine upgrade/replace undersize culverts.
2730000	27.43	27.74	McKay	3	0	0	0	0	1	4	L		Need annual monitoring. Determine upgrade/replace undersize culverts.
2730000	27.74	28.90	McKay	3	0	0	0	0	1	4	L		Parallels and enters winter range - seasonal closure. Propose increase maintenance level.
2730000	11.73	14.90	Trout Headwater	8	4	2	5	4	1	24	H	Crosses Potlid Creek, West fork of Trout Creek, Auger Creek, one meadow, midslope, landslide terrain	Need annual monitoring. Determine upgrade/replace undersize culverts.
2730000	0.00	0.26	Trout Headwater	8	4	2	5	4	1	24	H	Crosses Potlid Creek, West fork of Trout Creek, Auger Creek, one meadow, midslope, landslide terrain	Propose regular maintenance, increase maintenance.
2730000	0.26	1.54	Trout Headwater	8	4	2	5	4	1	24	H	Crosses Potlid Creek, West fork of Trout Creek, Auger Creek, one meadow, midslope, landslide terrain	Need annual monitoring on active landslide. Replace undersize culverts
2730250	0.00	3.20	Bear Creek (Bridg	8	5	0	5	3	1	22	H	Native surface with spot gravel road, midslope, landslide terrain, Rail Creek, Scotty Creek, several intermittents	Propose regular maintenance, increase maintenance.
2735000	5.81	5.91	Bear Creek (Bridg	8	5	5	4	2	0	24	H	Crosses north fork of Bear Creek, parallels Bear Creek, crosses Scotty Creek and Grant Creek, landslide terrain	
2735000	5.91	6.15	Bear Creek (Bridg	8	5	5	4	2	0	24	H	Crosses north fork of Bear Creek, parallels Bear Creek, crosses Scotty Creek and Grant Creek, landslide terrain	Need annual monitoring. Replace undersize culverts.
2735000	1.54	2.55	Trout Headwater	7	3	1	0	3	0	14	H	Crosses a trib to Auger Creek	Need more effective seasonal closure winter range. Needs annual monitoring, possible upgrades.
2740000	0.00	2.00	Trout Headwater	4	3	5	3	4	4	23	M	Midslope road up Dutchman	
2745000	0.00	3.21	Bear Creek (Bridg	7	0	0	0	0	0	7	H	Top of ridge, small segment, landslide terrain	
2745000	0.52	1.80	Mill	2	0	0	0	0	0	2	L	Top of the watershed	
2745000	0.00	5.25	Trout Headwater	7	0	0	0	0	1	8	H	Ridgetop, landslide terrain	Monitor road for water quality/aquatic concerns.
2745000	0.00	3.80	Trout Headwater	7	0	0	0	0	1	8	H	Ridgetop, landslide terrain	Ties into options for 27 road.
2750000	0.00	6.70	Bear Creek (Bridg	7	3	0	2	0	0	12	H	Midslope, landslide terrain	
3000000	6.37	6.80	Deep Creek	1	3	2	3	4	3	16	M	Crosses west fork and east fork of Crazy Creek, Happy Camp, Double Corral, and five intermittents, midslope, fish presence in five perennial streams, more stream crossings than GIS shows	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
3000000	6.80	7.35	Deep Creek	1	3	2	3	4	3	16	M	Crosses west fork and east fork of Crazy Creek, Happy Camp, Double Corral, and five intermittents, midslope, fish presence in five perennial streams, more stream crossings than GIS shows	Monitor road for water quality/aquatic concerns.
3000000	3.65	3.70	Middle N. Fork Cr	1	3	2	1	1	4	12	M	Crosses North Fork of Crooked River, Porter Creek, wetlands	Surfacing is worn out and needs to be replaced. Replace undersize pipes.
3010000	3.70	4.70	Middle N. Fork Cr	1	3	2	1	1	4	12	M	Parallels Peterson Creek for 2mi, wetland	Surfacing is worn out and needs to be replaced.
3300000	19.33	19.51	McKay	4	4	5	2	0	0	15	M	Follows McKay Creek, aggregate	Surfacing is worn out and needs to be replaced.
3300000	19.51	19.51	McKay	4	4	5	2	0	0	15	M	Follows McKay Creek, aggregate	
3300000	19.51	21.72	McKay	4	4	5	2	0	0	15	M	Follows McKay Creek, aggregate	Need more effective closure techniques (party spots, mud-bogging, uncontrolled use in winter).
3300000	21.72	21.75	McKay	4	4	5	2	0	0	15	M	Follows McKay Creek, aggregate	
3300000	21.75	22.37	McKay	4	4	5	2	0	0	15	M	Follows McKay Creek, aggregate	
3300000	1.93	4.70	Mill	4	0	0	0	0	0	4	M	Mill Creek road, parallels Mill Creek, goes up west fork Mill, then up Harvey Creek, paved - private	
3300000	4.70	6.80	Mill	4	0	0	0	0	0	4	M	Mill Creek road, parallels Mill Creek, goes up west fork Mill, then up Harvey Creek, gravel	
3300000	6.80	7.20	Mill	4	4	6	2	0	0	16	H	Mill Creek road, parallels Mill Creek, goes up west fork Mill, then up Harvey Creek, paved - private	FS section - county is proposing to upgrade to double lane, asphalt.
3300000	7.20	9.41	Mill	4	4	6	2	0	0	16	H	Mill Creek road, parallels Mill Creek, goes up west fork Mill, then up Harvey Creek, paved - private	
3300000	9.41	9.44	Mill	4	4	6	2	0	0	16	H	Mill Creek road, parallels Mill Creek, goes up west fork Mill, then up Harvey Creek, paved - private	
3300300	0.00	4.30	Mill	2	0	0	0	0	0	2	L	Wildcat campground	
3320000	0.52	0.56	Mill	6	4	2	4	0	2	18	H	Hash Rock Creek	Revisit some pipes (I.e. Doe Creek), active landslide, 18-inch pipe.
3320000	0.56	0.64	Mill	6	4	2	4	0	2	18	H	Hash Rock Creek	
3330000	0.00	2.30	Mill	5	4	2	4	0	2	17	M	Crosses two intermittent tribs	Monitor road for water quality/aquatic concerns.
3330000	0.00	0.70	Mill	5	4	2	4	0	2	17	M	Crosses two intermittent tribs	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
3330000	0.70	3.90	Mill	5	4	2	4	0	2	17	M	Crosses two intermittent tribs	Monitor road for water quality/aquatic concerns. Check culvert sizes.
3330000	0.00	8.90	Mill	5	4	2	4	0	2	17	M	Crosses two intermittent tribs	
3330010	0.64	0.96	Mill	5	0	0	0	0	1	6	M	Small road	
3330010	0.96	2.49	Mill	5	0	0	0	0	1	6	M	Small road	
3350000	2.49	2.70	Mill	9	4	4	2	0	0	19	H	Crosses Benefield Creek	
3350000	2.70	2.81	Mill	9	4	4	2	0	0	19	H	Crosses Benefield Creek	
3350000	2.81	2.83	Mill	9	4	4	2	0	0	19	H	Crosses Benefield Creek	Monitor, check pipes. This should be Upper Ochoco.
3350000	2.83	2.85	Mill	9	4	4	2	0	0	19	H	Crosses Benefield Creek	
3350000	2.85	3.46	Mill	9	4	4	2	0	0	19	H	Crosses Benefield Creek	Check in Mill EIS should the entire road be closed.
3350000	3.46	3.75	Mill	9	4	4	2	0	0	19	H	Crosses Benefield Creek	Upgrade native surface sections to aggregate if road remains open. Disregard if the road is closed.
3350000	15.67	36.50	Upper Ochoco	4	3	2	4	0	0	13	M	Crosses Wildcat, Sears, Jim Elliot, Peterson Creek, midslope, active landslides and landslide terrain	
3350000	36.50	36.57	Upper Ochoco	4	3	2	4	0	0	13	M	Crosses Wildcat, Sears, Jim Elliot, Peterson Creek, midslope, active landslides and landslide terrain	
3360000	0.00	4.20	Mill	6	4	4	2	0	0	16	H	Parallels Lemon Creek	
3360000	0.00	4.80	Mill	6	4	4	2	0	0	16	H	Parallels Lemon Creek	
3370000	3.75	3.80	Mill	3	4	4	2	0	0	13	M	Parallels Dry Creek	Monitor for water quality/aquatic concerns.
3370000	0.00	2.11	Mill	3	4	4	2	0	0	13	M	Parallels Dry Creek	
3370000	2.11	12.20	Mill	3	4	4	2	0	0	13	M	Parallels Dry Creek	Increase maintenance level.
3380000	39.54	48.34	Lower Ochoco	5	0	0	0	0	0	5	M	Top of Ridge, landslide terrain	
3380000	28.90	29.60	McKay	5	3	2	4	0	0	14	M	Within the old Dry Creek area, landslide terrain	
3380000	29.60	30.60	McKay	5	3	2	4	0	0	14	M	Within the old Dry Creek area, landslide terrain	Monitor for water quality/aquatic concerns. Upgrade native surface to aggregate.
3380000	0.00	0.52	Mill	6	4	4	2	0	1	17	H	Parallels White Tail Springs	
3500000	10.00	11.50	Crooked River Gr	1	0	0	0	0	0	1	L	Paved, comes out of Round Butte	
3500000	0.00	5.25	Deschutes South	0	0	0	0	0	0	0	L	Paved	
3500000	5.25	9.81	Deschutes South	0	0	0	0	0	0	0	L	Paved	
3500000	6.60	11.03	Lake Billy Chinook	0	0	0	0	0	0	0	L	Goes from Island crosses Deschutes river arm of Lake Billy, paved	
3500000	11.03	11.10	Lake Billy Chinook	0	0	0	0	0	0	0	L	Goes from Island crosses Deschutes river arm of Lake Billy, paved	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
3800000	10.59	11.52	Lower Beaver	1	3	3	3	1	0	11	L	Crosses Wolf Creek, two intermittent tributaries, part paved, part aggregate, Not all streams in GIS	
3800000	11.52	16.22	Lower Beaver	1	3	3	3	1	0	11	L	Crosses Wolf Creek, two intermittent tributaries, part paved, part aggregate, Not all streams in GIS	
3800000	0.00	0.30	Lower South Fork	2	2	0	0	0	2	6	L	Top of ridge road, crosses South Fork of Black Canyon Creek	
3800000	0.00	0.05	Lower South Fork	2	2	0	0	0	2	6	L	Top of ridge road, crosses South Fork of Black Canyon Creek	
3800000	0.00	0.04	Lower South Fork	2	2	0	0	0	2	6	L	Top of ridge road, crosses South Fork of Black Canyon Creek	
3800000	0.00	3.50	Lower South Fork	2	2	0	0	0	2	6	L	Top of ridge road, crosses South Fork of Black Canyon Creek	
3800000	3.50	5.10	Lower South Fork	2	2	0	0	0	2	6	L	Top of ridge road, crosses South Fork of Black Canyon Creek	
3800000	5.10	6.22	Lower South Fork	2	2	0	0	0	2	6	L	Top of ridge road, crosses South Fork of Black Canyon Creek	
3800000	6.22	6.70	Lower South Fork	2	2	0	0	0	2	6	L	Top of ridge road, crosses South Fork of Black Canyon Creek	
3800000	11.29	11.31	Rock Creek	2	3	3	2	7	2	19	H	Parallels Squaw Creek #2, crosses Squaw Creek #2 Trib #11, Parallels Rock Creek	
3800000	11.31	11.40	Rock Creek	2	3	3	2	7	2	19	H	Parallels Squaw Creek #2, crosses Squaw Creek #2 Trib #11, Parallels Rock Creek	
3800000	0.54	1.64	Upper Middle Joh	2	4	0	2	0	0	8	M		Check pipe sizes.
3800000	0.00	3.40	Upper Middle Joh	2	4	0	2	0	0	8	M		
3800000	3.40	#####	Upper Middle Joh	2	4	0	2	0	0	8	M		
3800000	0.00	1.29	Upper Middle Joh	2	4	0	2	0	0	8	M		
3800000	1.29	2.50	Upper Middle Joh	2	4	0	2	0	0	8	M		
3800000	0.00	1.55	Upper Middle Joh	2	4	0	2	0	0	8	M		
3800000	0.00	4.80	Upper Middle Joh	2	4	0	2	0	0	8	M		
3810000	3.30	4.09	Lower Beaver	2	6	6	2	3	0	19	2H	Parallels Wolf Creek, crosses twice, crosses four intermittent tribs, gravel	
4200000	7.35	8.84	Deep Creek	1	3	5	3	3	2	17	M	Either paved or graveled, Paved parallels Deep Creek, then parallels Buck Hollow Creek (one fish barrier and sediment delivery from cut slope), then ridge top, in and out of watershed.	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
4200000	8.84	8.99	Deep Creek	1	3	5	3	3	2	17	M	Either paved or graveled, Paved parallels Deep Creek, then parallels Buck Hollow Creek (one fish barrier and sediment delivery from cut slope), then ridge top, in and out of watershed.	Monitor for water quality/aquatic concerns. Check pipes.
4200000	8.99	12.24	Deep Creek	1	3	5	3	3	2	17	M	Either paved or graveled, Paved parallels Deep Creek, then parallels Buck Hollow Creek (one fish barrier and sediment delivery from cut slope), then ridge top, in and out of watershed.	Upgrade pipes where needed.
4200000	12.24	12.30	Deep Creek	1	3	5	3	3	2	17	M	Either paved or graveled, Paved parallels Deep Creek, then parallels Buck Hollow Creek (one fish barrier and sediment delivery from cut slope), then ridge top, in and out of watershed.	Aggregate sections are proposed to be upgraded to single-lane asphalt.
4200000	12.30	12.52	Deep Creek	1	3	5	3	3	2	17	M	Either paved or graveled, Paved parallels Deep Creek, then parallels Buck Hollow Creek (one fish barrier and sediment delivery from cut slope), then ridge top, in and out of watershed.	
4200000	16.22	16.89	Lower Beaver	1	0	0	0	2	0	3	L	Paved, crosses Wolf Creek	
4200000	16.89	17.06	Lower Beaver	1	0	0	0	2	0	3	L	Paved, crosses Wolf Creek	
4200000	17.06	17.12	Lower Beaver	1	0	0	0	2	0	3	L	Paved, crosses Wolf Creek	
4200000	17.12	17.17	Lower Beaver	1	0	0	0	2	0	3	L	Paved, crosses Wolf Creek	
4200000	4.70	4.85	Middle N. Fork Cr	1	0	4	2	1	5	13	M	Paved, south edge of Big Summit Prarie, parallels North Fork Crooked River	
4200000	0.00	3.95	Middle N. Fork Cr	1	0	4	2	1	5	13	M	Paved, south edge of Big Summit Prarie, parallels North Fork Crooked River	
4200000	21.00	21.67	Paulina	1	2	0	0	0	0	3	L	Top of the ridge	
4200000	1.42	5.16	Upper N. Fork Crd	6	0	6	3	0	5	20	2H	Paved, crosses Johnson Creek and Polio Creek, Brush Creek, and North Fork Crooked River, 20% landslide terrain	
4200000	47.51	47.82	Upper Ochoco	3	0	2	3	0	1	9	L	Parallels Canyon Creek, Kyle Creek, paved	
4200100	6.09	11.66	Upper Ochoco	2	0	0	0	0	0	2	L	Spur	Upgrade pipes where needed.
4200460	3.95	4.00	Middle N. Fork Cr	1	0	0	0	0	0	1	L	Deep Creek Campground??	
4205000	0.00	6.06	Upper N. Fork Crd	5	2	0	0	0	1	8	M	Ridge top, wetland, landslide terrain	
4205000	6.06	6.09	Upper N. Fork Crd	5	2	0	0	0	1	8	M	Ridge top, wetland, landslide terrain	
4205000	24.00	42.52	Upper Ochoco	4	0	0	0	0	0	4	M	Road to Independent mine, ridge top	Monitor all sections for water quality/aquatic concerns.
4205000	42.52	44.90	Upper Ochoco	4	0	0	0	0	0	4	M	Road to Independent mine, ridge top	
4210000	0.00	0.05	Upper N. Fork Crd	1	3	2	2	1	2	11	L	West side of Big Summit Prarie, crosses Cram, Merrit Creek, Howard Creek	
4215000	19.52	19.56	Lower Ochoco	2	3	4	2	0	0	11	M	Follows Veazie Creek, aggregate	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
4215000	19.56	19.83	Lower Ochoco	2	3	4	2	0	0	11	M	Follows Veazie Creek, aggregate	
4215000	0.02	0.12	Mid Crooked River	3	3	2	4	0	0	12	M	Crosses Lodgepole, Buck, Horse Heaven, Rock Crusher, West Fork Horse Heaven Creek, native surfaced and gravel, 20% landslide terrain	
4215000	0.12	0.20	Mid Crooked River	3	3	2	4	0	0	12	M	Crosses Lodgepole, Buck, Horse Heaven, Rock Crusher, West Fork Horse Heaven Creek, native surfaced and gravel, 20% landslide terrain	
4215000	0.20	0.30	Mid Crooked River	3	3	2	4	0	0	12	M	Crosses Lodgepole, Buck, Horse Heaven, Rock Crusher, West Fork Horse Heaven Creek, native surfaced and gravel, 20% landslide terrain	
4215000	0.30	1.10	Mid Crooked River	3	3	2	4	0	0	12	M	Crosses Lodgepole, Buck, Horse Heaven, Rock Crusher, West Fork Horse Heaven Creek, native surfaced and gravel, 20% landslide terrain	
4215000	0.05	0.70	Upper N. Fork Crd	2	4	6	2	0	4	18	H	Parallels Gray Creek	
4215000	0.70	0.90	Upper N. Fork Crd	2	4	6	2	0	4	18	H	Parallels Gray Creek	
4215000	0.00	2.00	Upper Ochoco	3	0	0	0	0	0	3	L	Ridge top	Upgrade pipes where needed.
4220000	5.16	6.12	Upper N. Fork Crd	2	3	4	2	0	2	13	M	Parallels Lookout Creek, crosses Lytle Creek, native surface	Upgrade pipes where needed.
4225000	5.37	7.00	Lower N. Fork Crd	2	3	3	0	0	0	8	L	Parallels Committee Creek, native surfaced, road to Upper Falls	
4225000	0.00	8.25	Lower N. Fork Crd	2	3	3	0	0	0	8	L	Parallels Committee Creek, native surfaced, road to Upper Falls	
4225000	0.00	2.09	Lower N. Fork Crd	2	3	3	0	0	0	8	L	Parallels Committee Creek, native surfaced, road to Upper Falls	
4225000	6.12	10.24	Upper N. Fork Crd	1	2	0	0	0	2	5	L	Parallels north fork of Crooked River, past Williams Prairie, gravel	
4230000	2.09	6.27	Lower N. Fork Crd	1	5	6	2	1	4	19	H	Parallels Rough Canyon Creek, then Fox Canyon Creek, then parallels North Fox Canyon Creek, close to five reservoirs	
4230000	6.27	6.90	Lower N. Fork Crd	1	5	6	2	1	4	19	H	Parallels Rough Canyon Creek, then Fox Canyon Creek, then parallels North Fox Canyon Creek, close to five reservoirs	
4230000	6.90	6.91	Lower N. Fork Crd	1	5	6	2	1	4	19	H	Parallels Rough Canyon Creek, then Fox Canyon Creek, then parallels North Fox Canyon Creek, close to five reservoirs	Upgrade pipes where needed.
4230000	6.91	7.40	Lower N. Fork Crd	1	5	6	2	1	4	19	H	Parallels Rough Canyon Creek, then Fox Canyon Creek, then parallels North Fox Canyon Creek, close to five reservoirs	Close through route, native surface section.

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
4230000	7.40	11.84	Lower N. Fork Crd	1	5	6	2	1	4	19	H	Parallels Rough Canyon Creek, then Fox Canyon Creek, then parallels North Fox Canyon Creek, close to five reservoirs	
4230000	4.00	7.00	Middle N. Fork Crd	1	4	5	2	0	3	15	M	Parallels Hickey Creek for 2 mi	
4230000	0.00	6.16	Upper N. Fork Crd	5	2	0	0	0	1	8	M	Top of watershed	
4230000	0.00	15.45	Upper N. Fork Crd	5	2	0	0	0	1	8	M	Top of watershed	
4230000	15.45	16.14	Upper N. Fork Crd	5	2	0	0	0	1	8	M	Top of watershed	
4235000	0.20	1.00	Mid Crooked Rive	8	3	3	3	0	1	18	H	Long section of road, midslope, crosses numerous stream channels, gravel, 100% landslide debris and terrain	
4235000	1.00	1.80	Mid Crooked Rive	8	3	3	3	0	1	18	H	Long section of road, midslope, crosses numerous stream channels, gravel, 100% landslide debris and terrain	
4240000	11.84	17.95	Lower N. Fork Crd	1	3	2	2	0	0	8	L	Crosses Donnelly Creek and Lame Dog Creek	Monitor for water quality/aquatic. Check corrugated metal pipes.
4240000	17.95	18.11	Lower N. Fork Crd	1	3	2	2	0	0	8	L	Crosses Donnelly Creek and Lame Dog Creek	
4240000	18.11	18.30	Lower N. Fork Crd	1	3	2	2	0	0	8	L	Crosses Donnelly Creek and Lame Dog Creek	
4240000	18.30	18.71	Lower N. Fork Crd	1	3	2	2	0	0	8	L	Crosses Donnelly Creek and Lame Dog Creek	
4240000	7.00	10.20	Middle N. Fork Crd	1	2	0	0	0	0	3	L	Crosses one intermittent trib	
4240000	0.00	0.23	Paulina	1	1	0	0	0	0	2	L	barely pokes in	
4250000	0.10	0.21	Deep Creek	2	4	7	4	5	3	25	H	Parallels Deep Creek after road 42 leaves, crosses Jackson, Toggle, Happy Camp, Deep Creek, graveled, road impairs meander pattern along Deep Creek, some undersized culverts	
4250000	0.00	0.87	Deep Creek	2	4	7	4	5	3	25	H	Parallels Deep Creek after road 42 leaves, crosses Jackson, Toggle, Happy Camp, Deep Creek, graveled, road impairs meander pattern along Deep Creek, some undersized culverts	
4250000	0.87	2.40	Deep Creek	2	4	7	4	5	3	25	H	Parallels Deep Creek after road 42 leaves, crosses Jackson, Toggle, Happy Camp, Deep Creek, graveled, road impairs meander pattern along Deep Creek, some undersized culverts	Check size of corrugated metal pipes. Increase maintenance level.
4254000	0.00	4.55	Deep Creek	2	3	4	3	2	4	18	M	Parallels Little Summit Creek, crosses four intermittent tributaries	
4256000	4.55	4.60	Deep Creek	2	5	5	2	0	2	16	M	Parallels Happy Camp Creek, native surfaced, crosses three intermittent streams	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
4258000	4.60	6.50	Deep Creek	2	4	4	3	0	1	14	M	Parallels for the first 1.5 mile Toggle Creek, native surfaced	
4258000	0.00	1.47	Deep Creek	2	4	4	3	0	1	14	M	Parallels for the first 1.5 mile Toggle Creek, native surfaced	
4260000	2.40	2.70	Deep Creek	1	3	0	0	0	0	4	L	No stream crossings	
4260000	2.70	2.73	Deep Creek	1	3	0	0	0	0	4	L	No stream crossings	
4260000	4.09	10.20	Lower Beaver	2	3	2	4	1	0	12	M	Midslope Road, crosses North Wolf Creek, Miles Creek, seven intermittent tributaries, gravel	
4260000	5.14	5.37	Lower N. Fork Cro	1	1	0	0	0	0	2	L	Gravel, crosses one intermittent tributary	
4260000	0.00	1.62	Paulina	2	4	2	3	2	0	13	M	Crosses Paulina Creek, Burnt Corral Creek, Indian Creek, Roba Creek, Hewed Log Creek, Dipping Vat Creek, Dry Paulina Creek	
4260000	1.62	6.20	Paulina	2	4	2	3	2	0	13	M	Crosses Paulina Creek, Burnt Corral Creek, Indian Creek, Roba Creek, Hewed Log Creek, Dipping Vat Creek, Dry Paulina Creek	
4260000	6.20	7.00	Paulina	2	4	2	3	2	0	13	M	Crosses Paulina Creek, Burnt Corral Creek, Indian Creek, Roba Creek, Hewed Log Creek, Dipping Vat Creek, Dry Paulina Creek	
4260000	7.00	9.50	Paulina	2	4	2	3	2	0	13	M	Crosses Paulina Creek, Burnt Corral Creek, Indian Creek, Roba Creek, Hewed Log Creek, Dipping Vat Creek, Dry Paulina Creek	
4260000	9.50	13.70	Paulina	2	4	2	3	2	0	13	M	Crosses Paulina Creek, Burnt Corral Creek, Indian Creek, Roba Creek, Hewed Log Creek, Dipping Vat Creek, Dry Paulina Creek	
4260000	13.70	14.26	Paulina	2	4	2	3	2	0	13	M	Crosses Paulina Creek, Burnt Corral Creek, Indian Creek, Roba Creek, Hewed Log Creek, Dipping Vat Creek, Dry Paulina Creek	
4260000	14.26	15.84	Paulina	2	4	2	3	2	0	13	M	Crosses Paulina Creek, Burnt Corral Creek, Indian Creek, Roba Creek, Hewed Log Creek, Dipping Vat Creek, Dry Paulina Creek	
4260000	15.84	21.00	Paulina	2	4	2	3	2	0	13	M	Crosses Paulina Creek, Burnt Corral Creek, Indian Creek, Roba Creek, Hewed Log Creek, Dipping Vat Creek, Dry Paulina Creek	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
4270000	1.47	2.74	Deep Creek	1	3	3	4	3	4	18	M	Crosses little Summit Creek, Thornton Creek, crosses seven intermittent tributaries, close to little Summit Prarie, MidSlope, Aggregate	
4272000	2.74	8.20	Deep Creek	2	4	4	2	2	1	15	M	Parallels and crosses west Fork Thornton Creek, gravel road, crosses one intermittent stream	
4274000	0.00	0.59	Deep Creek	2	4	4	2	2	0	14	M	Parallels Thornton Creek, Aggregate surfaced, Crosses Thornton Creek once	
4276000	0.59	1.60	Deep Creek	1	3	2	2	2	2	12	L	Crosses Little Summit Creek, at head of Little Summit Prarie	
4276000	17.17	17.36	Lower Beaver	1	0	0	0	0	0	1	L	Top of ridge	
4280000	17.36	17.44	Lower Beaver	2	3	3	2	0	0	10	L	Native surface, parallels intermittent to North Wolf Creek 3/4 mile	Replace the pipe/upgrade silly metal thing in the road.
4280000	0.23	0.40	Paulina	2	4	3	1	1	0	11	M	Parallels Dipping Vat Creek	
4290000	10.20	10.59	Lower Beaver	2	5	5	3	0	2	17	M	Parallels intermittent tributary to Wolf Creek, aggregate, three to four perennial streams not on stream layer	
5100000	6.34	7.90	Mud Springs Cree	2	2	0	0	0	0	4	L	Parallels Dewies Canyon, crosses Red Shed Canyon, native surfaced	
5100000	0.00	2.55	Mud Springs Cree	2	2	0	0	0	0	4	L	Parallels Dewies Canyon, crosses Red Shed Canyon, native surfaced	
5100000	0.00	1.95	Mud Springs Cree	2	2	0	0	0	0	4	L	Parallels Dewies Canyon, crosses Red Shed Canyon, native surfaced	
5130000	0.00	0.01	Mud Springs Cree	2	1	0	0	0	0	3	L		
5160000	0.01	0.08	Mud Springs Cree	2	2	0	0	4	0	8	M	Crosses Mud Springs Creek	
5160000	18.93	22.91	Willow Creek	1	0	0	0	0	0	1	L		
5200000	0.08	0.30	Mud Springs Cree	2	2	0	0	0	3	7	L	Parallels Mud Springs Creek	
5200000	22.91	25.82	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
5250000	0.30	0.39	Mud Springs Cree	2	2	0	0	0	0	4	L		
5250000	25.82	29.34	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5300000	8.36	8.38	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
5300000	8.38	8.45	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
5300153	8.45	8.48	Willow Creek	0	0	0	0	0	0	0	L	Spur	
5300153	8.48	8.56	Willow Creek	0	0	0	0	0	0	0	L	Spur	
5310000	29.34	34.94	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5310000	34.94	40.73	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5320000	40.73	42.00	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5330000	8.56	8.74	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5340000	8.74	8.98	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5350000	8.98	9.01	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5350000	9.01	9.39	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5400000	9.39	9.56	Willow Creek	0	2	2	0	0	0	4	L	Crosses Willow Creek	
5480000	11.50	11.82	Crooked River Gr	1	0	0	0	0	0	1	L		

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
5480000	11.82	13.07	Crooked River Gra	1	0	0	0	0	0	1	L		
5500000	0.00	1.16	Deschutes South	0	0	0	0	0	0	0	L	Hwy 26 to Hwy 97	
5500000	1.16	4.60	Deschutes South	0	0	0	0	0	0	0	L	Hwy 26 to Hwy 98	
5500000	9.56	9.60	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
5500000	0.00	0.00	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
5540000	0.00	0.76	Steelhead	3	0	0	0	0	0	3	L	No tribs	
5600000	17.88	28.67	Deschutes South	0	0	0	0	0	0	0	L		
5600000	28.67	29.70	Deschutes South	0	0	0	0	0	0	0	L		
5700000	0.00	3.88	Crooked River Gra	2	1	0	0	0	0	3	L	Crosses three intermittent tributaries	
5700000	0.00	0.20	Lower Crooked R	1	0	0	0	0	0	1	L	No tribs	
5700000	0.20	2.00	Lower Crooked R	1	0	0	0	0	0	1	L	No tribs	
5700000	0.00	1.30	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5700000	0.00	0.18	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5710000	0.00	1.20	Lower Crooked R	2	2	0	0	0	0	4	L	Skull Hollow Road	
5720000	13.07	14.08	Crooked River Gra	2	0	0	0	0	0	2	L		
5720000	0.66	0.70	Lower Crooked R	2	0	0	0	0	0	2	L	Road to Sherwood Saddle	
5720000	0.70	0.99	Lower Crooked R	2	0	0	0	0	0	2	L	Road to Sherwood Saddle	
5730000	3.88	5.00	Crooked River Gra	1	1	0	0	0	2	4	L	Crosses five intermittent tributaries and goes to wetland	
5740000	0.00	0.97	Crooked River Gra	1	0	0	0	0	0	1	L	Flat road near Kings Gap, some sloughing into ditches	
5740000	0.97	1.50	Crooked River Gra	1	0	0	0	0	0	1	L	Flat road near Kings Gap, some sloughing into ditches	
5740000	0.00	0.90	Crooked River Gra	1	0	0	0	0	0	1	L	Flat road near Kings Gap, some sloughing into ditches	
5740000	0.00	0.75	Deschutes South	0	0	0	0	0	0	0	L	South of Haystack Reservoir	
5740000	0.00	0.60	Deschutes South	0	0	0	0	0	0	0	L	South of Haystack Reservoir	
5750000	0.00	1.80	Deschutes South	0	0	0	0	0	0	0	L	South of Haystack Reservoir	
5750000	0.18	6.50	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5760000	0.00	2.85	Willow Creek	1	0	0	0	0	0	1	L	Isolated Dirt Road	
5770000	0.90	6.50	Crooked River Gra	1	0	0	0	0	0	1	L	Crosses two intermitent tribs	
5800000	19.72	23.39	Lower Beaver	2	0	0	1	1	0	4	L	Paved, road to Rager RD	
5800000	6.70	10.24	Lower South Fork	1	2	0	0	0	0	3	L	Crosses south fork of Wind Creek	
5800000	2.00	3.49	Middle Beaver	2	2	5	1	3	4	17	M	Road to Rager and beyond, paved, crosses Rager Creek, Powell Creek, Tamarack Creek, Sugar Creek, North Fork Beaver Creek, Bear Creek	
5800000	3.49	3.50	Middle Beaver	2	2	5	1	3	4	17	M	Road to Rager and beyond, paved, crosses Rager Creek, Powell Creek, Tamarack Creek, Sugar Creek, North Fork Beaver Creek, Bear Creek	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
5800000	3.50	8.12	Middle Beaver	2	2	5	1	3	4	17	M	Road to Rager and beyond, paved, crosses Rager Creek, Powell Creek, Tamarack Creek, Sugar Creek, North Fork Beaver Creek, Bear Creek	Check on the funny pipes
5800000	8.12	10.91	Middle Beaver	2	2	5	1	3	4	17	M	Road to Rager and beyond, paved, crosses Rager Creek, Powell Creek, Tamarack Creek, Sugar Creek, North Fork Beaver Creek, Bear Creek	
5800000	10.91	10.93	Middle Beaver	2	2	5	1	3	4	17	M	Road to Rager and beyond, paved, crosses Rager Creek, Powell Creek, Tamarack Creek, Sugar Creek, North Fork Beaver Creek, Bear Creek	
5800000	11.80	11.90	Middle South Fork	1	3	5	2	1	4	16	M	Gravel, parallel Murray Creek, Sunflower Creek	
5800000	11.90	15.50	Middle South Fork	1	3	5	2	1	4	16	M	Gravel, parallel Murray Creek, Sunflower Creek	
5800050	4.00	4.30	Middle Beaver	2	0	2	0	0	0	4	L	Road into Sugar Creek Campground	Check on the funny pipes
5800050	4.30	4.30	Middle Beaver	2	0	2	0	0	0	4	L	Road into Sugar Creek Campground	
5800141	4.30	9.80	Middle Beaver	0	0	0	0	0	0	0	L	Compound roads	
5800142	10.93	11.00	Middle Beaver	0	0	0	0	0	0	0	L	Compound roads	
5800142	11.00	12.70	Middle Beaver	0	0	0	0	0	0	0	L	Compound roads	
5800143	0.00	2.50	Middle Beaver	1	0	0	0	0	0	1	L	Compound roads	
5800143	2.50	5.20	Middle Beaver	1	0	0	0	0	0	1	L	Compound roads	
5800145	12.70	13.12	Middle Beaver	1	0	0	0	0	0	1	L	Compound roads	
5800145	13.12	13.37	Middle Beaver	1	0	0	0	0	0	1	L	Compound roads	
5800500	62.83	65.52	Lower South Fork	1	0	0	0	0	1	2	L	Road to Frazier Campground	
5800500	65.52	69.29	Lower South Fork	1	0	0	0	0	1	2	L	Road to Frazier Campground	
5800500	69.29	69.76	Lower South Fork	1	0	0	0	0	0	1	L	Road to reservoir	
5800500	10.20	11.66	Middle South Fork	1	1	0	0	0	0	2	L	Road to Frazier Campground	
5810000	23.39	23.44	Lower Beaver	1	2	0	0	0	0	3	L	Crosses one intermittent trib	
5810000	10.24	10.30	Lower South Fork	1	0	0	0	0	0	1	L	Top of Black Canyon Wilderness	
5810000	10.30	10.71	Lower South Fork	1	0	0	0	0	0	1	L	Top of Black Canyon Wilderness	
5810000	10.71	11.92	Lower South Fork	1	0	0	0	0	0	1	L	Top of Black Canyon Wilderness	
5810000	11.92	14.50	Lower South Fork	1	0	0	0	0	0	1	L	Top of Black Canyon Wilderness	
5810000	13.37	13.43	Middle Beaver	1	4	2	2	3	2	14	M	Parallels Sugar Creek, crosses twice, gravel road	
5810000	13.43	13.56	Middle Beaver	1	4	2	2	3	2	14	M	Parallels Sugar Creek, crosses twice, gravel road	
5810000	13.57	14.24	Middle Beaver	1	4	2	2	3	2	14	M	Parallels Sugar Creek, crosses twice, gravel road	
5810000	2.60	5.70	Rock Creek	1	1	0	0	0	0	2	L	Ridge top	
5810000	5.70	9.00	Rock Creek	1	1	0	0	0	0	2	L	Ridge top	
5810000	0.00	7.00	Rock Creek	1	1	0	0	0	0	2	L	Ridge top	
5810000	0.00	0.49	Rock Creek	1	1	0	0	0	0	2	L	Ridge top	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
5820000	5.20	6.06	Middle Beaver	1	3	2	2	2	0	10	L	Crosses Powell Creek and three intermittent tribs	
5820000	0.00	3.00	Middle Beaver	1	3	2	2	2	0	10	L	Crosses Powell Creek and three intermittent tribs	
5830000	14.24	16.74	Middle Beaver	1	3	2	4	1	0	11	M	Crosses Tamarack, Rager, Heisler, Beaver Dam Creek, midslope	
5840000	0.00	0.50	Lower South Fork	1	0	0	0	0	0	1	L	Ridge Top, South side of Black Canyon	
5840000	0.50	0.53	Lower South Fork	1	0	0	0	0	0	1	L	Ridge Top, South side of Black Canyon	
5840000	0.00	0.17	Lower South Fork	1	0	0	0	0	0	1	L	Ridge Top, South side of Black Canyon	Increase maintenance level. Probably no increase on native surface sections.
5840000	0.00	4.00	Lower South Fork	1	0	0	0	0	0	1	L	Ridge Top, South side of Black Canyon	
5840000	3.00	3.42	Middle Beaver	2	2	0	0	0	0	4	L	Ridge Top	
5840000	3.42	7.50	Middle Beaver	2	2	0	0	0	0	4	L	Ridge Top	
5840000	7.50	7.80	Middle Beaver	2	2	0	0	0	0	4	L	Ridge Top	
5840000	0.00	2.00	Middle Beaver	2	2	0	0	0	0	4	L	Ridge Top	
5840000	8.60	9.12	Rock Creek	2	0	0	2	0	0	4	L	Ridge top	
5840000	9.12	11.18	Rock Creek	2	0	0	2	0	0	4	L	Ridge top	
5850000	14.50	14.57	Lower South Fork	1	5	4	3	6	1	20	H	Crosses N. Fork Wind Creek, Squaw Creek, numerous intermittent tribs	
5850000	14.57	15.13	Lower South Fork	1	5	4	3	6	1	20	H	Crosses N. Fork Wind Creek, Squaw Creek, numerous intermittent tribs	
5850000	15.13	16.09	Lower South Fork	1	5	4	3	6	1	20	H	Crosses N. Fork Wind Creek, Squaw Creek, numerous intermittent tribs	Check pipes.
5850000	16.74	18.83	Middle Beaver	1	0	0	0	0	0	1	L		Check pipes.
5870000	11.66	11.80	Middle South Fork	1	3	4	2	1	3	14	M	Parallels Sunflower Creek and associated tribs	Check pipes.
5870000	3.80	4.60	Upper Beaver	2	2	0	2	0	0	6	L	Ridgetop	
5870000	0.00	1.38	Upper Beaver	2	2	0	2	0	0	6	L	Ridgetop	
5920000	0.39	0.75	Mud Springs Cree	2	2	0	0	0	2	6	L	Crosses Mud Springs Creek, gravel	
5920000	0.00	2.98	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
5920000	2.98	3.10	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
6000000	0.00	2.20	Crooked River Gra	0	0	0	0	0	0	0	L	Paved, four intermittent tribs	
6010000	14.08	16.49	Crooked River Gra	0	0	0	0	0	0	0	L	Paved	
6010000	9.81	10.68	Deschutes South	0	0	0	0	0	0	0	L	Road to Haystack Reservoir	
6080000	16.49	17.33	Crooked River Gra	0	0	0	0	0	0	0	L	Paved, one intermittent trib	
6080000	10.68	14.35	Deschutes South	0	0	0	0	0	0	0	L	Crosses intermittent tributary	
6100000	0.00	0.45	Crooked River Gra	0	0	0	0	0	0	0	L	Paved, one intermittent trib	
6100000	0.45	3.10	Crooked River Gra	0	0	0	0	0	0	0	L	Paved, one intermittent trib	
6110000	0.00	2.60	Crooked River Gra	0	0	0	0	0	0	0	L	Paved, one intermittent trib	
6110000	2.60	3.21	Crooked River Gra	0	0	0	0	0	0	0	L	Paved, one intermittent trib	
6120000	17.33	17.40	Crooked River Gra	0	0	0	0	0	0	0	L	Paved, one intermittent trib	
6120000	0.00	4.20	Crooked River Gra	0	0	0	0	0	0	0	L	Paved, one intermittent trib	
6200000	3.21	4.52	Crooked River Gra	1	0	0	0	0	0	1	L		

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
6200000	4.52	5.00	Crooked River Gra	1	0	0	0	0	0	1	L		
6200000	0.00	1.55	Crooked River Gra	1	0	0	0	0	0	1	L		
6200000	1.55	1.75	Crooked River Gra	1	0	0	0	0	0	1	L		
6200000	1.75	3.40	Crooked River Gra	1	0	0	0	0	0	1	L		
6200000	0.00	0.90	Crooked River Gra	1	0	0	0	0	0	1	L		
6200000	0.00	7.61	Crooked River Gra	1	0	0	0	0	0	1	L		
6200000	7.61	8.00	Crooked River Gra	1	0	0	0	0	0	1	L		
6200000	0.58	1.18	Lake Billy Chinook	1	0	0	0	0	0	1	L	Goes North towards island	
6200000	1.18	4.30	Lake Billy Chinook	1	0	0	0	0	0	1	L	Goes North towards island	
6200000	4.30	4.40	Lake Billy Chinook	1	0	0	0	0	0	1	L	Goes North towards island	
6200000	4.40	7.29	Lake Billy Chinook	1	0	0	0	0	0	1	L	Goes North towards island	
6200000	7.29	11.14	Lake Billy Chinook	1	0	0	0	0	0	1	L	Goes North towards island	
6200000	0.76	2.77	Steelhead	2	0	0	0	0	0	2	L	No tribs	
6200000	0.00	0.11	Steelhead	2	0	0	0	0	0	2	L	No tribs	
6200000	0.11	0.76	Steelhead	2	0	0	0	0	0	2	L	No tribs	
6300000	0.00	0.66	Crooked River Gra	7	0	0	0	7	0	14	2H	Crosses Lake Billy Chinook, landslide terrain fairly active, keep losing the road, T&E species, in Cove Palisades State Park	
6300000	11.10	21.00	Lake Billy Chinook	4	0	0	0	0	1	5	M	Crosses three intermittent tributaries, landslide terrain	
6300000	21.00	26.87	Lake Billy Chinook	4	0	0	0	0	1	5	M	Crosses three intermittent tributaries, landslide terrain	
6300000	4.56	4.57	Lower Metolius	1	0	0	0	0	0	1	L	Crosses two intermittent tributaries	
6300000	4.57	4.59	Lower Metolius	1	0	0	0	0	0	1	L	Crosses two intermittent tributaries	
6300000	5.93	13.77	Whychus	3	0	0	0	0	0	3	L		
6310000	0.00	4.00	Lake Billy Chinook	0	0	0	0	0	0	0	L	No tribs	
6310000	4.77	4.81	Lower Metolius	1	0	0	0	0	0	1	L	No stream crossings	
6310000	4.81	4.89	Lower Metolius	1	0	0	0	0	0	1	L	No stream crossings	
6320000	26.87	29.13	Lake Billy Chinook	0	0	0	0	0	0	0	L	Crosses one intermittent trib	
6320000	4.59	4.63	Lower Metolius	1	0	0	0	0	0	1	L	No stream crossings	
6330000	4.00	4.20	Lake Billy Chinook	0	0	0	0	0	0	0	L	No tribs	
6340000	29.13	36.70	Lake Billy Chinook	0	0	0	0	0	0	0	L	No tribs	
6350000	4.20	5.42	Lake Billy Chinook	0	0	0	0	0	0	0	L	Two tribs	
6355000	5.42	5.60	Lake Billy Chinook	1	2	2	3	0	3	11	L	Stevens Canyon area	
6355000	0.00	9.35	Lake Billy Chinook	1	2	2	3	0	3	11	L	Stevens Canyon area	
6370000	13.77	18.50	Whychus	3	0	0	0	0	0	3	L		
6400000	4.63	4.68	Lower Metolius	1	0	0	0	0	0	1	L	Crosses Juniper Creek, close to Juniper Reservoir, paved	
6500000	0.00	2.42	Lake Billy Chinook	0	1	0	0	0	0	1	L	West of Deschutes River Arm of Lake Billy Chinook, native surfaced, parallels one intermittent trib	
6500000	4.99	5.14	Lower Metolius	1	0	0	0	0	0	1	L	Crosses two intermittent tributaries	Proposed to be closed under Alder Springs EA. Check with Laurel.

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
6510000	0.00	6.00	Lake Billy Chinook	0	0	0	0	0	0	0	L	One intermittent trib	
6510000	4.68	4.77	Lower Metolius	1	2	0	0	0	0	3	L	Crosses two intermittent tributaries, goes into Big Canyon	
6520000	9.35	10.30	Lake Billy Chinook	0	0	0	0	0	0	0	L	No tribs	
6520000	4.89	4.99	Lower Metolius	1	0	0	0	0	0	1	L	No tribs	
6520000	4.99	4.99	Lower Metolius	1	0	0	0	0	0	1	L	No tribs	
6600000	0.00	1.60	Deschutes South	0	0	0	0	0	0	0	L	Southwest of Madras	
6600000	1.60	2.10	Deschutes South	0	0	0	0	0	0	0	L	Southwest of Madras	
6600000	0.00	4.00	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
6610000	2.10	3.00	Deschutes South	1	0	0	0	0	0	1	L	Southwest of Madras, road to round butte, loose pyroclastics	
6620000	0.00	4.45	Deschutes South	0	0	0	0	0	1	1	L	Southwest of Madras	
6630000	0.00	4.85	Deschutes South	0	0	0	0	0	0	0	L	West of Madras, crosses one intermittent tributary	
6630000	0.00	2.20	Willow Creek	0	1	0	1	0	0	2	L	Paved road down to mouth of Willow Creek	
6670000	0.00	6.51	Deschutes South	0	0	0	0	0	0	0	L	Three intermittent tribs, west of Madras, paved	
6670000	10.30	12.80	Lake Billy Chinook	0	0	0	0	0	0	0	L	No tribs	
6671000	6.00	6.00	Lake Billy Chinook	0	0	0	0	0	0	0	L	No tribs	
6700000	0.66	0.66	Crooked River Gr	1	0	0	0	0	0	1	L	Paved	
7210000	8.00	18.34	Crooked River Gr	1	0	0	0	0	0	1	L	High flat plateau, Osborn Canyon	
7210000	18.34	21.20	Crooked River Gr	1	0	0	0	0	0	1	L	High flat plateau, Osborn Canyon	
7260000	0.00	7.80	Crooked River Gr	1	0	0	0	0	0	1	L	High flat plateau, Osborn Canyon	
7290000	7.80	8.70	Crooked River Gr	1	0	0	0	0	0	1	L	High flat plateau, Osborn Canyon	
7290000	8.70	8.75	Crooked River Gr	1	0	0	0	0	0	1	L	High flat plateau, Osborn Canyon	
7290000	0.00	2.10	Crooked River Gr	1	0	0	0	0	0	1	L	High flat plateau, Osborn Canyon	
7850000	3.10	3.39	Willow Creek	0	0	0	0	0	0	0	L	Grizzly mountain road	
7960000	0.99	1.10	Lower Crooked R	1	0	0	0	0	0	1	L	Follows Lone Pine Creek for a bit	
8900000	14.35	23.24	Deschutes South	1	0	0	0	0	0	1	L	Gravel, south of Madras, crosses Dry Canyon #2, crosses four intermittent tribs	
8900000	23.24	25.70	Deschutes South	1	0	0	0	0	0	1	L	Gravel, south of Madras, crosses Dry Canyon #2, crosses four intermittent tribs	
8900000	3.39	3.64	Willow Creek	0	0	0	0	0	0	0	L	Isolated paved road	
8910000	6.51	7.51	Deschutes South	1	0	0	0	0	0	1	L	Crosses five intermittent tribs, North of Haystack Reservoir	
8910000	7.51	10.25	Deschutes South	1	0	0	0	0	0	1	L	Crosses five intermittent tribs, North of Haystack Reservoir	
8910000	0.00	0.22	Deschutes South	1	0	0	0	0	0	1	L	Crosses five intermittent tribs, North of Haystack Reservoir	
8910000	12.80	13.90	Lake Billy Chinook	0	0	0	0	0	0	0	L	Highway 97	
9600000	0.00	0.18	Deschutes South	1	0	0	0	0	1	2	L	Goes to Haystack Reservoir and south	
9600000	0.00	0.32	Lake Billy Chinook	0	0	0	0	0	0	0	L	Highway 97	
9600000	3.64	5.70	Willow Creek	0	0	0	0	0	0	0	L	Isolated gravel road	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
9605000	0.22	5.40	Deschutes South	1	0	0	0	0	0	1	L	Goes to campground on Haystack Reservoir, paved	
9605000	5.40	8.55	Deschutes South	1	0	0	0	0	0	1	L	Goes to campground on Haystack Reservoir, paved	
9610000	0.00	17.88	Deschutes South	1	0	0	0	0	0	1	L	Southeast of Haystack, no tribs	
9610000	0.00	1.72	Willow Creek	0	0	0	0	0	0	0	L	Isolated Dirt Road	
9620000	1.72	1.99	Willow Creek	0	0	0	0	0	0	0	L	Crosses intermittent streams	
9700000	0.00	3.85	Crooked River Gra	0	0	0	0	0	0	0	L	Paved	
9700000	3.85	5.70	Crooked River Gra	0	0	0	0	0	0	0	L	Paved highway	
9700000	0.18	1.70	Deschutes South	0	0	0	0	0	0	0	L	Paved, crosses dry canyon	
9700000	0.32	0.58	Lake Billy Chinook	0	0	0	0	0	0	0	L	Highway 97	
9700000	0.00	0.44	Mud Springs Cree	0	0	0	0	0	0	0	L	Crosses Mud Springs Creek	
9700000	0.49	6.00	Steelhead	0	0	0	0	0	0	0	L		
9700000	5.70	5.90	Willow Creek	0	0	0	0	0	0	0	L	Paved	
CRO-111	12.30	12.31	Bear Creek	2	2	0	1	5	2	12	M	Gravel road out of forest, mostly BLM and private, parallels along Bear Creek with multiple culvert confined stream crossings, crosses twelve intermittent streams, "Bear Creek Road"	
CRO-112	29.70	32.38	Grindstone	1	0	0	0	0	0	1	L	Paulina country	
CRO-112	23.44	25.09	Lower Beaver	1	0	0	0	0	0	1	L	Road to Izee, could be potential fish barrier	
CRO-112	1.38	2.65	Upper Beaver	2	0	0	0	0	0	2	L	Road to Izee	
CRO-113	32.38	35.78	Grindstone	1	0	0	0	0	0	1	L	Paulina country	
CRO-113	25.09	26.28	Lower Beaver	1	0	0	0	0	0	1	L	County road to Rager before it changes to 58, crosses two intermittent streams and Beaver Creek	
CRO-113	26.28	27.38	Lower Beaver	1	0	0	0	0	0	1	L	County road to Rager before it changes to 58, crosses two intermittent streams and Beaver Creek	
CRO-127	0.00	4.49	Camp Creek	2	0	4	2	2	0	10	M	Parallels Camp Creek, paved	
CRO-127	4.49	7.39	Camp Creek	2	0	4	2	2	0	10	M	Parallels Camp Creek, paved	
CRO-127	7.39	9.23	Camp Creek	2	0	4	2	2	0	10	M	Parallels Camp Creek, paved	
CRO-127A	5.24	11.40	Bear Creek	1	1	0	0	0	0	2	L	Boat Ramp	
CRO-127A	15.17	15.19	Camp Creek	2	0	2	2	2	0	8	L	Crosses several streams, connected to 127	
CRO-134	4.44	4.60	Bear Creek	1	0	3	2	0	0	6	L	Parallels salt creek, paved	
CRO-134	35.89	36.00	Mid Crooked Rive	2	0	0	0	0	0	2	L	Crosses two intermittent streams	
CRO-135	35.78	42.10	Grindstone	1	0	0	0	0	0	1	L	Paulina country	
CRO-135	18.83	19.01	Middle Beaver	2	1	2	0	0	0	5	L	Gravel, south of Beaver Creek	
CRO-135	19.01	20.90	Middle Beaver	2	1	2	0	0	0	5	L	Gravel, south of Beaver Creek	
CRO-135	20.90	21.80	Middle Beaver	2	1	2	0	0	0	5	L	Gravel, south of Beaver Creek	
CRO-135	0.00	0.38	Upper Beaver	2	2	2	0	0	0	6	L	Crosses south fork beaver	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
CRO-217	9.23	9.60	Camp Creek	2	2	2	2	2	0	10	L	Parallels Indian Creek #2, crosses Indain Creek #2, west fork Camp Creek	
CRO-226	4.60	5.24	Bear Creek	1	0	3	2	0	0	6	L	Paved, parallels Little Bear Creek, crosses numerous intermittent streams	
CRO-312	0.38	1.80	Upper Beaver	2	2	2	0	0	0	6	L	Crosses south fork beaver, gravel	
CRO-325	11.40	12.28	Bear Creek	2	2	2	2	2	2	12	L	Aggregate, coming out of Klootchman Creek	
GRA-42	16.09	17.88	Lower South Fork	2	4	5	1	7	0	19	H	Follows South Fork John Day, gravel	
GRA-42	17.88	19.21	Lower South Fork	2	4	5	1	7	0	19	H	Follows South Fork John Day, gravel	
GRA-42	19.21	19.22	Lower South Fork	2	4	5	1	7	0	19	H	Follows South Fork John Day, gravel	
													All segments. Monitor for water quality. Check pipes with understanding that we would work through Title II or III funding to modify.
GRA-42	15.50	19.00	Middle South Fork	2	4	5	4	1	0	16	M	South Fork John Day River Road	
GRA-42	0.44	0.60	Murderers Creek	2	4	5	4	1	0	16	M	South Fork John Day River Road	
GRA-42	0.00	1.50	Murderers Creek	2	4	5	4	1	0	16	M	South Fork John Day River Road	
GRA-67	0.00	11.90	Middle South Fork	2	0	4	2	0	0	8	M	Follows Pine Creek and Funny Creek, near Little Funny Butte	
GRA-67	0.00	1.64	Upper Beaver	2	0	0	0	0	0	2	L		
GRA-68	0.00	1.93	Middle South Fork	2	0	4	2	0	0	8	M	Izee	
GRA-68	1.80	5.93	Upper South Fork	2	0	0	0	0	0	2	L		
GRA-69	11.90	13.56	Middle South Fork	2	0	4	2	0	0	8	M	Parallels and crosses Warm Springs	
GRA-69	1.64	1.99	Upper Beaver	2	0	0	0	0	0	2	L		
GRA-69	0.00	1.80	Upper South Fork	2	0	0	0	0	0	2	L		
OR-126	42.10	49.53	Irrigation Canals	0	0	0	0	0	0	0	L		
OR-126	4.11	4.45	Lower Crooked R	0	0	0	0	0	0	0	L	Paved	
OR-126	4.45	4.53	Lower Dry River	0	0	0	0	0	0	0	L	Highways	
OR-126	0.76	1.56	Steelhead	0	0	0	0	0	0	0	L		
OR-27	12.32	14.70	Bear Creek	1	0	3	2	0	0	6	L	Parallels Bear Creek, crosses Bear Creek Twice, paved	
OR-27	2.20	4.11	Lower Crooked R	0	0	0	0	0	0	0	L	Follows Crooked River, south of Prineville, paved	
OR-27	19.23	19.33	Lwr Crooked Rive	0	0	0	0	0	0	0	L	Highways	
OR-27	36.20	37.47	Mid Crooked Rive	3	0	0	0	0	0	3	L	Crooked River Highway, paved	
OR-27	0.00	4.66	Mid Crooked Rive	3	0	0	0	0	0	3	L	Crooked River Highway, paved	
OR-27	1.99	3.77	Upper Dry River	0	0	0	0	0	0	0	L		
OR-380	9.60	10.00	Camp Creek	2	0	0	0	0	0	2	L	Paulina Highway, paved	
OR-380	0.00	0.66	Lower Beaver	1	0	4	0	0	0	5	M	Paulina Highway, levees that constrict floodplain on Beaver Creek	
OR-380	1.20	2.20	Lower Crooked R	0	0	0	0	0	0	0	L	Road to Paulina	
OR-380	18.71	19.52	Lower N. Fork Cro	1	0	0	0	0	0	1	L	State Highway	
OR-380	48.34	51.16	Lower Ochoco	2	0	0	0	0	0	2	L	Paulina Highway	
OR-380	51.16	62.83	Lower Ochoco	2	0	0	0	0	0	2	L	Paulina Highway	

ROAD	BMP	EMP	WATERSHED	GEO	FINE SED	FLOOD PLANE	FLOW	FISH	WET LAND	SUM	SUM RATING	COMMENTS	RECOMMENDED PROJECTS
OR-380	19.22	19.23	Lower South Fork	2	0	0	0	0	0	2	L	Paulina Highway	
OR-380	31.85	32.00	Mid Crooked Rive	3	0	0	0	0	0	3	L	Paulina Highway	
OR-380	32.00	34.59	Mid Crooked Rive	3	0	0	0	0	0	3	L	Paulina Highway	
OR-380	36.00	36.20	Mid Crooked Rive	3	0	0	0	0	0	3	L	Paulina Highway	
OR-380	1.80	4.00	Mid Crooked Rive	0	0	0	0	0	0	0	L	Paulina Highway	
US-20	0.00	6.60	Irrigation Canals	0	0	0	0	0	0	0	L		
US-20	4.53	4.56	Lower Dry River	0	0	0	0	0	0	0	L	Highways	
US-20	0.00	0.20	Pilot Butte	0	0	0	0	0	0	0	L	Highway	
US-20	1.56	1.92	Steelhead	0	0	0	0	0	0	0	L		
US-20	1.92	2.12	Three Creeks	0	0	0	0	0	0	0	L		
US-20	3.77	4.10	Upper Dry River	0	0	0	0	0	0	0	L		
US-20	0.00	18.93	Whychus	2	0	0	0	0	0	2	L		
	5.31	6.34	Mountain Creek							0	L		

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ROAD ANALYSIS

Code Definitions (Wildlife Assessment Table)

Field Heading

WATERSHED - 5th field watershed

ROAD - Road Number

Rating Factors

MIGRATION - Migration (changing direction, ease of flow)

SPECIAL HABITATS - Special Habitats (species use)


FRAGMENTATION - Fragmentation (contributing to)

TE&S - Threatened and Endangered Species (reducing ecological conditions)

SNAGS/DOWN LOGS - Snags and down logs (contributing to reduction of)

SUMMARY RATING - Summary Rating - (L) Low, (M) Moderate, (H) High (1H means one element rated high, 2H means two elements rated high, etc.)

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We welcome your comments on our service and your suggestions for improvement.

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Ochoco National Forest

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ROAD ANALYSIS

WILDLIFE RISK ASSESSMENT

Evaluation scale

- 0 Doesn't Apply No Effect
- 1- Low
- 3 Moderate
- 4- High
- 6
- 7-
- 9

Roads or road segments will be given a specific score. This score will be based on a set of evaluation criteria. Elements designed to answer issue driven questions regarding effects will be broken into physical aspects of the road and watershed level aspects. The evaluation criteria will be used to place roads in categories of low, moderate, and high. Once it is determined a road segment meets the evaluation criteria to fit into a category it will then be given a score based on its fit within that category. Each of the evaluation criteria will then be added up with a weighted average being applied to the watershed level measures, and a final score will be attributed to each road segment. If there is no effect or the criteria don't apply to a specific road it will receive a score of zero.

EXAMPLE: If the scoring for a criteria indicates that LOW = > 0% but < 5% of winter range impacted by the road segment and the road segment impacts 1.5% it would receive a score of 1 whereas if it scored 4.9% it would score a 3.

Road scoring efforts were designed to provide a relative ranking of

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road segments based on their impact to habitats or populations. Local Forest Plans and the most recent scientific information was used to establish ranking factors when available. When possible evaluation criteria limits necessary to fit into the high category were based on limits established in local Forest Plans and the most recent scientific information. While there is utility to direct management efforts, criteria established to evaluate road effects are not intended for use as thresholds. Local knowledge combined with road rankings and desired future conditions should be used to determine future direction for the management of the specified road or subsequent roads coming off it.

Roads should be evaluated not only on their over-all relative score but on individual effects based scores as well, ex.) A road that scores 10 based on impacts to a Threatened, Endangered, or Sensitive (TE&S) species nest or critical reproductive habitat but has an over-all relatively low score should still be addressed by management. Relative road ranking is only of use when complete data concerning wildlife habitats is available in all areas to be analyzed. Analysis should be done at the 6th field HUC and aggregated up to 5th fields. For large ranging species you may need to use multiple 5th field or even 4th field HUCs to adequately address concerns.

Terrestrial Wildlife (TW) Questions: Roads Analysis - Informing Decisions About Managing the National Forest Transportation System, USDA, FS-643, 1999.

- **TW1 - What are the direct effects of the road system on terrestrial species habitat?**
This question is answered in Wildlife A1, A2, A3, B1, and B2
- **TW2 - How does the road system facilitate human activities that affect habitat?**
This question is answered in Wildlife A1, A2, B1, and B2
- **TW3 - How does the road system affect legal and illegal human activities (including trapping, hunting, poaching, harassment, road kill, or illegal kill levels)? What are the effects on wildlife species?**
This question is answered in Wildlife A1, A2, and B2
- **TW4 - How does the road system directly affect unique communities or special features in the area?**
This question is answered in Wildlife A1, A2, A3, B1, and B2

Deschutes and Ochoco NF. Issue Associated Questions:

Wildlife A1 - Where does the road system intersect areas important to wildlife movement (dispersal, migration, etc.) thus precluding or altering wildlife movement and increasing the chance of mortality due to collision?

Answers Questions TW1, TW2, TW3, and TW4

Measures/Analysis Needed

Over-all Rating

High (7-10): Road segment is contributing to changing direction and ease of flow, concentration of flow, and/or increasing the potential for mortality for animals migrating or dispersing due to road interactions or increased exposure to predation. This road segment may also have high secondary effects by facilitating human use in the area.

Medium (4-6): Road segment is impacting migration or dispersal in similar ways as described above; however impacts may be due to more localized and specific to one causal agent. Additional impact to associated factors in surrounding habitats could move this segment into the high category. Consider limiting factors that would increase the score or implementing one or more of the above listed options.

Low (1-3): Road segment is having minimal impact on migration or dispersal. If other roads in the watershed are scoring in the high category this road segment may become more critical due to focused migration in this area. Maintain current management strategy considering this road in the context of the surrounding watershed parameters.

Possible Mitigations: increase surrounding dispersal vegetation, reduce primary and subsequent road factors (seasonal or permanent closures), remove physical barriers or provide unobstructed crossing point, close surrounding area to off road vehicle travel, and/or reduce traffic speeds.

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(A1-a) What is the objective maintenance level and average traffic volume of the road and does the road run perpendicular or parallel to the corridors? (Local knowledge was used to modify the roads layer to show the traffic volumes and objective maintenance level). Higher maintenance levels are indicative of higher traffic volumes, increased speeds, and larger areas required to cross. Higher traffic volumes and wider roads limit the ability of wildlife to cross the road and increase the potential they will be killed or injured in the process.

(A1-b) What is the percentage of the road influence area that is within the wildlife movement corridor? This is a relative measure of the percentage of the road buffer that contains wildlife movement corridor habitat. The greater the amount of habitat that is effected the greater the influence of the road and the higher the potential for exposure to poaching, road kill, or habitat loss.

(A1-c) How does this road contribute to the areas open road density? (total road density could be used for specific purposes)

A road segment may be located in a watershed with high road density, but that particular road may or may not have a significant contribution to the road density. This also gives managers a measure to determine potential benefits of closing particular roads.

(A1-d) Are there physical barriers associated with the roads?

Physical barriers limit the ability of some animals such as amphibians to cross roads. Barriers also increase the time or difficulty of crossing a road which can preclude animals from utilizing adjacent habitats or possibly resulting in them being killed.

(A1-e) How wide is the road? (cut slope to cut slope)

The width of a road also increases the degree of difficulty to cross the road. Slow moving animals are exposed to traffic flow for greater distances and depending on the species could be precluded from crossing. Prey species that typically utilize cover to move from area to area are exposed to predation when crossing openings such as roads. Wider roads tend to have higher traffic speeds which reduces the amount of time individuals have to escape without being hit.

(A1-f) Is there sufficient hiding cover adjacent to the road? To measure this it was assumed that areas with > 70% canopy cover typically would provide multiple canopy layers sufficient to provide hiding cover and would provide vertical screening.

Hiding cover adjacent to the road allows individuals the opportunity to approach the road in security before having to cross. When adjacent habitats provide hiding cover it also reduces the risk of individuals being susceptible to poaching.

(A1-g) How many miles of lower order roads come off this segment within the watershed?

This factor measures the amount of roads that the road being analyzed facilitates access to. The subsequent roads then add to the amount of disturbance associated with the movement corridor. This data can also assist with determining the number of road miles that could be closed if this road were closed.

(A1-h) Is the area this road is in open to off road use?

Off Highway Vehicle (OHV) use is facilitated in areas due to primary road access. OHV activities reduce habitat security and in the case of smaller less mobile species can kill individuals. The greater the amount of area adjacent to a road with a designation allowing OHV use the greater the potential for impacts to surrounding habitats.

Watershed Level Elements Adding to Road Effects

(A1-i) What is the surrounding road density?

This allows the road segment to be analyzed in the context of the surrounding watershed. A road located in an area with high road densities increases the magnitude of factors influencing the effectiveness of the area as migration habitat. An isolated road segment with negative factors affecting migration habitat effectiveness may not be critical in the watershed if all of the surrounding habitat is suitable, or it may be a critical piece in an already heavily influence watershed. If movement corridors are wide enough and adequate habitat exists the effects of individual barriers is reduced. This is somewhat dependant on the species and specific location of the road segment.

(A1-j) What is the amount of human activity centers (dwellings, campgrounds, etc.) in the area?

Human activity centers have increased vehicle traffic and a much greater potential for human wildlife interactions. These areas also have other influences like dogs and habitat removal. Human activity centers combined with other factors reducing migration habitat effectiveness can cause pinch points which increase the potential conflict with a road segment and in some cases multiple factors can reduce or eliminate the potential for wildlife to utilize the corridor.

Wildlife A2 - Where does the road system allow public access to areas used by wildlife during critical periods (reproduction, rearing, wintering, etc.) or are rare or unique (caves, wetlands, etc)?

Answers Question TW1, TW2, TW3, and TW4

Measures/Analysis Needed

Over-all Rating

High (7-10): Road segment is affecting one or more critical habitats within the watershed to a point where species use may be limited due to road influence at a level that may impact local populations.

Medium (4-6): Road segment has potential to be limiting use of critical habitat areas. Decreased availability of habitats will increase potential effects of other habitat factors.

Low (1-3): Road segment is currently having little impact to critical habitats. Maintain current management strategy considering this road in the context of the surrounding watershed parameters.

Possible Mitigations: improve vegetative conditions within the watershed or critical habitat areas, reduce primary and subsequent road factors (seasonal or permanent closures), and/or close unique habitat areas to off road vehicle use.

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(A2-a) How many acres of riparian habitats (RHCA buffers) does the road affect?

Roads reduce habitat security, remove habitat, and introduce habitat factors like noxious weeds, non-native species, dust, etc. These effects vary by species and type. For this analysis a mid point figure was used for road impacts (440 yards). When this area is intersected with the unique habitats in the watershed it allows for a measure of the amount of road buffer impacting these habitats. Roads with higher percentages of buffered area containing riparian habitats have greater potential to negatively impact these habitats and populations dependant on them.

(A2-b) What percent of the unique habitat is affected?
(See unique habitat definition)

Unique habitats are some of the most rare and sensitive habitats. By intersecting the road influence area with the unique habitat areas you can determine the percent of the unique habitats that are being influenced. Unique habitats are often associated with reproductive activities for a variety of species. This could lead managers to decide to seasonally or permanently close roads if high levels of impact are identified.

(A2-c) What is the percent of road buffers of roads subsequently come off of this road that effect unique habitats?

See A1-g

(A2-d) How does this road contribute to the areas road density?

See A1-c

(A2-e) Does the road completely intersect the area or only a portion of the road segment enters the habitat feature in a manner that does not intersect the area?

Roads that completely intersect habitats reduce habitat connectivity and reduce habitat effectiveness. This is particularly true for less mobile or species extremely sensitive to human disturbance.

(A2-f) Is the area this road is in open to off road use?
See A1-h

(A2-g) Does this road access a roadless area?

Roadless areas provide unique habitats. Roads that allow access to human activities to these areas can reduce the quality of these habitats.

Watershed Level Elements Adding to Road Effects

(A2-h) What is the surrounding road density?
See A1-I

Wildlife A3 - Where is road induced fragmentation and habitat loss causing negative edge effects?

Answers Questions TW1 and TW4

Measures/Analysis Needed

Over-all Rating

High (7-10): Road segment is contributing to fragmentation directly by impacting large amounts of core habitat and/or subsequently facilitating traffic to secondary roads and human associated activities within core habitats or roadless areas. Roads in this category exist in already highly fragmented habitats or provide primary access into an otherwise unfragmented area.

Medium (4-6): Road segment is contributing to the total fragmentation in the watershed. It may not be the dominant cause based on a Medium rating; however the watershed could still have excessive fragmentation. Road related fragmentation may be due to its location or the number of subsequent roads that come off of it.

Low (1-3): Road segment is contributing to the fragmentation of some habitats but not significantly. Maintain current management strategy considering this road in the context of the surrounding watershed parameters.

Possible Mitigations: close the road, reduce the number of subsequent roads coming off this road, and/or limit future vegetation management practices that would fragment habitats.

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(A3-a) What percent of existing interior habitat does the road effect?

Fragmentation related with roads reduces the amount and quality of habitat for interior dependant species. By measuring the amount of the road buffer that is influencing interior habitat you can determine the relative influence on interior habitat a specific road has.

(A3-b) How many miles of lower order roads come off this segment within the watershed?

See A1-g

Watershed Level Elements Adding to Road Effects

(A3-c) Are there other fragmentation factors in the area (ex. Power line corridors, train tracks, or pipelines)?

Fragmentation within a watershed is cumulative.

Roads that contribute to the fragmentation within a watershed that has numerous other fragmentation factors is worse than one in a relatively unfragmented watershed. Clear-cut edges have the potential to grow back and eventually reduce the amount of fragmentation. Fragmentation factors like train tracks and power line corridors are long term influences and not easily removed.

(A3-d) What is the existing fragmentation level within the watershed?

Roads that contribute to the fragmentation within a watershed that has numerous other fragmentation factors is worse than one in a relatively unfragmented watershed.

(A3-e) Does the watershed have desired levels of necessary vegetation / habitat?

This is a measure to determine if vegetation levels are within historic or desired levels. This would require some type of watershed wide analysis of existing and historic or desired levels. Roads that contribute to fragmentation of habitats when the watershed is below the historic or desired levels of interior habitat are worse than those that influence habitats in a watershed that has interior habitat levels above historic or desired levels.

(A3-f) What percentage of the watershed is currently occupied by road-beds (cut slope to cut slope)?

Road beds remove ground from tree production and reduces the total acres in the watershed with the capability to produce interior habitats. Forest Service regulations require that no more than 20% of watershed soils will be in a disturbed condition at any one time.

Wildlife B1 - Do the impacts of the road system contribute to a decline in the ecological conditions necessary to maintain species viability?

Answers Questions TW1, TW2, and TW4

Measures/Analysis Needed

Over-all Rating

High (7-10): Road segment is reducing the ecological condition of surrounding wildlife habitats to a point where it may be reducing use of these habitats or effecting sensitive habitats that are in limited quantities.

Medium (4-6): Road segment is reducing the ecological condition of surrounding wildlife habitats enough to reduce use seasonally or to the extent the habitat has the potential to be used.

Low (1-3): Road segment is having a minimal impact on the ability of wildlife to utilize the surrounding habitat. The quality of the surrounding habitat and lack of additional roads may be the mitigating factor keeping this road in the low category. Continue current management practices considering this road in the context of other watershed factors.

Possible Mitigations: close the road (permanently or seasonally), reduce the number of subsequent roads coming off this road, close surrounding areas to off road vehicle use, and/ or implement silvicultural practices that will return habitat quantities to desired levels within watershed.

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(B1-a) What level of affects is the road segment having on identified or active TE&S species reproductive areas? (See reproductive areas list in Appendix B).

Reproductive habitats are critical to the perpetuation of the species and local populations. Roads can reduce habitat security, remove habitat, and introduce habitat factors like noxious weeds, non-native species, dust, etc. that reduces the effectiveness of these habitats. These effects vary by species and type. For this analysis a mid point figure was used for road impacts (440 yards). When this area is intersected with the reproductive habitats in the watershed it allows for a measure of the amount of road buffer that is impacting identified reproductive core habitats. Roads with higher percentages of buffered area containing reproductive habitats have greater potential to negatively impact local reproductive activities.

(B1-b) Does the road influence habitats within the minimum buffer for nest stands or reproductive areas? Most wildlife species are extremely sensitive to human disturbance during the reproductive season. The level

of disturbance varies based on the type and distance of the disturbance. Traffic associated with roads and the associated human use has the potential to disrupt reproductive activities if they occur within species tolerance levels. Roads that enter identified minimum human activity restriction buffers or known reproductive areas have greater potential for disrupting reproduction than those that don't.

(B1-c) What percent of road buffer effects existing TE&S habitat (primary and secondary reproductive) within the watershed is affected?

This question is similar to question B1-a; however, it would measure the effects to potential habitats as apposed to active reproductive habitats. Potential habitats would be identified based on existing vegetation or special feature. Roads with extensive impact to potential reproductive habitats could be the limiting factor to these habitats being utilized.

(B1-d) What is the percent of road buffers of roads subsequently come off of this road that effect identified or active TE&S habitat (primary and secondary reproductive) within the watershed?

The measure and effects would be similar to question B1-a, but would address how this road facilitates access to additional roads that have impacts to identified or active TE&S reproductive habitats.

(B1-e) What is the percent of road buffers of roads subsequently coming off this road that effect identified active TE&S species reproductive areas? (See reproductive areas list in Appendix B).

The measure and effects would be similar to question B1-a, but would address how this road facilitates access to additional roads that have impacts to potential TE&S reproductive habitats.

(B1-f) How does this road contribute to the areas road density?

See A1-c

(B1-g) How many miles of lower order roads come off this segment within the watershed?

See A1-g Similar to B1-d and e this measures subsequent roads but is specific to road density.

(B1-h) Is the area this road is in open to off road use?

See A1-h

(B1-i) Are there noxious weed populations along the road that could spread and reduce adjacent habitats?

Noxious weed infestations can drastically reduce forage and cover for wildlife species. Noxious weed species are typically less palatable and often contain toxins that are harmful to wildlife. Roads and the associated vehicle traffic allow increased rates of spread into wildlife habitats. Large areas of critical habitat such as winter range can be converted to noxious weed dominated areas in relatively short periods of time. These conversions can reduce wildlife carrying capacities over large areas.

Watershed Level Elements Adding to Road Effects

(B1-j) What is the road density in the watershed?
See A1-i

Wildlife B2 - Where is the road system contributing to the reduction of habitat for species dependent upon snags and down logs (where snags and down logs are limited)?

Answers Questions TW1, TW2, TW3, and TW4

Measures/Analysis Needed

Over-all Rating

High (7-10): Road segment is contributing to potential reduction of snag and down log densities and is located in a watershed where past activities have resulted in currently lower densities. Road segments that are on relatively mild slopes in areas where off road travel is permitted present the greatest risk for snag and down log reductions extended distances from the road. This road may also provide access to numerous subsequent roads that increase the potential for reducing snag numbers. Possible mitigation options include: closing the area to wood cutting, closing the area to off road vehicle use, closing secondary roads in the area, and/or creating snags and/or down logs in deficient areas of the watershed.

Medium (4-6): Road segment is located in with surrounding conditions such that it has the potential to facilitate impacts to snag and down log levels sufficient to move levels below desired levels. This road segment may also be located in a watershed that is currently below desired levels. Management should focus on limiting secondary effects of the road (see possible mitigation measures).

Low (1-3): Road segment has limited potential to have a large impact on snag and down log levels with the watershed.

Possible Mitigations: close the road, reduce the number of subsequent roads coming off this road, and/or limit future vegetation management practices that would fragment habitats.

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(B2-a) What distance is the road segment from town? Legal and illegal wood cutting activities that reduce snag and down log levels are typically greater closer to population centers. The more remote and inaccessible the road is the less traffic it typically receives, and thus has lower potential for impacts to snag and down log levels.

(B2-b) How does this road contribute to the areas road density?

See A1-c

(B2-c) How many miles of lower order roads come off this segment within the watershed?

See A1-g

(B2-d) Is the area this road is in open to off road use?

See A1-h

(B2-e) Is the area this road is in open to woodcutting? Areas open to wood cutting have higher impacts to snag and down log levels.

Watershed Level Elements Adding to Road Effects

(B2-f) How much timber harvest has occurred in the watershed?

Timber harvest removes existing and potential snags and down logs. Past timber harvest practices typically left minimal snag and down log levels remaining after treatment. Because snag and down log levels have already been reduced these areas have a greater potential to have snag and down log levels reduced below desired levels by wood cutting activities. The percentage of the watershed that has been harvested indicates the level of risk of reducing the watershed below desired levels.

(B2-g) What is the snag density in the watershed and how does that relate to historic or desired levels?

A road that allows access to wood cutting within a watershed that is already deficient in snag and down log levels has the potential for greater impacts than a road in a watershed with snag and down log levels greater than historic or desired.

(B2-h) What is the road density in the watershed?

Roads provide access for wood cutters. Total road density in the watershed can imply the relative potential for wood cutting to impact snag and down log levels.

APPENDIX A - ANALYSIS PROCESS AND GRADING SCHEME

Wildlife A1 - Where does the road system intersect areas important to wildlife movement (dispersal, migration, etc.) thus precluding or altering wildlife movement and increasing the chance of mortality due to collision?

Answers Questions TW1, TW2, TW3, and TW4

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(A1-a) What is the objective maintenance level and average traffic volume of the road and does the road run perpendicular or parallel to the corridors? (Local knowledge was used to modify the roads layer to show the traffic volumes and objective maintenance level). Use the roads data for objective maintenance level and designation as arterial or collector to determine probable types of traffic and volumes. Objective maintenance level indicates that a review was completed based on local knowledge of traffic volumes and maintenance levels adjusted accordingly. Measure length of the road within wildlife movement corridor and the relation to corridor width and length and determine primary direction of road impact (ie. Parallel or perpendicular).

High: 9 = Maintenance level 4 with locally known high volume or maintenance level 5 and runs perpendicular, parallel, or intersects 67% - 100% of wildlife movement corridor.

8 = Maintenance level 4 with locally known high volume or maintenance level 5 and runs perpendicular, parallel, or intersects 34% - 66% of wildlife movement corridor.

7 = Maintenance level 4 with locally known high volume or maintenance level 5 and runs perpendicular, parallel, or intersects .1% - 33% of wildlife movement corridor.

Medium: 6 = Maintenance level 3 or maintenance level 4 with locally known low volume and runs perpendicular, parallel, or intersects 67% - 100% of wildlife movement corridor.

5 = Maintenance level 3 or maintenance level 4 with locally known low volume and runs perpendicular, parallel, or intersects 34% - 66% of wildlife movement corridor.

4 = Maintenance level 3 or maintenance level 4 with locally known low volume and runs perpendicular, parallel, or intersects .1% - 33% of wildlife movement corridor.

Low: 3 = Maintenance level 2 or below unless local knowledge warrants medium and runs perpendicular, parallel, or intersects 67% - 100% of wildlife movement corridor.

2 = Maintenance level 2 or below unless local knowledge warrants medium and runs perpendicular,

parallel, or intersects 34% - 66% of wildlife movement corridor.

1 = Maintenance level 2 or below unless local knowledge warrants medium and runs perpendicular, parallel, or intersects .1% - 33% of wildlife movement corridor.

(A1-b) What is the percentage of the road influence area that is within the wildlife movement corridor?

Buffer the road by 440 yards on both sides from the mid point and intersect with the corridor.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(A1-c) How does this road contribute to the areas open road density? (total road density could be used for specific purposes)

Run the roving windows road density analysis using the following categories (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²), this will create a polygon cover that will be intersected with the road segments to determine which segment the road is predominantly within. If the segment intersects two bands they will be given a weighted average. (Categories were established based on Wisdom's model to evaluate elk habitat).

High: 9 = > 6.0, 8 = 4.76 - 6.0, 7 = 3.5 - 4.75

Medium: 6 = 2.665 - 3.5, 5 = 1.833 - 2.665, 4 = .999 - 1.833

Low: 3 = .666 - .999, 2 = .333 - .666, 1 = 0 - .333

(A1-d) Are there physical barriers associated with the roads?

Buffer the road by 100 feet and intersect with the following features to determine if they are adding to the difficulty of crossing the road: cement median dividers, guard rails, fences, slopes greater than 60 degrees, stream class 1, power line corridors, and train tracks. This new coverage should then be buffered by 100 feet and intersected with the road segment buffered by 440 yards. Evaluation is based on the percentage of buffers within the road influence polygon. Some of the features may be contained in TMS, Range Allotment fence layers but others may require local knowledge.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(A1-e) How wide is the road? (cut slope to cut slope)

Using data in TMS determine the width of the road and any maintained shoulder width.

High: 9 =, 8 =, 7 =

Medium: 6 =, 5 =, 4 = (use the data from maintenance level data)

Low: 3 =, 2 =, 1 =

(A1-f) Is there sufficient hiding cover adjacent to the road? To measure this it was assumed that areas with > 70% canopy cover typically would provide multiple canopy layers sufficient to provide hiding cover and would provide vertical screening.

Utilizing PMR satellite data develop a layer showing where all habitats with > 70% canopy cover would provide adequate hiding cover adjacent to the road to reduce effects. Buffer the road by 440 yards and intersect with > 70% canopy cover layer to determine the

percent of the road buffer that is occupied by > 70% canopy cover. All figures are based on the % of the buffer containing > 70% cover.
 High: 9 = .1% - 3.3%, 8 = 3.4% - 6.6%, 7 = 6.7% - 10%
 Medium: 6 = 10.1% - 15%, 5 = 15.1% - 20%, 4 = 20.1% - 25%
 Low: 3 = 25.1% - 30%, 2 = 30.1% - 35%, 1 = > 35%

(A1-g) How many miles of lower order roads come off this segment within the watershed?

Calculate the number of road miles of lower order roads coming off of the specified road within the watershed. This measures how the specified segment facilitates other access routes in the watershed.

*This is only practical at the watershed scale where road segments can be identified that connect with other segments.

High: 9 = > 7.5, 8 = 6.3 - 7.4, 7 = 5.1 - 6.2

Medium: 6 = 4.1 - 5.0, 5 = 3.1 - 4.0, 4 = 2.1 - 3.0

Low: 3 = 1.333 - 2, 2 = .667 - 1.334, 1 = .1 - .667

(A1-h) Is the area this road is in open to off road use?

Create a layer that shows where off road use is allowed based on Forest Plan Direction and determine percent of road buffer (440 yards) containing areas open to off road use.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

Watershed Level Elements Adding to Road Effects

(A1-i) What is the surrounding road density?

Run the roving windows road density analysis using the following categories (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²), this will then be used to calculate percentages of the watershed in each category of road density. Using a weighted average based on the percent of the watershed in a given road density category calculate the weighted average for the watershed. This analysis should be done at the 6th field HUC level and aggregated up to the 5th field depending on the size of the watershed and the length of the roads.

High: 9 = > 6.0, 8 = 4.76 - 6.0, 7 = 3.5 - 4.75

Medium: 6 = 2.665 - 3.5, 5 = 1.833 - 2.665, 4 = .999 - 1.833

Low: 3 = .666 - .999, 2 = .333 - .666, 1 = 0 - .333

(A1-j) What is the amount of human activity centers (dwellings, campgrounds, etc.) in the area?

Buffer human activity centers within the Forest Boundary and ½ mile beyond by 1 mile and intersect with Wildlife Movement Corridors.

Buffer cities and subdivisions by 5 miles.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

Data Layers to Use and Union Analysis Description:

Generate a Dbase file for each of the above with breaks by watershed.

Migration Routes - Generate using Existing identified and buffering ridges and saddles by 440 yd. And

RHCA buffers (not all just class 1 -3). *Metolius Winter Range encompasses a know sheet migration route but will not be used in this analysis. Intersect/union with 440 yd road buffer. Output is percent of the road buffer containing migration routes.

Road Maintenance Level - (Exists in road cover) Add to road data.

Connectivity Habitats - Data not complete needs to be done on a Watershed analysis basis. If data existed analysis would be done the same as Migration Routes.

Physical Barriers - Buffer the road by 100 feet and intersect with the following features converted to a 'barrier' coverage, to determine if they are adding to the difficulty of crossing the road: cement median dividers - don't have, guard rails - don't have, fences - incomplete and low accuracy, slopes greater than 60 degrees - have, stream class 1 - have, power line corridors - have at province level, and train tracks - have at province level. This new coverage should then be buffered by 100 feet and intersected with the road segment buffered by 440 yards. Answer to be in percent of the 440 yd. road buffer containing physical barrier buffer.

Road Density Run - Focal sum analysis needs redone on both Forests. As follows: (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²). Used twice: 1. Which break is the road predominately ie the weighted average based on length of the categories the road is in. Output is a road density adjacent to that road. 2. Use Watershed road density based on BLM GTRN cover (not focal sum). Answer is road density by watershed (6th field)

Canopy Closure >= 70% - Use PMR from both Forests, may be different. Intersect with 440 yd road buffer to determine percent of the 440 yd buffer containing >= 70 % crown cover. (See Bruce Wright for Ochoco process)

Road buffer - Buffer road segments by 440 yd. from mid point. To be used with the rest of the analysis.

Watershed Boundaries - Use to summarize data.

Camp Grounds, Trailheads, Private Dwellings, OHV use - Buffer Forest boundaries ½ mile and intersect with campground cover (just have data within the Forest). Buffer features with the intersect by 1 mile. Intersect that layer with Migration Routes, Connectivity Habitats, Key Linkage Areas,

Cities and sub divisions - buffer 5 mi. (Don't have boundaries for sub-divisions). Answer is the percent of the watershed occupied with these buffers.

Area open to off road use - Therefore all areas not restricted to motorized vehicles maybe just General Forest is open. Ochoco the following are closed: slopes greater then 30%, riparian areas, old growth allocations, any area closures. Create poly cover of areas open to OHV use (ie not closed) and intersect with 440 yd road buffer to determine percent of buffer occupied with open areas.

Where does the road system intersect areas important to wildlife movement (dispersal, migration, etc.) thus increasing mortality due to collision or precluding wildlife movement?	Score	Weighting
(A1-a) What is the maintenance level and average traffic volume of the road and does the road run perpendicular or parallel to the corridors?		1
(A1-b) What is the percentage of the road influence area that is within the corridor?		1
(A1-c) How does this road contribute to the areas road density?		1
(A1-d) Are there physical barriers associated with the roads?		1
(A1-e) How wide is the road?		1
(A1-f) Is there sufficient cover adjacent to the road?		1
(A1-g) How many miles of lower order roads come off this segment within the watershed?		1
(A1-h) Is the area this road is in open to off road use?		1
(A1-i) What is the surrounding road density?		1.5
(A1-j) What is the amount of human activity centers (dwellings, campgrounds, etc.) in the area?		1.5
	TOTAL SCORE	
	WEIGHTED AVERAGE	

Wildlife A2 - Where does the road system allow public access to areas used by wildlife during critical periods (reproduction, rearing, wintering, etc.) or are rare or unique (caves, wetlands, etc)?

Answers Question TW1, TW2, TW3, and TW4

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(A2-a) How many acres of riparian habitats (RHCA buffers) does the road affect?

Buffer the road by 440 yards on both sides from the mid point and intersect with the riparian layers. Determine the percentage of riparian habitats affected by the road buffer.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(A2-b) What percent of the unique habitat is affected? (See unique habitat definition) Unique habitats must be identified throughout the analysis area to provide a relative rating.

Buffer the road by 440 yards on both sides from the mid point and intersect with the unique habitats layers. Determine the percentage of unique habitats affected by the road buffer.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(A2-c) What is the percent of road buffers of roads subsequently come off of this road that effect unique habitats? *This is only practical at the watershed scale where road segments can be identified that connect with other segments.

Buffer the subsequent roads within the watershed by 440 yards on both sides from the mid point and intersect with the unique habitats layers. Determine the percentage of unique habitats affected by the road buffer. Include riparian in this analysis.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(A2-d) How does this road contribute to the areas road density?

Run the roving windows road density analysis using the following categories (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²), this will create a polygon cover that will be intersected with the road segments to determine which segment the road is predominantly within. If the segment intersects two bands they will be averaged.

High: 9 = > 6.0, 8 = 4.76 - 6.0, 7 = 3.5 - 4.75

Medium: 6 = 2.665 - 3.5, 5 = 1.833 - 2.665, 4 = .999 - 1.833

Low: 3 = .666 - .999, 2 = .333 - .666, 1 = 0 - .333

(A2-e) Does the road completely intersect the area or only a portion of the road segment enters the habitat feature in a manner that does not intersect the area?

Measure length of the road within unique habitats and the relation to unique habitat width and length and determine primary direction of road impact (ie. Parallel or perpendicular). (how to measure).

High 9 = Runs perpendicular, parallel, or intersects > 88.1% of wildlife movement corridor.

8 = Runs perpendicular, parallel, or intersects 77.1% - 88% of wildlife movement corridor.

7 = Runs perpendicular, parallel, or intersects 66.1% - 77% of wildlife movement corridor.

Medium: 6 = Runs perpendicular, parallel, or intersects 55.1% - 66% of wildlife movement corridor.

5 = Runs perpendicular, parallel, or intersects 44.1% - 55% of wildlife movement corridor.

4 = Runs perpendicular, parallel, or intersects 33.1% - 44% of wildlife movement corridor.

Low: 3 = Runs perpendicular, parallel, or intersects 22.1% - 33% of wildlife movement corridor.

2 = Runs perpendicular, parallel, or intersects 11.1% - 22% of wildlife movement corridor.

1 = Runs perpendicular, parallel, or intersects .1% - 11% of wildlife movement corridor.

(A2-f) Is the area this road is in open to off road use?

Create a layer that shows where off road use is allowed based on Forest Plan Direction and determine percent of road buffer (440 yards) containing areas open to off road use.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(A2-g) Does this road access a roadless area?

Buffer identified roadless areas including wilderness areas by 1 mile and intersect with buffered road (440 yards) to determine the percentage roadless buffer within the road buffer. This will give an indication of how the road allows access to the roadless area.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

Watershed Level Elements Adding to Road Effects

(A2-h) What is the surrounding road density?

Run the roving windows road density analysis using the following categories (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²), this will then be used to calculate percentages of the watershed in each category of road density. Using a weighted average based on the percent of the watershed in a given road density category calculate the weighted average for the watershed. This analysis should be done at the 6th field HUC level and aggregated up to the 5th field depending on the size of the watershed and the length of the roads.

High: 9 = > 6.0, 8 = 4.76 - 6.0, 7 = 3.5 - 4.75

Medium: 6 = 2.665 - 3.5, 5 = 1.833 - 2.665, 4 = .999 - 1.833

Low: 3 = .666 - .999, 2 = .333 - .666, 1 = 0 - .333

Data Layers to Use and Union Analysis Description:

Generate a Dbase file for each of the above with breaks by watershed.

Riparian areas- RHCA buffers (streams, springs, wet meadows) - Use RHCA buffers intersect w/ 440 yd road buffer. Answer = percent of road buffer occupied by RHCA buffers

BEMA/BECA - Cover not complete so. Buffer Bald Eagle nests by ½ mile and intersect w/ 440 yd road buffer. Answer = percent of road buffer occupied by nest buffer.

Calving, fawning, kidding areas - Cover not complete analysis would have been the same as above.

Wilderness Areas/Roadless Areas - Answer = percent of road buffer occupied by Wilderness

Winter Ranges - Use Forest's covers. Answer = percent of road buffer occupied with Winter Range.

ODF&W winter range exists and could be used at a Watershed scale.

Connectivity Habitats - Cover not complete

Wilderness/Roadless Areas - Buffer all Wilderness/Roadless Areas by one mile. Answer = percent of road buffer occupied by Wilderness/Roadless buffer.

Caves - Cover not complete. If available buffer caves $\frac{1}{4}$ mile and intersect that cover with road buffer. Answer = percent of road buffer occupied by Cave buffer.

Migration Routes - Generate using Existing identified and buffering ridges and saddles by 440 yd. And RHCA buffers (not all just class 1 -3). *Metolius Winter Range encompasses a know sheet migration route but will not be used in this analysis. Intersect/union with 440 yd road buffer. Output is percent of the road buffer containing migration routes

Watershed Boundaries - Use to summarize data

Leks - Buffer LEK points by 2 miles, intersect that buffer with road buffer. Answer = percent of road buffer occupied by LEK buffer

Raptor Nests - Cover not complete. If available buffer nest points $\frac{1}{4}$ mile and intersect that buffer with road buffer. Answer = percent of road buffer occupied by Raptor Nest buffer

Area open to off road use - Therefore all areas not restricted to motorized vehicles maybe just General Forest is open. Ochoco the following are closed: slopes greater then 30%, riparian areas, old growth allocations, any area closures. Create poly cover of areas open to OHV use (ie not closed) and intersect with 440 yd road buffer to determine percent of buffer occupied with open areas.

Special Habitats - Cover not complete. Could be done at watershed scale. All covers would be buffered by $\frac{1}{4}$ mile and intersected with the road buffer. Answer = percent of road buffer occupied by Special Habitat buffer.

TE&S species habitat - Cover not complete. Could be done at watershed scale. Intersect habitats of species of interest with road buffer. Answer = percent of road buffer occupied by Habitat buffer.

Road buffer - Buffer road segments by 440 yd. from mid point. To be used with the rest of the analysis.

Road Density Run - Focal sum analysis needs redone on both Forests. As follows: (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²). Used twice: 1. Which break is the road predominately ie the weighted average based on length of the categories the road is in. Output is a road density adjacent to that road. 2. Use Watershed road density based on BLM GTRN cover (not focal sum). Answer is road density by watershed (6th field)

F. Plan Wildlife Allocations - Use lists of allocations for both Forests provided by Monte. Intersect those allocations with road buffer. Answer = percent of road buffer occupied by Wildlife Allocations

Where does the road system allow public access to areas used by wildlife during critical periods (reproduction, rearing, wintering, etc.) or are rare or unique (caves, wetlands, etc)?	Score	Weighting
(A2-a) How many acres of riparian habitats does the road affect?		1
(A2-b) What percent of the unique habitat is affected?		1
(A2-c) How many miles of road subsequently come off of this road that effect unique habitats?		1
(A2-d) How does this road contribute to the areas road density?		1
(A2-e) How many miles of lower order roads come off this segment within the watershed?		1
(A2-f) Does the road completely intersect the area or only slightly enter?		1
(A2-g) Is the area this road is in open to off road use?		1
(A2-h) Does it access a roadless area?		1
(A2-i) What is the surrounding road density?		1.5
	TOTAL SCORE	
	WEIGHTED AVERAGE	

Wildlife A3 - Where is road induced fragmentation and habitat loss causing negative edge effects?

Answers Questions TW1 and TW4

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(A3-a) What percent of existing interior habitat does the road effect? Buffer the road by 300 feet (based on average of two tree lengths from road) and intersect with the vegetation layer where there is > 40% canopy closure. Determine the percentage of road buffer that contains > 40% canopy closure.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(A3-b) How many miles of lower order roads come off this segment within the watershed?

Calculate the number of road miles of lower order roads coming off of the specified road within the watershed. This measures how the specified segment facilitates other access routes in the watershed.

High: 9 = > 7.5, 8 = 6.3 - 7.4, 7 = 5.1 - 6.2
 Medium: 6 = 4.1 - 5.0, 5 = 3.1 - 4.0, 4 = 2.1 - 3.0
 Low: 3 = 1.333 - 2, 2 = .667 - 1.334, 1 = .1 - .667

Watershed Level Elements Adding to Road Effects

(A3-c) Are there other fragmentation factors in the area (ex. Power line corridors, train tracks, or pipelines)?

Buffer the power line or train tracks by 300 feet and intersect with the vegetation layer where there is > 40% canopy closure.

Determine the percentage of power line or train track buffer that contains > 40% canopy closure.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(A3-d) What is the existing fragmentation level within the watershed?

Run the Fragstats model on the at the watershed level including an analysis of the following: Number of patches, mean patch area, mean interior area, mean are of edge influence, mean patch perimeter, total perimeter, mean patch shape. This would require being able to determine a desired condition based on the models outputs.

High: 9 = , 8 = , 7 = We would have to run the model on a few watershed

Medium: 6 = , 5 = , 4 = and determine a grading scale that would work.

Low: 3 = , 2 = , 1 =

(A3-e) Does the watershed have desired levels of necessary vegetation / habitat? *This is only practical if the data exists.

This would require some form of comparison of existing vegetative condition (grass, forb, shrub - E1 or large structure late seral - L5) review for the watershed comparing it to a desired or historical level. Compare existing habitat levels with desired or historic (use mid point for analysis) and add up the percentages to come up with one percentage (ie. E1 is +5% and L5 is -3% score = 2%).

High: 9 = > 17.8%, 8 = 15.6% - 17.7%, 7 = 13.4% - 15.5%

Medium: 6 = 11.2% - 13.3%, 5 = 8.9% - 11.1%, 4 = 6.7% - 8.8%

Low: 3 = 4.5% - 6.6%, 2 = 2.3% - 4.4%, 1 = < 2.2%

(A3-f) What percentage of the watershed is currently occupied by road-beds (cut slope to cut slope)?

Calculate the area occupied by all non-obiterated road beds and use the area of the watershed to calculate the percent of the watershed occupied by road beds.

High: 9 = > 20%, 8 = 13.1% - 20%, 7 = 6.1% - 13%

Medium: 6 = 5.1% - 6%, 5 = 4.1% - 5%, 4 = 3.1% - 4%

Low: 3 = 2.1% - 3%, 2 = 1.1% - 2%, 1 = .1% - 1%

Data Layers to Use and Union Analysis Description:

Generate a Dbase file for each of the above with breaks by watershed.

Watershed level quantities of identified habitats - Data not complete needs to be done on a Watershed analysis basis. Polygon maps would be generated by the biologists or computer using existing vegetation layers. Analysis could be run on reproductive

habitat or foraging depending on the species. Polygons would be intersected with the 440 yard road buffer coverage. Answer is percent of the 440 yard road buffer containing habitats.

Utilities - buffer the existing train tracks, power lines, and pipe lines by 300 feet and intersect with the PMR canopy layer where it shows canopy greater than 40% canopy closure. Answer = determine the percentage of the utility corridor that contains 40% canopy closure.

Fragmentation Run - Fragstats - Run the fragmentation model that Curtis Day has for the Ochoco, this will be used in two ways. It will identify the interior habitat which will then be intersected with the 440 yard road buffers to determine the percentage of the road buffer containing interior habitat. The second way will be to determine the fragmentation score for the watershed. This will be based on how the model is set up, and will be relative to other watersheds.

Road buffer - Buffer road segments by 440 yd. from mid point. To be used with the rest of the analysis.

Vegetation HRV in the watershed - Data not complete needs to be done on a Watershed analysis basis. Identify existing quantities of vegetation and compare to HRV or desired levels. Answer = the percentage the watershed's vegetation deviates from HRV or desired. This would have to be a sum total of deviation of each vegetation type looked at.

Road Maintenance Levels - Using and average width for the road bed times the length of the road convert the actual road bed into an acreage figure and compare to the acres in the watershed. Answer= Percent of the watershed that is occupied by road beds.

Where is road induced fragmentation and habitat loss causing negative edge effects?	Score	Weighting
(A3-a) What percent of existing habitat does the road effect?		1
(A3-b) What is the maintenance level and average traffic volume of the road and does the road run perpendicular or parallel to the corridors?		1
(A3-c) How many miles of lower order roads come off this segment within the watershed?		1
(A3-d) Are there other fragmentation factors in the area (ex. Power line corridors or train tracks)?		1.1
(A3-e) What is the existing fragmentation level within the watershed?		1.5
(A3-f) Does the watershed have desired levels of necessary vegetation / habitat?		1.5
(A3-g) What percentage of the watershed is currently occupied by road beds?		1.1
	TOTAL SCORE	
	WEIGHTED AVERAGE	

Wildlife B1 - Do the impacts of the road system contribute to a

decline in the ecological conditions necessary to maintain species viability?

Answers Questions TW1, TW2, and TW4

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(B1-a) What level of affects is the road segment having on identified or active TE&S species reproductive areas? (See reproductive areas list in Appendix B).

Buffer the road by 440 yards on both sides from the mid point and intersect with the TE&S reproductive habitat layers. Determine the percentage of TE&S reproductive habitat affected by the road buffer.
High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(B1-b) Does the road influence habitats within the minimum buffer for nest stands or reproductive areas?

Buffer known reproductive areas by ¼ mile and intersect with road buffer (440 yards). Determine the percentage of the buffer around the reproductive area that is within the road buffer.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(B1-c) What percent of road buffer effects existing TE&S habitat (primary and secondary reproductive) within the watershed is affected? *This would have to be done at a watershed scale where data exists.

Buffer the road by 440 yards on both sides from the mid point and intersect with the TE&S non-reproductive habitat layers. Determine the percentage of TE&S non-reproductive habitat affected by the road buffer.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(B1-d) What is the percent of road buffers of roads subsequently come off of this road that effect identified or active TE&S habitat (primary and secondary reproductive) within the watershed? *This would have to be done at a watershed scale where data exists.

Buffer the subsequent roads within the watershed by 440 yards on both sides from the mid point and intersect with the unique habitats layers. Determine the percentage of unique habitats within the road buffer. Include riparian in this analysis.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(B1-e) What is the percent of road buffers of roads subsequently coming off this road that effect identified active TE&S species reproductive areas? (See reproductive areas list in Appendix B).

*This would have to be done at a watershed scale where data exists. Buffer the subsequent roads within the watershed by 440 yards on

both sides from the mid point and intersect with the unique habitats layers. Determine the percentage of unique habitats within the road buffer. Include riparian in this analysis.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(B1-f) How does this road contribute to the areas road density?

Run the roving windows road density analysis using the following categories (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²), this will create a polygon cover that will be intersected with the road segments to determine which segment the road is predominantly within. If the segment intersects two bands they will be averaged.

High: 9 = > 6.0, 8 = 4.76 - 6.0, 7 = 3.5 - 4.75

Medium: 6 = 2.665 - 3.5, 5 = 1.833 - 2.665, 4 = .999 - 1.833

Low: 3 = .666 - .999, 2 = 333 - .666, 1 = 0 - .333

(B1-g) How many miles of lower order roads come off this segment within the watershed?

Calculate the number of road miles of lower order roads coming off of the specified road within the watershed. This measures how the specified segment facilitates other access routes in the watershed.

High: 9 = > 7.5, 8 = 6.3 - 7.4, 7 = 5.1 - 6.2

Medium: 6 = 4.1 - 5.0, 5 = 3.1- 4.0, 4 = 2.1 - 3.0

Low: 3 = 1.333 - 2, 2 = .667 - 1.334, 1 = .1 - .667

(B1-h) Is the area this road is in open to off road use?

Create a layer that shows where off road use is allowed based on Forest Plan Direction and determine percent of road buffer (440 yards) containing areas open to off road use.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(B1-i) Are there noxious weed populations along the road that could spread and reduce adjacent habitats?

Utilize the evaluation rating given for noxious weeds in the vegetative analysis.

Watershed Level Elements Adding to Road Effects

(B1-j) What is the road density in the watershed?

Run the roving windows road density analysis using the following categories (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²), this will then be used to calculate percentages of the watershed in each category of road density. Using a weighted average based on the percent of the watershed in a given road density category calculate the weighted average for the watershed. This analysis should be done at the 6th field HUC level and aggregated up to the 5th field depending on the size of the watershed and the length of the roads.

High: 9 = > 6.0, 8 = 4.76 - 6.0, 7 = 3.5 - 4.75

Medium: 6 = 2.665 - 3.5, 5 = 1.833 - 2.665, 4 = .999 - 1.833

Low: 3 = .666 - .999, 2 = 333 - .666, 1 = 0 - .333

Data Layers to Use and Union Analysis Description:

Generate a Dbase file for each of the above with breaks by watershed.

TE&S special habitats - Data not complete needs to be done on a Watershed analysis basis. Polygon maps would be generated by the biologists or computer using existing vegetation layers. Analysis could be run on reproductive habitat or foraging depending on the species. Polygons would be intersected with the 440 yard road buffer coverage. Answer is percent of the 440 yard road buffer containing habitats.

TE&S reproductive sites - Used 2 ways: 1.) Use the reproductive sites utilized in the programmatic BA. Buffer bald eagle nests by ½ mile, use the Lynx Analysis Unit (LAU), and buffer spotted from sites by ¼ mile. Buffer the sage grouse leks by 2 miles and other raptor nests by ¼ mile. Other sensitive species could be included if desired using the latest research or planning document to determine an appropriate buffer. 2.) measure the closest the road comes to the center point of the above mentioned polygons.

Road buffer - Buffer road segments by 440 yd. from mid point. Will be used with the rest of the analysis.

Vegetation for TE&S species HRV in Watershed - Data not complete needs to be done on a Watershed analysis basis. Identify existing quantities of habitat and compare to HRV or desired levels. Answer = the percentage the watershed's habitat deviates from HRV or desired. This would have to be a sum total of deviation of each habitat type looked at.

Road Density Run - Focal sum analysis needs redone on both Forests. As follows: (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m2). Used twice: 1. Which break is the road predominately ie the weighted average based on length of the categories the road is in. Output is a road density adjacent to that road. 2. Use Watershed road density based on BLM GTRN cover (not focal sum). Answer is road density by watershed (6th field)

F. Plan Wildlife Allocations - Use lists of allocations for both Forests provided by Monte. Intersect those allocations with road buffer. Answer = percent of road buffer occupied by Wildlife Allocations

Area open to off road use - Therefore all areas not restricted to motorized vehicles maybe just General Forest is open. Ochoco the following are closed: slopes greater then 30%, riparian areas, old growth allocations, any area closures. Create poly cover of areas open to OHV use (ie not closed) and intersect with 440 yd road buffer to determine percent of buffer occupied with open areas.

Do the impacts of the road system contribute to a decline in the ecological conditions necessary to maintain species viability?	Score	Weighting
(B1-a) Road effects on TE&S species reproductive areas?		1
(B1-b) Does the road influence habitats within the minimum buffer for nest stands or reproductive areas?		1

(B1-c) What percent of TE&S habitat within the watershed is affected by the road segment?		1
(B1-d) What is the percent of existing TE&S habitat within the watershed effected by all subsequent roads?		1
(B1-e) How does this road contribute to the areas road density?		1
(B1-f) How many miles of lower order roads come off this segment within the watershed?		
(B1-g) Is the area this road is in open to off road use?		
(B1-h) Are there noxious weed populations along the road that could spread and reduce adjacent habitats?		
(B1-i) What is the road density in the watershed?		1.5
	TOTAL SCORE	
	WEIGHTED AVERAGE	

Wildlife B2 - Where is the road system contributing to the reduction of habitat for species dependent upon snags and down logs (where snags and down logs are limited)?

Answers Questions TW1, TW2, TW3, and TW4

Evaluation Factors Used to Determine Score

Physical Elements Associated with Road

(B2-a) What distance is the road segment from town?
Buffer population centers by 1 mile and measure distance from edge of buffer to closest point on road segment being analyzed.

High: 9 = < 10 miles, 8 = 10.1 - 15 miles, 7 = 15.1 - 20 miles

Medium: 6 = 20.1 - 25 miles, 5 = 25.1 - 30 miles, 4 = 30.1 - 35 miles

Low: 3 = 35.1 - 40 miles, 2 = 40.1 - 45 miles, 1 = > 45 miles

(B2-b) How does this road contribute to the areas road density?
Run the roving windows road density analysis using the following categories (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²), this will create a polygon cover that will be intersected with the road segments to determine which segment the road is predominantly within. If the segment intersects two bands they will be averaged.

High: 9 = > 6.0, 8 = 4.76 - 6.0, 7 = 3.5 - 4.75

Medium: 6 = 2.665 - 3.5, 5 = 1.833 - 2.665, 4 = .999 - 1.833

Low: 3 = .666 - .999, 2 = .333 - .666, 1 = 0 - .333

(B2-c) How many miles of lower order roads come off this segment within the watershed? *This is only practical at the watershed scale

where road segments can be identified that connect with other segments.

Calculate the number of road miles of lower order roads coming off of the specified road within the watershed. This measures how the specified segment facilitates other access routes in the watershed.

High: 9 = > 7.5, 8 = 6.3 - 7.4, 7 = 5.1 - 6.2

Medium: 6 = 4.1 - 5.0, 5 = 3.1 - 4.0, 4 = 2.1 - 3.0

Low: 3 = 1.333 - 2, 2 = .667 - 1.334, 1 = .1 - .667

(B2-d) Is the area this road is in open to off road use?

Create a layer that shows where off road use is allowed based on Forest Plan Direction and determine percent of road buffer (440 yards) containing areas open to off road use.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

(B2-e) Is the area this road is in open to woodcutting?

Create a layer showing where woodcutting is allowed (use the past 5 years of maps) and intersect it with the road buffer (440 yards) to determine the percentage of area open to wood cutting within the road buffer.

High: 9 = > 81%, 8 = 61% - 80%, 7 = 41% - 60%

Medium: 6 = 34% - 40%, 5 = 27% - 33%, 4 = 20% - 26%

Low: 3 = 13% - 19%, 2 = 6% - 12%, 1 = .1% - 5%

Watershed Level Elements Adding to Road Effects

(B2-f) How much timber harvest has occurred in the watershed?

Calculate the percent of the watershed harvested in the last 50 years. Use the activities layers to determine what areas have been harvested.

High: 9 = > 50%, 8 = 43.75% - 50%, 7 = 37.6% - 43.75%

Medium: 6 = 31.26% - 37.5%, 5 = 25.1% - 31.25%, 4 = 18.76% - 25%

Low: 3 = 12.6% - 18.75%, 2 = 6.26% - 12.5%, 1 = < 6.25%

(B2-g) What is the snag density in the watershed and how does that relate to historic or desired levels?

Using existing snag density numbers obtained through field inventories in the watershed (if they exist) rate the risk of wood cutting dropping levels below desired levels.

High: 9 = >40% Below Desired Levels (BDL), 8 = 34.3% - 39.9% BDL, 7 = 28.6% - 34.2% BDL

Medium: 6 = 22.9% - 28.5% BDL, 5 = 17.2% - 22.8% BDL, 4 = 11.5% - 17.1% BDL

Low: 3 = 5.8% - 11.4% BDL, 2 = 0 - 5.7% BDL, 1 = Within or above desired levels

(B2-h) What is the road density in the watershed?

Run the roving windows road density analysis using the following categories (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²), this will then be used to calculate percentages of the watershed in each category of road density. Using a weighted average based on the percent of the watershed in a given road density category calculate the weighted average for the watershed. This analysis should be done at the 6th field HUC level and aggregated up to the 5th field depending on the size of the watershed and the length of the roads.

High: 9 = > 6.0, 8 = 4.76 - 6.0, 7 = 3.5 - 4.75

Medium: 6 = 2.665 - 3.5, 5 = 1.833 - 2.665, 4 = .999 - 1.833

Low: 3 = .666 - .999, 2 = .333 - .666, 1 = 0 - .333

Data Layers to Use and Union Analysis Description:

Generate a Dbase file for each of the above with breaks by watershed.

Percent of Watershed harvested in the last 50 years - Use the activities data to determine harvest activities. Answer = Percentage of the watershed that has been harvested in the past 50 years.

Cities - Use the city layer to measure the closest distance to the road segment. Answer = minimum mileage from the city perimeter to the closest road segment. Answer = distance in miles.

Snag Density - Cover not complete. Could be done at watershed scale. Compare the snag density to historic or desired levels. Answer = Percentage the existing snag density varies from the historic or desired.

Area open to off road use - Therefore all areas not restricted to motorized vehicles maybe just General Forest is open. Ochoco the following are closed: slopes greater then 30%, riparian areas, old growth allocations, any area closures. Create poly cover of areas open to OHV use (ie not closed) and intersect with 440 yd road buffer to determine percent of buffer occupied with open areas.

F. Plan Wildlife Allocations - Use lists of allocations for both Forests provided by Monte. Intersect those allocations with road buffer. Answer = percent of road buffer occupied by Wildlife Allocations

Road Density Run - Focal sum analysis needs redone on both Forests. As follows: (0 - .333, .333 - .666, .666 - .999, .999 - 1.833, 1.833 - 2.665, 2.665 - 3.5, 3.5 - 4.33, 4.33 - 5.16, 5.167- 6.0, >6.0 m/m²). Used twice: 1. Which break is the road predominately ie the weighted average based on length of the categories the road is in. Output is a road density adjacent to that road. 2. Use Watershed road density based on BLM GTRN cover (not focal sum). Answer is road density by watershed (6th field)

Wood cutting area - Develop a map of the existing, past (5 years), and expected future years woodcutting areas. Intersect with the 440 yard road buffer to determine the percentage of the road buffer containing areas where woodcutting is allowed. Answer = percent of road buffer occupied by area open to woodcutting.

Where is the road system contributing to the reduction of habitat for species dependent upon snags and down logs (where snags and down logs are limited)?	Score	Weighting
(B2-a) What distance is the road segment from town?		1
(B2-b) How does this road contribute to the areas road density?		1

(B2-c) How many miles of lower order roads come off this segment within the watershed?		1
(B2-d) Is the area this road is in open to off road use?		1
(B2-e) Is the area this road is in open to woodcutting?		1
(B2-f) How much timber harvest is in the watershed?		1.2
(B2-g) What is the snag density in the watershed?		1.5
(B2-h) What is the road density in the watershed?		1.5
	TOTAL SCORE	
	WEIGHTED AVERAGE	

APPENDIX B - DEFINITIONS

Wildlife Movement Corridors: migration routes, RHCA layers, saddles and ridges (buffered 440 yards), and identified connectivity habitats (this will not be used in this analysis because the layers are incomplete).

TE&S Reproductive Habitats: Goshawk Post Fledging Area (PFA), Bald Eagle Management Area (BEMA), Bald Eagle Conservation Area (BECA), sensitive rapter species nest buffers, lynx denning habitat, Spotted Owl reproductive cores, Townsend's maternity roosts, etc.

Historic Range of Variability - a range of vegetative and/or structural conditions that could occur at any given time dependent on the environmental and disturbance parameters. The quantities that make up the range were established based on historic (1880s) vegetative communities and data associated with disturbance size, pattern, and intensity for the Central Oregon.

Lek - Generally open areas surrounded by sagebrush that are used for courtship and breeding by sage grouse.

Post Fledging Area - within the nesting home range, the area (approximately 420 acres) of concentrated use by the goshawk family after the young leave the nest. The 420 acres are exclusive of the suitable replacement nest areas.

Special Habitats

Natural

Cliffs
Waterfall
Beaver Dams
Grouse Lek

Trails (game)
Elk Wallows
Boulder/Rock outcrop
Salting Area

Artificial

Stock water tank
Fuel breaks
Ponds
Buildings

Abandoned home site
Artificial nest box
Mine Tunnels

Insect mound	Talus slope	Culverts
Wet meadow	Rodent colony	Brush pile
Otter Slides	Seeps	Bridge
Talus field	Winter trail	Material source
Brush fields	Stream crossing	
Log jam	Cave	
Rocky crags	Dry wash	

APPENDIX C - SUMMARY LIST OF QUESTIONS

\$ (2)	(A1-a) What is the objective maintenance level and average traffic volume of the road and does the road run perpendicular or parallel to the corridors? (Local knowledge was used to modify the roads layer to show the traffic volumes and objective maintenance level).
	(A1-b) What is the percentage of the road influence area that is within the wildlife movement corridor?
# (4)	(A1-c) How does this road contribute to the areas open road density? (total road density could be used for specific purposes)
	(A1-d) Are there physical barriers associated with the roads?
	(A1-e) How wide is the road? (cut slope to cut slope)
	(A1-f) Is there sufficient hiding cover adjacent to the road? To measure this it was assumed that areas with > 70% canopy cover typically would provide multiple canopy layers sufficient to provide hiding cover and would provide vertical screening.
* (5)	(A1-g) How many miles of lower order roads come off this segment within the watershed?
~ (4)	A1-h) Is the area this road is in open to off road use?
^ (4)	(A1-i) What is the surrounding road density?
	(A1-j) What is the amount of human activity centers (dwellings, campgrounds, etc.) in the area?
	(A2-a) How many acres of riparian habitats (RHCA buffers) does the road affect?
	(A2-b) What percent of the unique habitat is affected? (See unique habitat definition)
	(A2-c) What is the percent of road buffers of roads subsequently come off of this road that effect unique habitats?
#	(A2-d) How does this road contribute to the areas road density?

*	(A2-e) Does the road completely intersect the area or only a portion of the road segment enters the habitat feature in a manner that does not intersect the area?
~	(A2-f) Is the area this road is in open to off road use?
	(A2-g) Does this road access a roadless area?
^	(A2-h) What is the surrounding road density?
	(A3-a) What percent of existing interior habitat does the road effect?
*	(A3-b) How many miles of lower order roads come off this segment within the watershed?
	(A3-c) Are there other fragmentation factors in the area (ex. Power line corridors, train tracks, or pipelines)?
	(A3-d) What is the existing fragmentation level within the watershed?
	(A3-e) Does the watershed have desired levels of necessary vegetation / habitat?
	(A3-f) What percentage of the watershed is currently occupied by road-beds (cut slope to cut slope)?
	(B1-a) What level of affects is the road segment having on identified or active TE&S species reproductive areas? (See reproductive areas list in Appendix B).
	(B1-b) Does the road influence habitats within the minimum buffer for nest stands or reproductive areas?
	(B1-c) What percent of road buffer effects existing TE&S habitat (primary and secondary reproductive) within the watershed is affected?
	(B1-d) What is the percent of road buffers of roads subsequently come off of this road that effect identified or active TE&S habitat (primary and secondary reproductive) within the watershed?
	(B1-e) What is the percent of road buffers of roads subsequently coming off this road that effect identified active TE&S species reproductive areas? (See reproductive areas list in Appendix B).
#	(B1-f) How does this road contribute to the areas road density?
*	(B1-g) How many miles of lower order roads come off this segment within the watershed?
~	(B1-h) Is the area this road is in open to off road use?
	(B1-i) Are there noxious weed populations along the road that could spread and reduce adjacent habitats?
^	(B1-j) What is the road density in the watershed?
	(B2-a) What distance is the road segment from town?
#	(B2-b) How does this road contribute to the areas road density?
*	(B2-c) How many miles of lower order roads come off this segment within the watershed?
~	(B2-d) Is the area this road is in open to off road use?

	(B2-e) Is the area this road is in open to woodcutting?
	(B2-f) How much timber harvest has occurred in the watershed?
	(B2-g) What is the snag density in the watershed and how does it relate to historic and desired levels?
^	(B2-h) What is the road density in the watershed?

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USDA Forest Service - Deschutes & Ochoco National Forests
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WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
Bear Creek								
	1600000	6	7	6	4	5	1H	Primary access route into the Maury Mts., crosses several drainages, this watershed was the most out of balance of all the WA analyzed in the Maury WA, goes past a goshawk PFA, along the top of wilderness and above the Antelope BEMA, heavily harvested in the past with limited snag and down log values.
	1640000	5	5	4	3	4	M	Goes from Sherwood saddle down Klootchman Creek off forest. Runs along riparian most of the way, goes past a goshawk PFA, heavy turkey use. Plowed by the county in the winter. Beginning to get heavy snowmobile use in the winter from Sherwood Saddle.
	1700000	6	7	5	5	7	2H	Major road access goes to numerous dispersed sites, accesses Antelope Reservoir. This road gets use almost year round. Road is within 400 yards of Bald Eagle nest at Antelope, goes through winter range, goes along Faught creek with several aspen stands and wet meadows. Deer, Elk, and Turkey use. Wood cutting is high due to the campground at Antelope.
	1700600	5	7	3	5	7	2H	Short section going into Antelope Camp ground. It's within winter range and BEMA, goes along Bear Creek. High recreational use in the area.
	1750000	7	6	7	3	6	2H	Goes all the way along the top of the crest of the Maurys, goes through dense canopy mixed conifer stands, goes through the only high canopy closure in the Maurys, goes through the head waters of numerous creeks, provides access to the top of the Hammer Creek WL / Roadless area. Bear Creek WA is the most out of balance vegetative conditions of all WAs in the surrounding area. Heavy spring Turkey use, and elk calving associated with springs.
Bear Creek Total		5.8	6.4	5.0	4.0	5.8		
Bear Creek (Bridge)								
	2600000	9	6	5	6	4	1H	Goes along Heflin Creek, high traffic and speeds, limits wolverine movement, goshawk nest. Watershed is fragmented from logging in this area.
	2700000	8	8	7	4	8	4H	Provides access to large portions of Mill Creek wilderness, numerous subroads with high dispersed recreation. High deer and elk numbers adjacent, fragments interior habitats adjacent to the wilderness, poor road condition above wilderness slightly reduces traffic volumes and speed.
	2730000	8	7	7	3	4	3H	Parallels and enters winter range, crosses numerous drainages, goes above an old growth block, high use deer and elk habitat, heavy hunting pressure deer, elk, goes from pine dominated stands lower in WA to mixed conifer interior habitats higher in WA.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	2730250	5	4	5	3	5	M	Goes through north slope mixed conifer, some riparian habitats, provides a through from 2700 to 2730. Lower volume road, with a gravel pit near the bottom, winter range on the lower end and wilderness on the upper end. Numerous past clear cuts along the road, with the watershed and adjacent areas having higher levels of fragmentation especially since the Hash Rock fire.
	2735000	7	8	7	3	5	3H	Adds to road density in winter range, parallels Bear and Scotty Creek, seasonally closed but not implemented on the ground, goes through an old growth block, high use turkey, deer and elk habitat, heavy hunting pressure deer, elk, turkey, numerous dispersed sites along creek, calving in flats associated with creek.
	2745000	6	6	6	4	9	1H	Very short section in this watershed. Numerous springs and wet meadows, high turkey, elk, and deer use, high deer and elk crossing of this road, numerous clear cuts along road.
	2750000	4	3	3	2	3	M	Relatively short road the provides access to private timber lands, goes through sparse pine stands with high harvest levels in the past. Provides access to Stevenson Lookout.
Bear Creek (Bridge) Total		6.7	6.0	5.7	3.6	5.4		
Bridge Creek								
	2210000	6	6	6	5	6	M	Majority of the road is on private land, crosses OG corridors, access Ochoco Divide RNA, deer and primarily elk use, bisects major ridge on Ochocos for travel, high firewood cutting.
	2230000							Not in this watershed.
	2630000	3	8	9	6	9	3H	The road passes through relatively contiguous block of old growth with high canopy closure, heavy big game use, fairly low traffic volume lessens impact to movement. High potential for wolverine use. Fair amount of snowmobile use in the winter (from Mitchell). HUGE problem of illegal firewood collecting. Run parallels wilderness boundary.
Bridge Creek Total		4.5	7.0	7.5	5.5	7.5		
Camp Creek								
	1600000	7	6	4	3	3	1H	Primary access route through this watershed. Majority of the watershed is shrub step and juniper, heavily harvested pine stands, near winter range, goes past a goshawk PFA, crosses several drainages.
	1670000	6	4	4	2	3	M	Access Arrowwood point, highly cut over, interface between lower elevation shrub communities and higher elevation conifer stands. Two lynx sightings with a mile of this road. Goes along the edge of winter range, is a loop road that gets through hunting. Forested portion of WA is deficit in snag and down log levels, provides access to several water developments.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	1750000	3	5	3	2	2	M	Very short piece that goes through a wet meadow and spring with aspen. Some turkey and elk use in spring. Goes right above a goshawk PFA.
Camp Creek Total		5.3	5.0	3.7	2.3	2.7		
Deep Creek								
	1200000	6	2	2	5	7	1H	Relatively heavy traffic, low hiding cover adjacent, greater potential for direct mortality, vehicle collisions. Road is very near goshawk, cooper's and red-tailed hawk nests. High level of illegal and legal woodcutting activities in the area.
	2630000	4	3	2	2	2	M	Local significance to big game due to surrounding habitat. Paulina portion of the road has a lower road density than is described for the road in its entirety. Potential wolverine habitat to the north (winter access).
	3000000	6	3	6	5	4	M	Relatively heavy traffic, low hiding cover adjacent, greater potential for direct mortality, vehicle collisions. Heavy big game use in the area, calving areas, some raptor nest stands (goshawk). Area is naturally fragmented with roads within much of the covered stringers. Moderate level of illegal and legal woodcutting activities in the area, esp. from 710 west to the Forest boundary.
	4200000	7	4	6	4	7	2H	Heavy traffic, low hiding cover adjacent, greater potential for direct mortality, vehicle collisions. Heavy big game use in the area, esp. movement from north and south. Area is naturally fragmented with roads within much of the covered stringers. The road falls within an area deficient of snags (<2.25 snags/acre).
	4200460	1	3	1	1	3	L	Very short stretch
	4250000	4	4	4	4	4	M	
	4254000	3	3	4	4	3	M	
	4256000	2	3	3	2	2	L	Road is low impact in a higher impact watershed relative to fragmentation. Illegal firewood cutting in the adjacent stringer.
	4270000	4	3	1	3	1	M	Very little cover, moderate amount of vehicle travel, no physical barriers. Mountain quail.
Deep Creek Total		4.1	3.1	3.2	3.3	3.7		
Lower Beaver								
	1250000	3	1	2	2	2	L	Some cover, small spur on the top of the ridge with some big game movement across it. Little impact to unique habitat or TE&S species.
	3800000	5	3	5	4	1	M	Moderate amount of traffic, no barriers, moderate amount of cover, crosses some RHCA, along a ridgetop between wilderness and roadless area. TE&S impact is low but may have some potential for wolverine. Impacts to snags are probably limited to camp use.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	3810000	4	4	2	3	3	M	Very little cover, moderate amount of vehicle travel, no physical barriers. Along an RHCA,
	5810000	3	2	2	3	2	L	No cover, along a draw, crosses drainages, little impact to fragmentation or TE&S, low impact to snags (low use).
Lower Beaver Total		3.8	2.5	2.8	3.0	2.0		
Lower N. Fork Crooked								
	4200000	7	4	6	4	7	2H	Heavy traffic, low hiding cover adjacent, greater potential for direct mortality, vehicle collisions. Heavy big game use in the area, esp. movement from north and south. Area is naturally fragmented with roads within much of the covered stringers. The road falls within an area deficient of snags (<2.25 snags/acre).
	4200460	0	0	0	0	0	N/A	Wrong watershed, see Middle North Fork
	4230000	3	3	2	2	3	L	Low wildlife habitat diversity, value, forested areas have been cutover. This reach bisects a pileated feeding area. Accesses north end of Fox Canyon OGMA. Road crosses general forest winter range and is within the South Boundary Cooperative Road Closure area. Heavy year round elk use in the area.
	4240000	3	3	2	2	3	L	Low wildlife habitat diversity, value, forested areas have been cutover. Road crosses winter range and is within the South Boundary Cooperative Road Closure area. Heavy year round elk use in the area. Access to upper falls, relatively heavy rec use.
Lower N. Fork Crooked Total		3.3	2.5	2.5	2.0	3.3		
Lower Ochoco								
	2600000	9	8	3	6	8	3H	Goes along Marks Creek entire way, paved, high volume and speed, lower 1/3 in winter range, all private lands.
Lower Ochoco Total		9.0	8.0	3.0	6.0	8.0		
Lower South Fork								
	3800000	5	3	5	4	1	M	Moderate amount of traffic, no barriers, moderate amount of cover, crosses some RHCA, along a ridgetop between wilderness and roadless area. TE&S impact is low but may have some potential for wolverine. Impacts to snags are probably limited to camp use.
	5810000	3	2	2	3	2	L	No cover, along a draw, crosses drainages, little impact to fragmentation or TE&S, low impact to snags (low use).
	5840000	3	2	2	1	2	L	Moderate amount of traffic, no barriers, moderate amount of cover, southern portion in elk and deer winter range, little impact to TE&S, low impact to snag and down wood.
	5850000	5	3	3	3	2	M	Low traffic volume, low physical barriers, little cover, relatively high value to big game for movement coming out of wilderness down to the S.Fork of the John Day. Not conducive to wood cutting therefore low impact to snags and down wood.
Lower South Fork Total		4.0	2.5	3.0	2.8	1.8		
McKay								

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	2150000	7	8	5	2	7	3H	Loop road, paved, high volume and speeds, very little public lands, heavily harvested in the past, snag deficient, public lands are old growth, goes along Allen Creek most of the way, high deer and elk numbers, numerous private dwellings scattered along here. Biological winter range in lower elevations.
	2700000	8	8	7	6	9	4H	Paved road with incredibly high traffic, goes by a bald eagle nest on private land, lower half is on private land, main access to the north end of Prineville District, goes through winter range, goes along McKay and little McKay for most of length, provides access to Mill Creek wilderness, goes by one old growth area, numerous subroads with high dispersed recreation, gets relatively heavy OHV use off road and snowmobile in winter. High deer and elk numbers adjacent, and it runs down the primary drainage most likely historically used to access winter range. Lower sections of private are agricultural.
	2705000	5	5	5	2	7	1H	Lower 1/3 goes through winter range, highly fragmented habitats adjacent to road, heavy wood cutting, deer and elk move across this road.
	2710000	6	5	4	2	7	1H	Highly fragmented pine on east end and mixed conifer on west end, several springs along the road, high deer and elk use, goes near an old growth area, accesses private timber land to the west, high traffic volumes, numerous dispersed recreation sites, runs along the ridge. Influences local big game movement along the ridge.
	3300000	5	7	4	3	9	2H	High traffic road, goes along riparian area entire length, access an OHV trail, extensive party spots, sledding hill, and mud bogging, high dispersed camping and OHV use in riparian areas, numerous past clearcuts on upper end, good deer numbers. Goes through winter range, closure efforts have been unsuccessful.
	3380000	7	7	5	3	7	3H	Goes through winter range - winter closure is effective, accesses Brennan Palisades/Dry Creek campground and horse trails, goes along riparian habitat for end terminal, access the Green Ridge OHV trail system.
McKay Total		6.3	6.7	5.0	3.0	7.7		
Mid Crooked River RM110-125								
	1600000	5	7	7	3	6	2H	Primary access route into the Maury Mts., goes entirely along a drainage, goes through dense mixed conifer with numerous clear cuts in WA, majority of WA is private land, goes along the Hammer Creek Roadless area. Had a wolverine sighting just off this road in 1992. Goes along a winter range at the bottom.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	1670000	6	4	4	2	3	M	Access Arrowwood point, highly cut over, goes along a riparian area with wet meadows and aspen stand, higher elevation portions access mixed conifer stands. Loop road that gets through hunting. Forested portion of WA is deficit in snag and down log levels, provides access to several water developments.
	1750000	3	5	3	2	2	M	Very short piece that goes through a wet meadow and spring with aspen. Some turkey and elk use in spring.
Mid Crooked River RM110-125		4.7	5.3	4.7	2.3	3.7		
Mid Crooked River RM70.5-86.2								
	1750000	3	5	3	2	2	M	Very short piece that goes through a wet meadow and spring with aspen. Some turkey and elk use in spring. Goes through an old growth area.
Mid Crooked River RM70.5-86.2		3.0	5.0	3.0	2.0	2.0		
Mid Crooked River RM86.2-110								
	1600000	4	7	5	7	6	2H	Primary access route into the upper portions of this WA., limited access to the remaining public lands, heavily harvested watershed, crosses the head waters of several streams with unique habitats of small wet meadows and aspen stands. Goes within 200 yards of a Bald Eagle Nest, heavy turkey and deer use. Majority of the lower portion is juniper and private land. Section along Sherwood creek is plowed in the winter by the county. Historic Sand Hill Crane use lower in the watershed. Comes off the Post Paulina Hwy which goes along the Crooked River one of the primary winter roosting habitats for Bald Eagle.
	1610000	6	7	4	3	4	1H	Goes along Newsome Creek, starts in winter range, Sand hill Crane use lower in the watershed, goes past a PFA and numerous wet meadows. Winter range signing is not effective. Private land owner would like to see a gate put in. Heavily harvested area in the past. Lower in the WA it is primarily ag. use.
	1620000	5	6	4	3	4	M	Goes along Gibson Creek, starts in winter range, Sand hill Crane use lower in the watershed provides access to a gravel pit. Winter range signing is not effective. Private land owner would like to see a gate put in. Heavily harvested area in the past. Lower in the WA it is primarily ag. use.
	1680000	6	7	6	3	5	1H	Starts in winter range, goes through numerous wet meadows and highly fragmented habitats with old clear cuts, goes past and old growth area, accesses mixed conifer, access Drake Butte and Tower point look out, goes past a goshawk PFA, heavy turkey and elk use in the spring.
	1690000	3	4	3	2	3	M	Goes down to winter range, has a goshawk PFA near it, pretty short road.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	1700000	6	7	5	5	7	2H	Major road access goes to numerous dispersed sites, accesses Antelope Reservoir. Higher traffic volumes and speeds. This road gets use almost year round. Goes through winter range, goes along Pine creek with several aspen stands and wet meadows. Lower portion goes through winter range and private lands to the Paulina Hwy. Lower habitats are juniper and agriculture.
	1750000	7	6	7	3	6	2H	Goes all the way along the top of the crest of the Maurys, goes through dense canopy mixed conifer stands, goes through the only high canopy closure in the Maurys, goes through the head waters of numerous creeks, provides access to the top of the Hammer Creek WL / Roadless area. Bear Creek WA is the most out of balance vegetative conditions of all WAs in the surrounding area. Heavy spring Turkey use, and elk calving associated with springs. Provides access to Tower Point lookout.
	1760000	3	4	4	2	2	M	Map shows as 1750 680 road, going to Tower Point. Short section of higher elevations habitats on the south slope. Goes through some higher canopy cover and stiff sage scabs.
	4215000	6	7	3	4	2	1H	Borders winter range - South Boundary Closure, goshawk PFA, crosses several drainages, some turkey sitings. Half this road is on private. Access Lookout Mt. Roadless Area.
	4235000	3	5	3	1	2	M	South Boundary Road Closure Area, entirely in winter range, accesses BLM, high elk use, goshawk PFA on one end, open pine, heavily cut over, a lot of mountain mahogany in this area. Goes along several riparian areas, with some meadow habitat.
Mid Crooked River RM86.2-110		4.9	6.0	4.4	3.3	4.1		
Middle Beaver								
	5820000	4	2	4	3	3	M	Low traffic volume, low physical barriers, little cover, relatively high value to big game for movement. RHCA crossings, little fragmentation input. Moderate impact to snags and down wood.
	5830000	5	3	4	2	4	M	Was not originally on the spreadsheet. Moderate level of traffic with very little cover high impact to potential wildlife movement areas, just north of big game winter range. No TE&S concerns, low end of snag and down wood requirements with moderate woodcutting use.
	5840000	3	2	2	1	2	L	Moderate amount of traffic, no barriers, moderate amount of cover, southern portion in elk and deer winter range, little impact to TE&S, low impact to snag and down wood.
Middle Beaver Total		4.0	2.3	3.3	2.0	3.0		
Middle N. Fork								

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
Crooked	2200000	3	5	3	2	6	M	Parallels Beetle creek for the majority of the reach. Crosses old growth corridors, good elk populations. A lot of firewood activity. Low traffic limits effects of fragmentation. Potential winter use by elk along the southern end of this reach during low snow years. A lot of rec use including snowmobiles. Allen Creek HorseCamp is accessed by this road.
	2230000	1	1	2	6	1	M	Main access road to Pisgah lookout, passes thru OG connectivity corridors, top end of a relatively unroaded watershed, if traffic volume increases could interrupt movement between Allen creek and the wilderness to the north. Heavy subalpine fir. On boundary of PIF special bird conservation area due to subalpine fir.
	2630000	3	7	8	6	9	3H	The road passes through relatively contiguous block of old growth with high canopy closure, heavy big game use, goshawk PFA and nest area adjacent to the road, fairly low traffic volume lessens impact to movement. High potential for wolverine use. Fair amount of snowmobile use in the winter (from Mitchell). HUGE problem of illegal firewood collecting.
	3000000	2	3	3	2	7	1H	Road passes by OGMA on the north end, moderate traffic. Moderate big game use in the area. Area is naturally fragmented with roads within much of the covered stringers. High level of illegal and legal woodcutting activities in the area.
	3010000	4	5	4	1	4	M	Road passes thru biological antelope migration but low traffic volume lessens the impact, small stretch on the north end passes through pileated feeding and heavy canopy closure area. Access to Allen Creek Reservoir. Low snow years, elk winter in the area. Moderate amount of snowmobile use. Road passes through stringers.
	4200000	7	4	6	4	1	1H	Heavy traffic, wild and scenic highway, thus greater potential for direct mortality, vehicle collisions, parallels an OGMA, paved road, low hiding cover adjacent. Area is naturally fragmented with roads within much of the covered stringers. The road falls within an area deficient of snags (<2.25 snags/acre). Western portion travels through the Big Summit Prairie. High impact to species using OG on western reach of the road for movement.
	4200460	1	1	1	1	1	L	Short segment down to the drainage, parallels 4200000
	4230000	2	2	2	1	3	L	Low wildlife habitat diversity, value, forested areas have been cutover, northern end of road accesses Big Summit Prairie. Southern end of this reach bisects a pileated feeding area.
	4240000	2	2	2	1	3	L	Low wildlife habitat diversity, value, forested areas have been cutover, northern end of road accesses Big Summit Prairie.
	Middle N. Fork Crooked Total		2.8	3.3	3.4	2.7	3.9	
Middle South Fork								

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	5800000	6	5	4	5	5	M	High traffic volume, low cover, crosses deer and elk winter range, crosses or circles two bald eagle winter roosts, moderate impact to movement corridors, area is deficient of snags.
	5870000 GRA-42	4	4	3	3	4	M	Moderate amount of traffic volume, low cover, moderate impact to potential movement areas, key fall use areas for deer, area is deficient in snags.
Middle South Fork Total		5.0	4.5	3.5	4.0	4.5		
Mill								
	2700000	8	8	7	4	8	4H	First 1/3 is paved road with high traffic, provides access to large portions of Mill Creek wilderness and Bingham Prairie campground, numerous subroads with high dispersed recreation, gets relatively heavy OHV use off road and snowmobile in winter. High deer and elk numbers adjacent, fragments interior habitats adjacent to the wilderness, goes past a goshawk PFA, poor road condition above wilderness slightly reduces traffic volumes and speed.
	2745000	6	6	6	4	9	1H	Near an elk calving area, Cooper's hawk nest, numerous springs and wet meadows, high elk, and deer use, numerous clear cuts along road. Right above the wilderness.
	3300000	8	8	3	6	7	3H	High traffic road, goes along riparian area entire length, access an OHV trail, extensive party spots, accesses Wildcat campground, numerous past clearcuts on upper end, good deer numbers. Good elk numbers on both sides of road with some crossing, goes through winter range, closure efforts have been moderately successful. Goes along an old growth area, was probably historic migration route to lower habitats, provides access to Mill Creek Wilderness and roadless area on Wildcat Mountain. Bald Eagle foraging along Mill Creek.
	3300300	5	6	2	3	2	M	Short stretch that access Wildcat Camp ground, provides access to Mill Creek Wilderness, it's within winter range, gated closed during the winter to camp ground, parkinglot is still accessible. Very high snag numbers in the watershed, deficit in late and old structure.
	3320000	5	4	3	3	5	M	Rough road, provides cut across to 2700, access to wilderness, numerous rock structures along road, with numerous past clear cuts, one wet meadow with aspen, high deer and elk use going east west into wilderness.
	3330000	5	4	2	2	1	M	Closed road, goes up the bottom of West for of Mill Creek, wet meadow habitats. Although closed gets vehicle use in the winter, higher dispersed recreation on horses. Goshawk PFA and bottom of road is near winter range. Majority of cover was removed in this watershed by the Hash rock fire.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	3350000	5	7	7	3	4	2H	Provides through access from Mill Creek to Hwy 26. Road is gated at the bottom and blocked with a berm on the top. Road goes all the Benefield Creek and through very dense north slope habitats. Road is currently open in the summer, but existing NEPA calls for it to be closed year round. Provides access to the Wildcat Roadless area, goes through winter range, and crosses an old growth corridor.
	3370000	5	5	4	2	8	1H	Goes through winter range most of the length, winter closure is effective, accesses Dry Creek campground and horse trails, goes along riparian habitat from end terminal. Lower elevation pine habitats predominantly with high harvest levels in this portion of the watershed in the past. Snag and down log levels area low.
	3380000	7	7	5	3	7	3H	Goes through winter range and goshawk PFA, winter closure is effective, accesses Brennan Palisades, goes along riparian habitat for end terminal, access the Green Ridge OHV trail system. Lower elevation pine habitats predominantly with high harvest levels in this portion of the watershed in the past. Snag and down log levels area low.
Mill Total		6.0	6.1	4.3	3.3	5.7		
Mountain Creek								
	1200000	6	2	2	5	7	1H	Relatively heavy traffic, low hiding cover adjacent, greater potential for direct mortality, vehicle collisions. Road is very near goshawk, Cooper's and red-tailed hawk nests. High level of illegal and legal woodcutting activities in the area.
	1280000	2	5	5	5	0	M	Little or no traffic, year round closure except for administrative use, no known physical barriers, intersect a contiguous block of north slope habitat including some of the best LOS habitat on the District. No woodcutting allowed.
	2200000	3	5	3	2	8	1H	About half the road occurs on private land. Parallels Badger Creek for the entire reach. Crosses old growth corridors, good elk populations, accesses a lot good old growth unroaded LOS habitat. A lot of firewood activity in the LOS. Low traffic limits effects of fragmentation.
	2200930	1	1	1	1	1	L	Accesses private timber company land, parallels a stream, short stretch, open Ppine habitat.
	2630000	3	7	8	6	9	3H	The road passes through relatively contiguous block of old growth with high canopy closure, heavy big game use, goshawk PFA and nest area adjacent to the road, fairly low traffic volume lessens impact to movement. High potential for wolverine use. Fair amount of snowmobile use in the winter (from Mitchell). HUGE problem of illegal firewood collecting.
	3010000						N/A	Looks like this road is entirely in the Middle N Fork of the Crooked River.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
Mountain Creek Total		3.0	4.0	3.8	3.8	5.0		
Rock Creek								
	1200000	6	2	4	5	4	M	Very heavy traffic, low hiding cover adjacent, greater potential for direct mortality, vehicle collisions. Heavy impacts to migrating wildlife from east-west. Snags and down wood have moderate levels of impact.
	1250000	3	1	2	2	2	L	Some cover, small spur on the top of the ridge with some big game movement across it. Little impact to unique habitat or TE&S species.
	3800000	5	3	5	4	1	M	Moderate amount of traffic, no barriers, moderate amount of cover, crosses some RHCA, along a ridgetop between wilderness and roadless area. TE&S impact is low but may have some potential for wolverine. Impacts to snags are probably limited to camp use.
	5810000	3	2	2	3	2	L	No cover, along a draw, crosses drainages, little impact to fragmentation or TE&S, low impact to snags (low use).
	5820000	4	2	4	3	3	M	Low traffic volume, low physical barriers, little cover, relatively high value to big game for movement. RHCA crossings, little fragmentation input. Moderate impact to snags and down wood.
Rock Creek Total		4.2	2.0	3.4	3.4	2.4		
Trout Headwater								
	2150000	7	8	5	3	7	3H	Loop road, paved, high volume and speeds, very little public lands, near a bald eagle nest, heavily harvested in the past, snag deficient, public lands are old growth, goes along Allen Creek most of the way, high deer and elk numbers, numerous private dwellings scattered along here. Biological winter range in lower elevations.
	2700000	8	7	5	4	6	2H	Ppaved road with high traffic, provides access to Mill Creek wilderness. Receives high snowmobile use in winter. High deer and elk numbers adjacent, fragments interior habitats adjacent to the wilderness. Short section of the road is in this watershed. High canopy cover in this area and natural movement point between Mill and Trout WA.
	2710000	6	5	4	2	7	1H	Very small portion of road in the WA. Highly fragmented pine on east end and mixed conifer on west end, several springs along the road, high deer and elk use, goes near an OGMA, accesses private timber land to the west, high traffic volumes, numerous dispersed recreation sites, runs along the ridge. Influences local big game movement along the ridge.
	2715000	5	7	4	2	4	1H	Entire length runs along a riparian area, numerous old clear cuts, heavy deer, elk, and turkey use and hunting, heavy Christmas tree cutting in winter, high levels of wood cutting. More local migration issues.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	2720000	5	7	5	3	4	1H	Lower section is in General Forest Winter Range, two Goshawk PFAs, numerous deer, elk, and turkey, lower portion of road effects up slope migration have to cross this road, heavy turkey hunting traffic in spring big game hunting in fall. Numerous springs right near road. Several moderate slope calving areas, south east portion is not a through road. Some wood cutting, several habitat improvement projects near road. Highly fragmented watershed.
	2725000	6	6	6	3	6	M	A lot of historic mixed conifer old growth on north slopes, numerous old clear cuts, heavy hunting traffic, accesses lower Trout creek, lower section goes through winter range and parallels Trout Creek, road accesses private timber lands to the north and is plowed in winter occasionally to facilitate haul, numerous deer, elk, and turkey. Road is used to access much of the north slope country.
	2730000	7	7	6	3	7	3H	A lot of historic mixed conifer old growth on north slopes, numerous old clear cuts, goes along an OGMA, goes along Auger Creek, heavy hunting traffic, accesses lower Trout and Bear creek, lower section parallels winter range, road accesses private timber lands to the north and is plowed in winter occasionally to facilitate haul, numerous deer, elk, and turkey. Road is used to access much of the north slope country. Two goshawk PFAs near road.
	2735000	3	3	2	2	2	L	Short segment in this watershed, road access private lands to north, numerous deer, elk, and turkey, dense pine regeneration.
	2740000	4	7	4	3	3	1H	Accesses heavily used calving area, heavy turkey hunting, goes along a riparian for entire length, lower portion is in winter range, highly fragmented area.
	2745000	6	6	6	4	9	1H	Near an elk calving area, Cooper's hawk nest, numerous springs and wet meadows, high turkey, elk, and deer use, high deer and elk crossing of this road, numerous clear cuts along road.
Trout Headwater Total		5.7	6.3	4.7	2.9	5.5		
Upper Middle John Day								
Upper Middle John Day Total		#DIV/0!	#DIV/0!	#DIV/0!	#####	#DIV/0!		
Upper N. Fork								

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
Crooked	2200000	5	7	6	5	5	1H	Crosses old growth corridors, good elk populations. A lot of firewood activity. Low traffic limits effects of fragmentation. Potential winter use by elk along the southern end of this reach during low snow years. A lot of rec use including snowmobiles. Influences movement of big game to Big Summit Prairie numerous calving area habitats, crosses several drainages, very close to bald eagle nest. Eastern section goes along riparian. Interfaces with biological winter range on moderate years, high snowmobile use.
	2230000	1	6	3	1	3	M	Main access road to Pisgah Lookout, passes thru OG connectivity corridors on the north end, top end of a relatively unroaded watershed, if traffic volume increases could interrupt east west movement. Heavy subalpine fir on the north end. North end of road is on boundary of PIF special bird conservation area due to subalpine fir. Southern portion of the road travels through an area of heavy overstory removal, and natural stringer/scab habitat. Potential moderate to heavy elk wintering (during low snow winters) on southern exposures above Big Summit Prairie. High snowmobile use, heavily roaded area with relatively high rec use. Area is deficit of snags and down wood on the south end.
	2630000	4	3	3	3	9	1H	The road passes near OGMA and through pileated feeding area, and old growth connectivity corridors, heavy big game use, higher traffic volume along this section of the road. Fair amount of snowmobile use in the winter. HUGE problem of illegal firewood collecting.
	4200000	7	6	6	5	6	1H	Heavy traffic, paved road, crosses numerous drainages, on the east portion of the road more timber and cover to the south. As the road progresses west cover occurs on both the north and south sides of the road thus greater potential for direct mortality, vehicle collisions. The road interferes with animal movement from LO Mtn MA (roadless) to the north. Eastern half of the road travels thru the big summit prairie. On west end of the road we're trying to emphasize developed rec. Potential wolverine habitat winter use. More access to firewood cutting.
	4205000	4	6	6	4	2	M	Access Lookout Mt. Trail and Baneberry Trail, high canopy cover, Lookout Mt. Roadless area, will be highlighted for recreation and accesses Lookout Mt. Mine, good elk habitat, high snowmobile use, some riparian association.
	4210000	7	8	3	4	7	3H	Near a bald eagle nest, elk, deer, and antelope use, interface between Big Summit Prairie and forest, high traffic, high recreation, numerous riparian meadows, high habitat diversity, antelope kidding and elk calving, cross old growth corridor, numerous large dispersed camp sites.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	4215000	7	7	7	7	3	4H	Follows riparian habitat entire length, deer, elk, antelope, along Wild and Scenic River Corridor, goes along OGMA, goes along prairie habitat might have potential for upland sandpiper, curlews, and sandhill cranes if the road wasn't there, fragments prairie meadow habitat. High dispersed recreation, very open habitats. Goes through some pvt.
	4220000	3	6	4	5	5	M	Runs primarily along Lookout Creek, goes through OG connectivity, high canopy cover areas, provides secondary access to Lookout Mt. Roadless, high dispersed rec. use.
	4230000	3	3	2	2	3	L	Low wildlife habitat diversity, value, forested areas have been cutover. This reach bisects a pileated feeding areas. Accesses north end of Fox Canyon OGMA. Half the road crosses general forest winter range and is within the South Boundary Cooperative Road Closure Area. Heavy year round elk use in the area. Road passes within proximity of a historic goshawk nest. Crosses into good turkey population area and added hunting.
Upper N. Fork Crooked Total		4.6	5.8	4.4	4.0	4.8		
Upper Ochoco								
	2200000	6	7	5	4	7	2H	Paved road, high traffic and speed. High rec. with dispersed sites, accesses Walton Lake and snow park (snowmobile). Along riparian area the entire length. Provides access to the old growth area. Good elk area limits north to south travel. Wild horse populations.
	2210000	3	6	4	2	7	1H	Goes to Crystal Springs. Organizational camp, goshawk PFA, goes along OG corridor, open pine and meadow habitat, elk and deer use.
	2220000	5	6	2	2	2	M	Road that goes around Walton Lake, high recreational use, influences local movement patterns. Secondary recreational use impacts surrounding habitats.
	2220010	1	1	1	1	1	L	Road going to Walton Lake Boat ramp.
	2300000	8	5	2	1	1	1H	Most of this is on pvt. Goes along Ochoco creek with significant meadow habitat, turkey, elk, antelope, and deer, primarily grazed fields, paved, high volume and speed. Higher potential for road kill. Biological winter range. Bald eagle foraging on creek.
	2300403	1	1	1	1	1	L	Ochoco Bunkhouse road, Mt. Quail, very short road.
	2600000	9	8	3	6	8	3H	Goes along Marks Creek entire way, goes past OG connectivity areas, provides access to Mill Creek Wilderness, Ochoco Divide RNA and numerous sub roads, potential barrier to wolverine habitat, paved, high volume and speed, lower 1/3 in winter range, goes to Ochoco Divide campground, high dispersed camping and hunting pressure. Provides access to large areas for woodcutting.
	2600150	1	1	1	1	1	L	Small pullout on Hwy 26

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	2600550	2	2	1	6	1	M	Ochoco snowpark, wolverine sightings in this area. Short loop road. Secondary use of snowmobiles is the highest impact of this road.
	2610000	4	7	6	2	7	2H	Goes past the administrative site, goes through general forest winter range, old growth connectivity, turkeys and elk use, goes primarily along a riparian zone, access HWY 26, couple of goshawk nests. Meadow habitat diversity on the north end, road causes fragmentation, high vehicle use and recreational use, and woodcutting.
	2610400	1	1	1	1	1	L	Residence, parking lot, campground, picnic area, paved moderate traffic. Habitat is reduced due to administrative site.
	2610401	1	1	1	1	1	L	Residence, parking lot, campground, picnic area, paved moderate traffic. Habitat is reduced due to administrative site.
	2610500	1	1	1	1	1	L	Residence, parking lot, campground, picnic area, paved moderate traffic. Habitat is reduced due to administrative site.
	2610510	1	1	1	1	1	L	Residence, parking lot, campground, picnic area, paved moderate traffic. Habitat is reduced due to administrative site.
	2610511	1	1	1	1	1	L	Residence, parking lot, campground, picnic area, paved moderate traffic. Habitat is reduced due to administrative site.
	2610515	1	1	1	1	1	L	Residence, parking lot, campground, picnic area, paved moderate traffic. Habitat is reduced due to administrative site.
	2620000	4	5	4	2	7	1H	Crosses OG connectivity and next to OGMA, goshawk nest near here, 1/3 along riparian area, scattered meadow habitat, elk and deer use.
	2630000	4	3	2	1	9	1H	The road passes thru old growth connectivity corridors, higher traffic volume along this section of the road. Fair amount of snowmobile use in the winter (from snowpark). HUGE problem of illegal firewood collecting. Access to Crystal Creek Campground. High rec use.
	2700000	8	8	7	4	8	4H	Lower portion is paved. Provides access to large portions of Mill Creek wilderness and Whistler campground, numerous subroads with high dispersed recreation. High deer and elk numbers adjacent, fragments interior habitats adjacent to the wilderness, poor road condition above wilderness slightly reduces traffic volumes and speed.
	2730000						N/A	See Bear Creek (Bridge) not really in this watershed
	2730250						N/A	See Bear Creek (Bridge) not really in this watershed
	3350000	7	7	6	3	7	3H	High traffic goes through winter range, past old growth area and corridors, crosses several drainages, ad two goshawk PFAs. Provides access to White Rock camp ground, numerous subsequent access roads and high dispersed use. Highly fragmented watershed.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	4200000	7	7	7	4	7	4H	Heavy traffic, paved road, follows the drainage/impacts the riparian all the way down. Cover occurs on both the north and south sides of the road thus greater potential for direct mortality, vehicle collisions. Roadless area occurs to the south for the entire stretch of road, high dispersed rec use. The road interferes with animal movement from LO Mtn MA (roadless) to the north. On east end of the road we're trying to emphasize developed rec. Potential wolverine habitat winter use. Provides access to Wildcat roadless area and Mill Creek Wilderness.
	4200100	4	6	2	2	1	M	Numerous dispersed sites along road, Goes along riparian entire way, wild horses, access Lookout Mt. Roadless area, provides hunting access to this area.
	4205000	4	6	6	4	2	M	Access Lookout Mt. Trail and Baneberry Trail, high canopy cover, Lookout Mt. Roadless area, will be highlighted for recreation and accesses Lookout Mt. Mine, good elk habitat, high snowmobile use, some riparian association.
	4215000						N/A	All on Private Land / closed by land owner
Upper Ochoco Total		3.7	4.0	2.9	2.3	3.6		
Upper South Fork								
	GRA-69							
Upper South Fork Total		#DIV/0!	#DIV/0!	#DIV/0!	#####	#DIV/0!		
Crooked River Grasslands								
	3500000	4	6	6	4	0	M	Mostly agricultural lands, crosses Fall Canyon Creek - good condition, sage grouse, popular falconry area, near Townsend's big eared bat roost, high volume of traffic, goes to a gravel pit, not much vehicle conflict with big game, some bald eagle use.
	5480000	4	3	3	2	3	M	Road doesn't go as far as on the map. Dense juniper woodland, good deer population. Possibly closed at CRNG boundary.
	5700000	6	5	6	3	3	M	Access Henderson Flat resulting in high OHV use, higher deer levels high traffic volumes, native veg. WA DPS sage grouse. High levels of riffle shooting and garbage dumping.
	5720000	5	7	6	3	3	1H	Follows riparian habitat entire length, high deer and elk, high horse use - access Gray butte horse trail, rock outcropping special habitats, sage grouse.
	5730000	4	4	3	2	4	M	Accesses endurance ride trail. Steep juniper woodland. Fair deer and elk populations.
	5740000	4	6	5	2	5	M	Connects with Cyrus Horse camp. Goes by riparian habitat - two springs. Juniper woodland.
	5770000	3	3	2	2	1	L	Seeded to crested wheat grass, low habitat diversity, WA DPS western sage grouse.
	6000000	6	4	5	2	1	M	Old Redmond Highway. Paved, high traffic road. Crested wheat seeding. Low habitat diversity and value. Wildlife mortality from vehicle collisions.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	6010000	3	2	2	2	2	L	High traffic volume gravel road. Through crested wheat grass, low diversity habitat. High human presence
	6080000	6	6	6	2	2	M	Major gravel road. High traffic use, adjacent to Henderson Flat - high OHV use. Some antelope use in area. Raptors on Haystack Butte.
	6100000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	6110000						N/A	Not on NF ground in this watershed
	6120000	3	4	2	1	0	M	Partially paved, very little public land, primarily agricultural land around there, small deer population.
	6200000	6	7	4	2	5	1H	Very little public land, accesses Crooked River Ranch, high human use, a lot of poaching, trash dumping, borders ODF&W big horn sheep release area - effects would be drastically increased when sheep are released.
	6300000	2	4	3	2	0	M	Very little public land, high volume high speed, access Lake Billy Chinook Res. Very high recreational use, there are cabins on public lands. Little wildlife habitat currently do to the huge level of recreation use, sage grouse, used to be deer winter range. Facilitates effects in other watershed (not reflected in this score).
	6700000	2	1	1	1	0	L	Paved, goes to some farm houses, very short length, high volume and speeds, not much wildlife habitat.
	7210000	5	7	4	2	6	1H	Accesses riparian habitats, cliff/canyon habitats, native plants, high year-round deer popns. Raptor nests on cliffs. High woodcutting area.
	7260000	4	3	3	1	0	M	Norris Lane. Most of this road that is on Grassland is closed. Low habitat values. Agricultural land.
	7290000	3	3	1	1	0	L	To McPheeter's Turf. Mostly agricultural land on private, parallels north unit canal on Grassland. Heavily grazed crested wheat grass. Very limited wildlife value.
	9700000	7	7	5	5	1	2H	Major US HWY, asphalt surface, major access to east side of grasslands, heavy antelope, deer, elk crossing and vehicle collisions including all other wildlife species. Goes thru DPS of WA popn of western sage grouse...occasional bald eagle winter foraging along roadside.
Crooked River Grasslands Total		4.2	4.5	3.6	2.2	1.9		
Deschutes South								
	2600000	7	8	5	6	1	2H	Paved, high volume, high speed traffic, but not as many wildlife and vehicle collisions as in 97. Crosses LRMP antelope WR, deer and elk both cross the highway in this watershed.
	3500000	4	6	6	4	0	M	Mostly agricultural lands, crosses Fall Canyon Creek - good condition, sage grouse, popular falconry area, high volume of traffic, goes to a gravel pit, not much vehicle conflict with big game, some bald eagle use.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	5500000	3	3	2	3	0	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	5600000	3	4	2	2	0	M	Mostly on private land - agricultural. On CRNG crested wheat seedings very low wildlife habitat value. High traffic road. Accesses antelope winter range.
	5740000	4	6	5	2	5	M	Connects with Cyrus Horse camp. Goes by riparian habitat - two springs. Juniper woodland.
	5750000	5	6	4	3	4	M	Access Cyrus Horse Camp, high degree of human use, borders small riparian areas, WA DPS western sage grouse.
	6010000	6	6	5	2	1	M	Adjacent to Osborne Spring riparian area and enclosure. High traffic, high human presence. High habitat value due to riparian.
	6080000	6	6	6	2	2	M	Major gravel road. High traffic use, adjacent to Henderson Flat - high OHV use. Some antelope use in area. Raptors on Haystack Butte.
	6600000	2	2	1	1	1	L	Crosses private, agricultural, and industrial lands, public lands are dominated by crested wheat grass seedings therefore low habitat diversity, wildlife are acclimated to people in the area.
	6610000	3	3	3	2	3	L	Small two track road on Round Butte. Juniper habitat isolated by large area of agricultural land. Small resident deer herd. Sage grouse proposed WA listing area.
	6620000	3	2	2	2	0	L	Accesses PGE offices. Goes through small amount of public land. Area all seeded with crested wheat grass - low habitat diversity and value. Sage grouse proposed WA listing area.
	6630000	3	2	2	2	0	L	Segment is entirely on private land in this watershed does cross Willow creek. Creek is major travel area. Bald eagles hunt the shoreline in the area.
	6670000	4	4	5	2	4	M	Paved road, high traffic, accesses subdivision and a park, state closed most roads off of this one. Mostly in park boundary. Juniper veg on public land.
	8900000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse. Heavy use by dog trainers.
	8910000	4	5	3	2	0	M	Antelope winter range, veg on public lands crested wheat seeding - low habitat value and diversity for wildlife
	9600000	6	7	6	5	1	1H	One old growth juniper area, antelope winter range, WA DPS western sage grouse, much of the area seeded to crested, parallels riparian habitat along Rodman drainage, provides access to Haystack Res., year round bald eagle, redbtail, and seasonal buffleheads, some poaching from road.
	9605000	4	6	6	3	2	M	Paved road to Haystack campground. Adjacent to riparian habitat. WA DPS western sage grouse
	9610000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse. Guzzler near road.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	9700000	7	7	5	5	1	2H	Major US HWY, asphalt surface, major access to east side of grasslands, heavy antelope, deer, elk crossing and vehicle collisions including all other wildlife species. Goes thru DPS of WA potential for western sage grouse...occasional bald eagle winter foraging along roadside.
Deschutes South Total		4.2	4.7	3.8	2.8	1.4		
Lake Billy Chinook								
	3500000	4	6	6	4	0	M	Mostly agricultural lands, crosses Fall Canyon Creek - good condition, sage grouse, popular falconry area, high volume of traffic, goes to a gravel pit, not much vehicle conflict with big game, some bald eagle use.
	6200000	6	7	4	2	5	1H	Very little public land, accesses Crooked River Ranch, high human use, a lot of poaching, trash dumping, borders ODF&W big horn sheep release area - effects would be drastically increased when sheep are released.
	6300000	7	8	6	2	5	2H	Extremely dense deer wintering area - deer winter range LRMP, High volume high speed, access Lake Billy Chinook. Very high recreational use, access several housing developments and dispersed dwellings. High levels of poaching, high OHV use. Facilitates effects in other watershed (not reflected in this score).
	6310000	3	6	3	2	5	M	Deer winter range, adjacent to old growth juniper area. Road may not exist. Rate it as a low travel road. Near private land potential for woodcutting.
	6320000	4	5	3	2	3	M	Deer winter range - extremely heavy use, very bad road so light travel. Closed in the winter.
	6330000	6	6	6	3	5	M	Rough road, some traffic, dense winter popns of deer, significant poaching problems. Private land near potential woodcutting.
	6340000	6	6	6	3	5	M	Rough road, some traffic, dense winter popns of deer, significant poaching problems. Private land near potential woodcutting.
	6350000	7	6	6	2	5	1H	Seasonally closed road, significant elk use and concentrated deer winter use. Meadow, juniper and burned habitat. Poaching a problem in this area.
	6355000	6	6	6	2	5	M	Some elk use and concentrated deer winter use. Meadow, juniper and burned habitat. Poaching a problem in this area.
	6500000	6	6	6	2	3	M	Seasonally closed road, concentrated deer winter use. Juniper and burned habitat. Poaching a problem in this area. Leads to private land. Adjacent to guzzler.
	6510000	6	6	6	2	3	M	Seasonally closed road, concentrated deer winter use. Juniper and burned habitat. Poaching a problem in this area. Leads to private land. Adjacent to guzzler.
	6520000	6	6	6	2	3	M	Seasonally closed road, concentrated deer winter use. Juniper and burned habitat. Poaching a problem in this area. Leads to private land. Adjacent to guzzler.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	6670000	4	4	5	2	4	M	Paved road, high traffic, accesses subdivision and a park, state closed most roads off of this one. Most in park boundary. Juniper veg on public land.
	6671000	1	1	1	1	1	L	Paved road, high traffic, accesses subdivision and a park, state closed most roads off of this one. Most in park boundary. Juniper veg on public land. Closed road by parks. Doesn't exist anymore
	8910000	4	5	3	2	0	M	Antelope winter range, veg on public lands crested wheat seeding - low habitat value and diversity for wildlife
	9600000	3	3	2	3	1	L	Agriculture, all private land, low habitat diversity, WA DPS western sage grouse.
	9700000	7	7	5	5	1	2H	Major US HWY, asphalt surface, major access to east side of grasslands, heavy antelope, deer, elk crossing and vehicle collisions including all other wildlife species. Goes thru DPS of WA popn of western sage grouse...occasional bald eagle winter foraging along roadside.
Lake Billy Chinook Total		5.1	5.5	4.7	2.4	3.2		
Lower Crooked River Valley								
	2600000	8	8	5	6	1	2H	Paved, high volume, high speed traffic, but not as many wildlife and vehicle collisions as in 97. Crosses LRMP antelope WR, deer and elk both cross the highway in this watershed.
	2700000	7	6	3	4	0	1H	Entire length is on private land, becomes Main Street Prineville, high incidence of residence and agricultural fields, high volume of traffic and speeds. There is a bald eagle nest within 1/2 mile of this road.
	5700000	5	5	5	3	3	M	Higher deer levels high traffic volumes, native veg. WA DPS sage grouse. High levels of rifle shooting and garbage dumping. Range handling facilities on this road.
	5710000	5	7	6	3	3	1H	Follows riparian habitat entire length, high deer and elk, high horse use - access Gray butte horse trail, rock outcropping special habitats, sage grouse.
	5720000	5	4	4	2	3	M	Seasonally closed, biological deer winter range, sage grouse.
	7960000	7	7	6	2	2	2H	Paved road, high traffic, parallels riparian zone, major poaching area, provides access to Skull Hollow Campground, unmapped movement corridor for big game, sage grouse.
	OR-126						N/A	Doesn't touch National Forest
	OR-27						N/A	Doesn't touch National Forest
	OR-380						N/A	Doesn't touch National Forest
Lower Crooked River Valley Tot		6.2	6.2	4.8	3.3	2.0		
Lower Metolius								
	6300000	7	8	6	2	5	2H	Extremely dense deer wintering area - deer winter range LRMP, High volume high speed, access Lake Billy Chinook Res. Very high recreational use, access several housing developments and dispersed dwellings. High levels of poaching, high OHV use. Facilitates effects in other watershed (not reflected in this score).

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	6310000	3	6	3	2	5	M	Deer winter range, adjacent to old growth juniper area. Road may not exist. Rate it as a low travel road. Near private land potential for woodcutting.
	6320000	4	5	3	2	3	M	Deer winter range - extremely heavy use, very bad road so light travel. Closed in the winter.
	6400000	6	7	6	7	4	2H	Paved road, high speed road, accesses three rivers residential area, high numbers of wintering deer. Provides access to three bald eagle nests.
	6500000	6	6	6	2	3	M	Seasonally closed road, concentrated deer winter use. Juniper and burned habitat. Poaching a problem in this area. Leads to private land. Adjacent to guzzler.
	6510000	6	6	6	2	3	M	Seasonally closed road, concentrated deer winter use. Juniper and burned habitat. Poaching a problem in this area. Leads to private land. Adjacent to guzzler.
	6520000	6	6	6	2	3	M	Seasonally closed road, concentrated deer winter use. Juniper and burned habitat. Poaching a problem in this area. Leads to private land. Adjacent to guzzler.
Lower Metolius Total		5.4	6.3	5.1	2.7	3.7		
Mud Springs Creek								
	5100000	6	7	5	5	1	1H	Bisects biological antelope WR, parts are located in an intermittent draw thus greater abundance big sage and juniper in an otherwise treeless environment. Section runs along the Monner springs drainage which has significant restoration investments and riparian habitat value. Good potential reintro or restoration area for WA DPS of western sage grouse.
	5130000	4	4	2	3	1	M	Adjacent to large tracks of private land, public lands have been reseeded to crested wheat grass therefore habitat diversity is low. Primary access points to east grasslands from Madras. WA DPS of western sage grouse. Touches edge of biological antelope WR. Runs alongside a guzzler.
	5160000	4	3	2	3	1	M	Adjacent to large tracks of private land, public lands have been reseeded to crested wheat grass therefore habitat diversity is low. Primary access points to east grasslands from Madras. WA DPS of western sage grouse. Touches edge of biological antelope WR. Accesses gravel pit.
	5200000	5	7	5	4	2	1H	Looks like this should be the 53 road. Parallels Mud Springs creek, high restoration investments (fence, burning, seeding, guzzlers) with objective to restore wet meadow complex and cottonwood gallery forest. Road impedes this objective. WA DPS western sage grouse and gray flycatcher. Heavy partying, poaching.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	5250000	5	7	5	4	2	1H	Parallels Mud Springs creek, high restoration investments (fence, burning, seeding, guzzlers) with objective to restore wet meadow complex and cottonwood gallery forest. Road impedes this objective. WA DPS western sage grouse and gray flycatcher. Heavy partying/ poaching.
	5920000	4	3	2	3	1	M	Adjacent to large tracks of private land, public lands have been reseeded to crested wheat grass therefore habitat diversity is low. Primary access points to east grasslands from Madras. WA DPS of western sage grouse. Touches edge of biological antelope WR.
	9700000	7	7	5	5	1	2H	Major US HWY, asphalt surface, major access to east side of grasslands, heavy antelope, deer, elk crossing and vehicle collisions including all other wildlife species. Goes thru DPS of WA popn of western sage grouse...occasional bald eagle winter foraging along roadside.
Mud Springs Creek Total		5.0	5.4	3.7	3.9	1.3		
Steelhead								
	5540000							
	6200000	6	7	4	2	5	1H	Very little public land, accesses Crooked River Ranch, high human use, a lot of poaching, trash dumping, borders ODF&W big horn sheep release area - effects would be drastically increased when sheep are released.
	9700000	7	7	5	5	1	2H	Major US HWY, asphalt surface, major access to east side of grasslands, heavy antelope, deer, elk crossing and vehicle collisions including all other wildlife species. Goes thru DPS of WA popn of western sage grouse...occasional bald eagle winter foraging along roadside.
	OR-126						N/A	Not near CRNG
	US-20						N/A	Not near CRNG
Steelhead Total		6.5	7.0	4.5	3.5	3.0		
Whychus								
	6360000	7	7	6	3	5	2H	Not on map as an analysis road. Seasonally closed accesses dispersed rec and Alder Springs trail. Crosses Squaw Creek (Shane's spot!) Best winter range in area. Poaching big problem. People violate road closure.
	6300000	7	8	6	2	5	2H	Extremely dense deer wintering area - deer winter range LRMP, High volume high speed, access Billy Chinook Res. Very high recreational use, access several housing developments and dispersed dwellings. High levels of poaching, high OHV use. Facilitates effects in other watershed (not reflected in this score).
	6370000	6	6	6	2	2	M	Half of road is obliterated. Rest is seasonally closed. Accesses best deer winter range. Poaching a problem. Squaw Creek Roadless area
	US-20						N/A	Not on CRNG in this watershed

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
Whychus Total		6.7	7.0	6.0	2.3	4.0		
Willow Creek								
	2150000	7	8	5	2	7	3H	Loop road, paved, high volume and speeds, very little public lands, heavily harvested in the past, snag deficient, public lands are old growth, goes along Allen Creek most of the way, high deer and elk numbers, numerous private dwellings scattered along here. Biological winter range in lower elevations.
	2600000	7	8	5	6	1	2H	Paved, high volume, high speed traffic, but not as many wildlife and vehicle collisions as HWY 97. Large portion parallels willow creek, several raptor nests along the highway. Crosses LRMP antelope WR, deer and elk both cross the highway in this watershed. Access to Rimrock spring and road, passes to within 200 yds of the only know burrowing owl nests (2) on the Grassland.
	2600828	1	4	1	1	0	M	Accesses parking lot, restroom, and trail head to Rimrock Sprg. Wildlife area, facilitates people dumping garbage and vandalizing facilities.
	2680000	1	3	1	1	1	L	Locked gate, no public access, Grassland field headquarters, very short road, a lot of fencing.
	2690000	6	6	5	5	5	M	Antelope winter, accesses large gravel pit, sage grouse, year round elk use, lot of wildlife habitat improvement in the area, traffic has a lot of heavy trucks, access to BPA power lines.
	5160000	4	3	2	3	1	M	Adjacent to large tracks of private land, public lands have been reseeded to crested wheat grass therefore habitat diversity is low. Primary access points to east grasslands from Madras. WA DPS of western sage grouse. Accesses gravel pit.
	5200000	5	4	5	4	2	M	WA DPS western sage grouse and gray flycatcher.
	5250000	5	6	5	4	2	M	WA DPS western sage grouse and gray flycatcher. Accesses LRMP Winter Range
	5300000	1	1	1	1	1	L	Not sure this is the correct road, It appears to be inside Madras city limits, all private land.
	5300153	2	4	3	3	1	M	Primarily noxious weed surrounding it, county dump near here. WA DPS western sage grouse
	5310000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	5320000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	5330000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	5340000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	5350000	2	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse. Jeep two track so it gets less vehicle use.

WATERSHED	ROAD	MIGRATION	SPECIAL HABITATS	FRAGMENTATION	TE&S	SNAGS/ DOWN LOGS	SUMMARY RATING	COMMENTS
	5400000	5	5	6	4	2	M	Heavy traffic goes to Rimrock Spring Wildlife Area, crosses Willow creek, antelope winter range, bisects several wildlife enhancement projects. WA DPS sage grouse.
	5500000	3	3	2	3	0	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	5700000	5	4	5	3	3	M	Higher deer levels high traffic volumes, native veg. WA DPS sage grouse.
	5750000	3	3	2	3	0	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	5760000	4	3	3	2	1	M	Past seeded to crested wheat grass however, natives are reestablishing, fair habitat diversity, antelope winter range, WA DPS western sage grouse.
	5920000	4	3	2	3	1	M	Adjacent to large tracks of private land, public lands have been reseeded to crested wheat grass therefore habitat diversity is low. Primary access points to east grasslands from Madras. WA DPS of western sage grouse.
	6600000	2	1	1	1	0	L	Crosses private, agricultural, and industrial lands, low habitat diversity, wildlife are acclimated to people in the area.
	6630000	6	5	3	5	1	M	Segment is entirely on private land in this watershed does cross willow creek. Creek is major travel area. Bald eagles hunt the shoreline in the area.
	7850000	5	6	6	4	1	M	Paved goes to BPA substation, moderate traffic, would access Cogentrix substation, crosses Willow creek, antelope winter range.
	8900000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	9600000	3	3	2	3	1	L	One old growth juniper area that was burnt off, antelope winter range, WA DPS western sage grouse.
	9610000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	9620000	3	3	2	3	1	L	Seeded to crested wheat grass, low habitat diversity, antelope winter range, WA DPS western sage grouse.
	9700000	7	7	5	5	1	2H	Major US HWY, asphalt surface, major access to east side of grasslands, heavy antelope, deer, elk crossing and vehicle collisions including all other wildlife species. Goes thru DPS of WA popn of western sage grouse...occasional bald eagle winter foraging along roadside.
Willow Creek Total		3.8	3.9	3.0	3.1	1.4		

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ROAD ANALYSIS

Code Definitions (Botany Assessment Table)

Field Heading

WATERSHED - 5th field watershed

ROAD - Road Number

Length - Length of road segment

Rating Factors


SPECIAL HABITATS - Special Habitats (wetlands, wet meadows, aspen)

TES Plants - Threatened and Endangered Plants

NOXIOUS WEEDS - Noxious Weeds (along road, high infestations sites)

SUMMARY RATING - Summary Rating - (L) Low, (M) Moderate, (H) High (1H means one element rated high, 2H means two elements rated high, etc.)

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ROAD ANALYSIS

BOTANY RISK ASSESSMENT

The objective of the Botany Assessment is to assess benefits, problems, and risks to botanical resources that are associated with the transportation system. The following risk factors were used to evaluate and compare different road segments and how they may be influencing native plant species and habitats.


KEY ISSUE A: Effects on Plant Habitats. The presence, type, and location of roads may affect special plant habitats.

To address Key Issue A, the following question was analyzed:

Key Question A1: How and where do roads affect special habitats?

Examples of potential impacts

Impact to plant species within special habitats and the overall condition of the plant communities that occur in special habitats is



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often directly related to many of the same physical attributes that will be evaluated in the aquatic risk rating. For example, wetland habitats may be impacted by increased sedimentation and changes in hydrologic function and water quality. A road may alter the function of a stream's floodplain and/or off-channel habitat by changing drainage patterns. Roads may intercept runoff, which can accelerate erosion and lower water tables, increase sediment loading and delivery of toxic pollutants, change plant species composition by introducing noxious weeds, and degrade water quality. A culvert that is not functioning properly (for e.g., the culvert is under-sized and the hydraulic capacity is exceeded) may increase sediment into wetlands and streams. In some areas, productive wetlands have been converted to compacted road surfaces. Many of these habitats have had fill placed on top of existing habitat as roads are built through them. Road failures in landslide terrain can impact special habitats. The resulting changes in drainage patterns, soil composition, and introduction of noxious weeds from roadside shoulders may cumulatively result in significant alteration of the existing plant communities. Of these effects, those that affect the areas ability to receive, store and move water will likely have the greatest impact on a wetland's condition and function.

As with special habitats, the impacts to riparian plant communities often tie directly to the criteria that are used in the aquatic risk ratings. If the road segment has a high aquatic risk rating, the riparian plant community is likely to be impacted by the same factors, resulting in a high botany risk rating. Roads often intersect riparian areas and can cause changes in hydrologic function and water quality. Roads intercept runoff that can accelerate erosion and lower water tables. Bank erosion can cause an associated loss of bank vegetation. A road segment may alter the function of a stream's floodplain and/or off-channel habitat, therefore impacting riparian and floodplain-related plant communities. Roads may constrain and divert both surface and subsurface flows that support the water table, potentially causing changes in species composition or altered vigor of riparian plants. Roads facilitate the establishment and spread of noxious weeds, resulting in changes in plant species composition.

Other impacts could occur due to increased public access. There may be increased collecting of unique plant species that occur within special habitats. Roads may facilitate the use of off-highway vehicles into adjacent special habitats. High-use recreation areas, both dispersed and developed sites, may impact special habitats, such as wetlands and riparian areas. Recreation use also affects riparian plant communities. Therefore, the Recreation Risk Rating might also be used to evaluate potential impacts to riparian habitats. Roads may provide access for off-highway vehicles into riparian habitats. Dispersed and develop recreation can impact the health and vigor of riparian plants, depending on the level of reaction use.

Roads facilitate the establishment and spread of noxious weeds, which impact native plant communities. Areas scheduled for road reconstruction, as well as on-going maintenance activities, have a high risk of introducing and spreading noxious weeds, which can alter species composition and associated wildlife use within habitats such as meadows.

Analysis Procedure

Special habitats considered in this analysis are defined as **wetlands** (i.e., ponds, bogs, swamps), **wet, moist and dry meadows, aspen stands, cottonwood bottomlands, and scablands**.

Plant associations for both the Deschutes and Ochoco National Forests were reviewed, and those plant associations that fit the above definition of special habitat were selected. Originally, the electronic data summary did not include scablands; these areas were added with hindsight because they are extremely fragile, with shallow clay soils, and have extremely diverse vegetation. Any road built in these areas becomes a permanent road due to impacts. The scablands also are very important because roads built across these areas can cause sediment loading into riparian areas.

Plant association GIS layers and associated data tables were queried for both the Deschutes and Ochoco National Forests, and a wetland GIS layer was queried for the Deschutes National Forest. Any of the desired plant associations that occurred within 200 feet of roads within this analysis area were identified in the analysis and buffered by 200 feet to determine relative miles of road that intersect these special habitats. The resulting data table provided information on the number of miles of special habitat that the road segment passes through. Unfortunately, many special habitats were not mapped and the analysis relied heavily upon knowledge of district botanists and ecologists.

Assumptions

- Many small special habitats are not mapped and information will be lacking for these areas.

Risk Factors to Evaluate Issue A1

0 = NO RISK -- There are no special habitats found along the road segment.

1-3 = LOW RISK -- One or more special habitats occur(s) along the road segment, but it occupies a relatively small area along the road and/or the special habitat is not considered at risk because of one or a combination of the following factors:

- The special habitat is unique **but relatively common** in the watershed so that concern about road effects is reduced.
- **Noxious weeds** are currently not present, therefore, risk to the special habitat is low. The road segment is far enough away from high density weed infestations to reduce the risk of noxious weed spread and establishment.
- The **special habitat occupies a small area** relative to overall road length. The habitat may have some impacts, but these impacts are relatively localized and small in scope.
- The **road segment crosses through or near a very small portion** of the special habitat.

- **The risk rating for aquatics is low.** For wetland habitats, road design characteristics are providing for the uninterrupted movement of surface and groundwater necessary to support the wetland's vegetation and soil characteristics. Potential landslides and road failures, which can greatly increase sediment loading into adjacent habitats, are not expected to occur.
- **The risk rating for recreation is low.** Dispersed and developed recreation use is low or non-existent.

4-6 = MODERATE RISK -- One or more special habitats occur along the road segment and there is a slightly elevated concern about the future of this (these) habitats because of a combination of factors:

- **Noxious weeds** are not known to occur within the special habitat, but occur either along the road segment OR occur along roads feeding into this road. Therefore, there is an elevated concern that the special habitat may be at risk from noxious weeds.
- **The risk rating for aquatics is moderate.** For wetland habitats, there is increased sediment loading, which is likely decreasing the saturation of wetlands and moist meadows. Delivery of fine sediment from natural landslides is considered moderate within a few hundred feet of perennial streams. Slope failure has a moderate probability of occurrence (25-50%) with normal (proper) road design.
- **The risk rating for recreation is moderate.** Dispersed and developed recreation use is occurring, and it is of some concern. However, it is rated moderate relative to other areas where concerns are greater.
- The **special habitat occupies a relatively large area** along the road segment.
- The road segment contains a **diversity of special habitats** (e. g., moist meadow, aspen, scablands). The concern is elevated due to this increased diversity.
- Road segment travels through a **relatively significant portion** of the special habitat.

7-9 = HIGH RISK -- One or more special habitats occur along the road segment and there is a elevated concern about the future of this (these) habitats because of one or a combination of the following factors:

- The **special habitat is rare** (i.e., rarely occurs in central Oregon); and, therefore, should be maintained for overall biodiversity and ecosystem health.
- **Noxious weeds** are present along the road segment that crosses or parallels the special habitat. Noxious weeds are known to exist within the special habitat and are considered "high risk" species (therefore, the Noxious Weed Risk Rating is High).
- **The risk rating for aquatics is high.** For wetland habitats, the road impacts the movement of surface and groundwater necessary to support the wetland's vegetation and soil characteristics. The road's location and design have displaced or degraded the wetland's size and function. Runoff is being

delivered directly to the wetland, increasing sediment and contaminant loadings. Crossings of surface and near surface water paths have severely limited the volume, timing and distribution of water necessary to saturate the landform and support the wetland's vegetation and soil characteristics. Potential landslides and road failures, which can greatly increase sediment loading into adjacent habitats, are at high risk.

- **The risk rating for recreation is high.** The area receives an abundance of dispersed and/or developed recreation use to the point at which habitat degradation is likely to be occurring or is known to occur. Dispersed and developed recreational use of the special habitat is high and causing habitat degradation, such as soil compaction and vegetation trampling.
- The road segment travels through a **relatively significant portion** of the special habitat. The road may parallel the special habitat or travel through it to the point where it is likely that road impacts may be occurring.
- There are or may be **cumulative impacts** to the special habitat due to a variety of different recreational uses (e.g., the area is used by bicyclists, off-highway vehicles, horses, hikers, campers, etc.).

Key ISSUE B. TES Plant Species: The presence, type, and location of roads may affect threatened, endangered, or sensitive plant species and other plant species of concern.

Key Question B1: How and where do roads affect TES plant species

Examples of potential impacts

Threatened, Endangered, and Sensitive plant habitats often occur in special habitats, such as moist or wet meadows, wetlands, or riparian habitats. Roads can impact these types of habitats by the same factors discussed above (see Examples of potential impacts for Special Habitats).

Other impacts could occur due to increased public access and recreational use. There may be increased collecting of sensitive plant species that occur within sensitive plant habitats (e.g., flower picking is a threat for the Newberry gentian, *Gentiana newberryi*, in popular campsites). Roads may facilitate the use of off-highway vehicles into sensitive plant habitats. High-use recreation areas, both dispersed and developed sites, may impact sensitive plant habitats, by trampling vegetation, compacting soils, and introducing noxious weeds. Some sensitive plant species, such as the green-tinged paintbrush (*Castilleja chlorotica*) depend on a host plant; if high recreation use impacts the host plant, then indirect impacts can occur to the sensitive plant.

Analysis Procedure

The sensitive plant GIS layer was overlain with the roads evaluated in this analysis. Sensitive plant populations were buffered by 200 feet; any roads that intersect the resulting polygon were identified. If a sensitive plant occurs within a special habitat (e.g., wetland), then the Aquatic Risk Rating for wetlands would also be considered in the analysis. Potential habitat is not addressed in this analysis because it is not mapped.

Assumptions

- TES plant populations are not always in the exact same locations. Individuals increase, decrease, and colonize new areas. Therefore, locations of TES plants in this analysis may change in the future.

Risk Factors to Evaluate Issue B

0 = NO RISK -- There are no TES plant populations along the road segment.

1-3 = LOW RISK -- One or more TES plant populations occurs along the road segment, but there is a low concern for the population because of one or a combination of the following factors:

- The **population occupies a relatively small area** along the road and individuals and their associated habitat are considered to be in good condition and not at risk
- The **majority of known populations in other locations are protected** and, therefore, there are no long-term viability concerns for the species.
- The **TES plant habitat is not being degraded or directly impacted by the road** and its associated use and maintenance (i.e., the Aquatic Risk Rating for wetlands is Low).
- **Low recreation use** occurs along the road segment.
- The area has not been surveyed for TES plants and there is some possibility and low-level concern that **TES plant populations may occur** along the road segment.
- **Noxious weeds** either do not occur along the road or low-risk species (e.g. bull thistle) occur; therefore, there is a low risk to the TES plant population(s) from noxious weeds.

4-6 = MODERATE RISK -- One or more TES plant populations occurs along the road segment and there is a slightly elevated concern about the future of the population(s) because of a one or a combination of following factors:

- **The TES plant population occurs in a wetland habitat and the Aquatic Risk Rating is moderate.** For example, The Aquatic Risk Rating for the road segment indicates that fine sediment loading may be occurring or the floodplain is not functioning properly.
- **The TES plant population is a "protected" population** in a Conservation Strategy and/or the population is considered

important genetically for maintaining long-term viability of the species. However, the road is not necessarily degrading the habitat. There is a higher concern than low because it is an important population, but not enough to warrant a high risk rating.

- The TES plant population occurs in a **special habitat that received a moderate Aquatic Risk Rating**. For example, there may be a TES plant population in a riparian area below a road, but the design of the road is such that a timbered buffer exists between the road and the riparian area that filters sediments and reduces the risk.
- The **Recreation Risk Rating is Low or Moderate**. There is a slightly elevated concern about an existing TES plant population, but either the design of the road limits recreation use (e.g., steep slope between the road and creek where TES plants occur) so that the risk rating is not high **OR** the road is allowing access to the plant population or it's habitat only to a moderate degree.
- **Noxious Weed Risk Rating is Moderate**.
- Some level of **habitat degradation** is occurring that can be attributed to the road, but not enough to be considered at high risk.

7-9 = HIGH RISK -- One or more TES plant populations occurs within 200 feet of the road segment and there is an elevated concern about the future of the population(s) because of one or a combination of the following factors:

- **Each TES plant population is considered important** to maintain the long-term viability of the species. There may be several factors that contribute to this determination. For example, there may be a low number of known populations for the species, or the majority of known sites are at risk.
- The TES plant population occurs in a special habitat, such as a wetland, that is at high risk due to the road (i.e., the **Risk Rating for Aquatics is High**).
- The **Recreation Risk Rating is High**. High recreation use occurs. There are or may be **cumulative impacts** to the TES plant habitat due to a variety of different recreational uses (e.g., the area is used by bicyclists, off-highway vehicles, horses, hikers, campers, etc.)
- The TES plant population is a **"protected" population** in a Conservation Strategy and/or the population is considered important genetically for maintaining long-term viability of the species, and there are impacts occurring or likely to occur due to the road.
- **High risk noxious weed species** exist along the road segment or close enough to be of high concern.
- The **TES plant populations are small, fragmented, and vulnerable to habitat loss** that may be occurring due to a combination of factors that can be linked to roads, such as noxious weeds, high recreation use, high road density, etc.

KEY ISSUE C. Noxious Weeds: Roads facilitate the establishment and spread of noxious weeds and non-native invasive plant species.

To address Key Issue C, the following question is analyzed:

1. Key Question C1: How and where do roads and their use contribute to the spread of noxious weeds?

Examples of potential impacts

Noxious weeds can reduce ecological values by displacing native vegetation, increasing soil erosion, reducing forage for wildlife and livestock, and degrading recreational values. Road maintenance has the ability to increase the establishment and spread of noxious weeds by moving the seed and/or propagules along the road prism, introducing infected aggregate or providing a vector for infected vehicles/equipment to transport seed.

- roads directly encourage and cause the establishment and spread of noxious weeds.
- effects may be measured as a relative comparison of risk of introducing or spreading weeds; risk it to the native plant communities adjacent to the road segment.
- Weed Prevention Practices (BMP's) can reduce the risk.
- all road segments are at risk of being invaded by noxious weeds, particularly spotted and diffuse knapweeds and St. John'swort.
- doesn't matter if it's 1 or 2 miles from a weed population - seeds can be spread even by low or intermittent use of a road.
- the risk is alleviated by annual inventories (sophisticated search & destroy), and BMP's.
- describe prevention measures (BMP's, annual inventory & treatment,) in this section and refer below simply as "prevention measures".
- **volume of traffic and proximity to large weed population centers can elevate the risk.**

Analysis Procedure

The noxious weed GIS layer was overlain with the roads evaluated in this analysis. Noxious weed mapped sites were buffered by 200 feet; any roads that intersect the resulting polygon were identified.

Assumptions

- All roads have a high risk of facilitating the spread and establishment of noxious weeds.
- Due to limited budgets, inventory and mapping of noxious weeds is limited and not keeping up with the rapid rate of spread of noxious weeds. As a result, existing noxious weed sites were

missing in the electronic analysis; therefore, the noxious weed analysis relied heavily upon the knowledge of district botanists and ecologists.

- Noxious Weed Risk can be reduced by:
 - Annual inventory and treatment (i.e., early detection and treatment).
 - Following Best Management Practices for road maintenance and projects that occur along or near roads.

Risk Factors to Evaluate Issue C

0 = NO RISK -- All roads in this scale/level of analysis are at risk of being invaded by noxious weeds. Therefore, there is never a "no risk" situation.

1-3 = LOW RISK -- The risk is determined relatively low due to one or a combination of the following factors:

- The road segment is **relatively far away from large infestation areas** (e.g., cities of Bend, Sisters, Redmond, LaPine; Highway 97, etc.).
- The **species** along the road segment or closest to the road segment is of relatively **low risk** (e.g., bull thistle).
- **Recreation use and overall traffic is low or limited seasonally** (e.g. spring chanterelle mushroom hunting) such that there is a relatively lower risk of weeds spreading and becoming established.
- A **relatively small noxious weed infestation** occurs along the road and it is **fairly stable and contained**, and not expected to spread (assuming that yearly treatment continues).
- There **exists low or limited potential habitat** for the noxious weed species; therefore the population is not expected to expand it's size and range along the road segment.

4-6 = MODERATE RISK -- The risk is determined to be moderate due to one or a combination of the following factors:

- Weeds occur along the road segment, but the **population is reduced and considered contained** due to years of treatment. (However, this road segment could become a high risk if a year of treatment is skipped due to lack of funding and personnel).
- **Medium traffic flow** occurs along the road segment.
- **Weeds do not occur along the road segment, but high risk species** are established on road(s) feeding into this road.
- The area has not been surveyed and the risk is not known. However, the area has received a **high amount of ground disturbance** and contains private lands which have not been surveyed and are assumed to be uncontrolled or it is known that the **private land noxious weed populations are not being treated**. There is moderate concern that noxious weeds exist in the area and will spread along the road system.

7-9 = HIGH RISK -- The risk is determined to be high due to one or a combination of the following factors:

- **High risk noxious weed species** occur along the road segment. Examples include spotted and diffuse knapweeds, Canada thistle, leafy spurge, yellow star thistle, medusahead, and houndstongue.
- Road segment may not have weeds, but is located **relatively close to high infestation** areas; therefore it is likely that weeds will spread into this road segment.
- **Recreation use is high.**
- **High traffic flow.** The road is a major arterial road that has a higher risk of spreading weeds.
- The road segment travels through an area that has a **high fire risk in combination with a high risk weed problem**. If the area does burn, weeds will spread rapidly along the roads.
- **Existing populations, use, and previous disturbance.**
- The area has not been surveyed and the risk is not known. However, the area has received a **high amount of ground disturbance** and contains private lands which have not been surveyed and are assumed to be uncontrolled or it is known that the **private land noxious weed populations are not being treated**, and contains **high risk noxious weed species**. There is high concern that noxious weeds exist in the area and will spread along the road system.

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WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
Bear Creek	1600000	9.97	4	1	4	M	Aspen (common), moist meadow. Riparian weed risk.	Surveys unknown, low probability.	Diffuse knapweed, Canada thistle, Sulfur cinquefoil. Weeds present, but being treated.	Crosses 4 perennial streams and 3 intermittent streams. In Mowries, south side - contours along slope and intercepts 7 streams. Probably in rel. steep terrain.
	1610000	0.00	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present or near, being treated.	Only about 50 ft. in watershed and on top of ridge.
	1640000	3.39	4	1	4	M	Moist meadow, willow. Riparian weed risk.	Surveys unknown, low probability.	Diffuse knapweed, Canada thistle. Weeds treated.	Parallels Koochman Creek for about 2.5 miles.
	1680000	0.18	0	1	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present or near, being treated.	Top of ridge.
	1700000	4.55	2	1	4	M	Willow (common). Riparian weed risk.	Surveys unknown, low probability.	Weeds present or near, being treated.	Parallels Faught Creek for about 3 miles. Native surfaced. Road goes to Antelope Reservoir. Crosses Bear Creek.
	1700600	0.66	0	1	4	M	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	Weeds present or near, being treated.	Campground? Goes to Antelope reservoir.
	1750000	13.28	0	1	4	M	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	Canada thistle; med sage. Weeds present or near, being treated.	Off the top of ridge at top of watershed. Lot on south side of ridge, occasionally crosses ridge. 4 intermittents; native surfaced.
	CRO-111	18.13	4	1	7	1H	Riparian weed risk.	Surveys unknown, low probability.	High traffic.	
	CRO-127A	0.69	4	0	7	1H	Riparian weed risk.	No TES plants mapped within 200 ft. of road.	High traffic.	
	CRO-134	1.80	4	1	7	1H	Riparian weed risk.	Surveys unknown, low probability.	High traffic.	Parallels Salt Creek; paved.
	CRO-226	6.16	4	1	7	1H	Riparian weed risk.	Surveys unknown, low probability.	High traffic.	Paved; follows Little Bear Creek; crosses numerous intermittent tribs.
	CRO-325	2.00	4	1	4	M	Riparian weed risk.	Surveys unknown, low probability.	Weeds present or near, being treated.	
OR-27	18.51	4	1	7	1H	Riparian weed risk.	Surveys unknown, low probability.	High traffic.	Parallels Bear Creek, crosses it 2X; Paved.	
Bear Creek Total		79.34								
Bear Creek (Bridge)	2600000	1.64	1	2	2	L	Could be some springs along here.	Potential <i>Botrychium</i> in springs.	Knapweed.	Paved; Paralells Helfin Creek for 1.5 miles; crosses 2 intermittents.
	2700000	4.68	2	2	7(3)	1H; L	Dry, moist, & wet meadows, aspen, at least 1 cottonwood.	Low risk - habitat not being impacted by road. Lower part potential for <i>Calochortus</i> .	Spotted knapweed, Canada thistle. 7 for paved portion; 3 for native surface.	8 segments (goes in/out watershed); part paved, part native surface.
	2730000	12.89	1	1	6	M	No special habitats mapped within 200 ft. of road, but aspen likely to occur.	No TES plants within 200 ft. of road. Potential <i>Cypripedium parviflorum</i> .	Canada thistle, sulfur cinquefoil, diffuse knapweed. Heavier traffic; several weed infestations being treated.	Gravelled, midslope road; crosses Bear Creek and approx. 12 smaller streams & intermittent creeks.
	2730250	4.00	1	0	3	L	Wet meadow.	No TES plants mapped within 200 ft. of road.	Unknown.	Can't find on map; hits 1 wetland.
	2735000	9.73	1	1	6	M	No special habitats mapped within 200 ft. of road, but aspen likely.	No TES plants within 200 ft. of road. Potential <i>Cypripedium parviflorum</i> .	Diffuse & spotted knapweed, Canada thistle, St. Johnswort, sulfur cinquefoil. Heavier traffic; several weed infestations being treated.	Follows N. Fork Bear Creek; lots switchbacks;parallels Bear Creek.
	2745000	0.27	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Top of ridge; small segment.
	2750000	0.70	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Diffuse knapweed, Canada thistle.	Midslope, crosses Grant, Scotty & Rail Creeks. Gravelled.
Bear Creek (Bridge) Total		33.92								
Bridge Creek	2200000	6.13	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Parallels Johnson Creek; Native surface, main road. Private?
	2210000	9.98	2	2	9	1H	Dry meadow; Occupies small area.	No TES plants mapped within 200 ft. of road. Low risk; any plant habitat not being degraded.	Large houndstontue population. Close to high infestation areas on private land.	Follows the west branch of Bridge Creek; crosses creeks; Old Mitchell Hwy (used to be 26).
	2600000	11.62	1	2	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	0.05 CYOF	Paved; Crosses 1 intermittent trib; parallels west branch of Bridge Creek. .1 mi. FS in Watershed.
	2630000	3.62	2	2	5	M	Don't know - maybe Dunn Spring Lake is a lodgepole bog? At least a meadow. Low risk - road segment crosses thru small portion.	Not been surveyed for TES plants. Habitat not being degraded or directly impacted by road.	Houndstongue; Canada thistle; Treated w/ herbicide; reduced to a few plants. Additional plants further down adjacent road.	Top of watershed; crosses Dunn Spring Lake (filled in meadow?) and the upper end Bridge Creek. Native surfaced.
Bridge Creek Total		31.34								
Camp Creek	1600000	5.87	2	1	4	M	Aspen; dry & moist meadow. Weed risk.	Surveys unknown, low probability.	Diffuse & spotted knapweed, Canada thistle, Med sage; being treated.	Wetlands. Midslope road, crosses Double Cabin, Wiley Ck. Gravelled.
	1670000	6.25	1	1	4	M	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	Whitetop, diffuse & spotted knapweed, Canada thistle; being treated.	Crosses 3 intermittent tribs.
	1750000	1.24	0	1	4	M	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	Weeds present or near, being treated.	Top of ridge.
	1760000	0.15	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present or near, being treated.	Native surfaced, no trib crossings, midslope for a mile.
	CRO-127	11.66	4	1	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	High traffic.	Parallels Camp Creek, paved.
	CRO-127A	15.45	4	1	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	High traffic.	
	CRO-217	3.30	4	1	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	High traffic.	Parallels Indian Creek; crosses Indian & W. Fk. Camp Creek.

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	OR-380	0.64	1	0	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	High traffic.	Paulina hwy. Goes from Prineville to Paulina.
Camp Creek Total		44.56								
Crooked River Grasslands	3500000	2.57	0	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Spotted knapweed & maybe other species. High traffic; being treated.	Paved.
	5480000	3.10	Don't know	0	Don't know		No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		No stream crossings. Native surface.
	5700000	3.32	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Spotted knapweed along at least a portion of road. Moderate traffic, being treated.	Skull Hollow Rd. -- major recreation (mt. Biking, ATV, muddbogging, weed risk).
	5720000	1.65	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	weeds in area, closed in winter	Could not find on map.
	5730000	1.95	1	0	1	L	Cottonwood-Willow. Low traffic	No TES plants mapped within 200 ft. of road.	weeds in area, closed in winter	
	5740000	0.32	1	0	7	1H	No special habitats within 200 ft. of road. Possible cultural plants	No TES plants mapped within 200 ft. of road.	high traffic, weeds being treated	Could not find on map.
	5770000	1.50	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Medusahead nearby. Moderate traffic.	Crosses 2 intermittent tribs. Just south of Haystack Butte.
	6000000	7.00	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Probably not many weeds but high traffic. Some weeds are being treated.	Paved. Parallels the highway after cross Crooked River Bridge.
	6010000	0.59	1	0	2	L	Spring occurs just south of this road. Lombardy poplar. Fenced and probably old homestead.	No TES plants mapped within 200 ft. of road.	Infestations being treated; light traffic.	Paved; From 60 Rd. over to Haystack Reservoir.
	6080000	3.32	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Moderate to high traffic.	Paved; 1 intermittent trib. Crosses. Just south of proposed Haystack Butte RNA.
	6100000	6.00	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No known infestations but high traffic.	Paved; crosses 1 intermittent trib. Back road to Culver around south side Juniper Butte.
	6110000	2.77	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Residential traffic.	Paved; crosses 1 intermittent trib. All private land.
	6120000	2.82	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Residential traffic.	Paved; crosses 1 intermittent trib. Road to Opal Springs.
	6200000	6.96	0	0	8	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Lot weeds, some being treated; high traffic.	Road that goes through Crooked River Ranch.
	6300000	5.25	1	1	8	1H	Lake or Pond? BLM ACEC, RNA, and The Island type habitats. Because Island closed to public use, low risk rating due to road.	BLM ACEC, <i>Texasporium sancti-jacobi</i> . Very little use but some weeds present in the area.	High traffic, spotted knapweed & medusahead.	Paved. Rd. crosses Lake Billy Chinook; goes through Cover Palisades State Park and continues to Sisters RD.
	6700000	0.60	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	none known, some traffic	Road to Haystack Reservoir?. Could not find on any maps.
	7210000	1.80	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	none known, some traffic	
7260000	1.80	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	none known, some traffic		
7290000	3.00	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	none known, some traffic		
9700000	11.82	0	0	8	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	High traffic, spotted knapweed & medusahead. Not 9 because weeds are sprayed.	Paved.	
Crooked River Grasslands Total		68.14								
Deep Creek	1200000	12.89	5	7(6)	3	1H; M	Dry meadow; moist meadow; aspen (1 of biggest stands on district); Rd. goes through moist meadow.	Calochortus (CALLOP) protected population & BOTCRE; 2 miles concentrated TES plant habitat along southern part of Rd. 12. Road parallels CALLOP population for 2 miles, Canada thistle population along road (weed risk). Calochortus in aspen.	Canada thistle small site.	Appears to be mostly ridgetop road but from habitat standpoint TES - drainages are not steep but are moist, broad plains over picture gorge basalts, very shallow soils. Almost entire road aggregate; goes to paved at head of watershed (about 1.5 mi. paved). Aspen stand needs culvert replaced. Deep Creek - lot dispersed recreation.
	1250000	0.63	1	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	High use hunting season.	Ridgetop about .5 mi. section, then drops out of watershed. Dry meadows occur on ridgetop.
	2630000	6.21	2	5	2	M	Dry & moist meadows.	CALLOP; Important population - in upper reaches of watershed & will likely move downstream; both pops are protected in draft Conservation Strategy. Road is elevated above the habitat so are having runoff into the meadows.	Far away from population, low recreation, but huge knapweed population off Forest along Rd. 12 rd.	Ridgetop crosses Double Corral and Happy Camp Cks. Low recreation use. Summit historic trail.

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	3000000	8.28	6	2	4	M	Moist meadow, scablands (intermittent along rd), aspen stand parallel to road.	CALLOP; small population; not protected in CS; no weeds around it;	Spotted knapweed, treated yearly & declining. 743 Rd. has a large population of spotted knapweed and feeds into this road. About 5 mi. from Calochortus. High traffic.	Crosses W. & E. Forks of Crazy Creek; Happy Camp Creek, and Double Corral Creek, along with 5 intermittent tribs. Appears to be midslope. Gravelled.
	4200000	5.63	2	7	8	2H	Alder wetland (where 42 road connects with 4250). Roads come together where creeks come together. Potential for houndstongue within alder wetland. Low rating because < 2% of road length within watershed is at risk.	CALLOP;_7 because estimate 3 mi. of the 6 mi. within the watershed have Calochortus. Protected population along Buck Hollow Ck. Aquatics rated floodplain function as 5 (moderate), so elevated concern. High weed risk; weeds within TES plant population. Canada thistle is contained (very small, localized that are stable); but houndstongue is an increasing population. Rest of road (50%) no concerns, but 50% high concern.	Variety of weed species, including spotted knapweed, Canada thistle, houndstongue, St. Johnswort, whitetop & Russian thistle. Houndstongue increasing & potential to get into alder wetland. Whitetop increasing, manually treated.	Multiple segments; either paved or gravelled. Paved portion parallels Deep Creek for lower 1 1/2 miles; then heads up and parallels Buck Hollow Creek, then essentially ridgetop coming in and out of watershed. Most paved. Rd. in good shape, mostly along ridgetop.
	4250000	15.19	7	7	6	2H	Moist & wet meadows, alder wetland. Alder habitat follows the length of Deep Ck. & into Jackson Ck. Fairly minor moist meadow sites. 7 because noxious weeds present within special habitats; risk rating for aquatics for floodplain function is high (7); high recreation use (dispersed). Population of rare willow (rare for Ochoco) only 2 populations known for Forest -- <i>Salix drummondiana</i> .	BOTCRE, CALLOP; 7 because <i>Calochortus</i> occurs within special habitat, which has a high aquatic rating. Not protected in Conservation Strategy. High recreation use; <i>Calochortus</i> along > 50% of road. <i>Botrychium</i> occurs at north end of road, where several springs, boggy wetlands.	Spotted knapweed, Canada thistle, houndstongue, sulfur cinquefoil; 6 because several species; treat road yearly, populations are declining, but risk still there.	Essentially on the creek. Parallels Deep Creek the rest of the way in the drainage from where leaves 42 almost to headwaters of Deep creek. Crosses Jackson Creek, Toggle, Ck., Happy Camp Ck., and 1 crossing of Deep Creek. Gravelled entire way.
	4254000	4.30	4	4	6	M	Wet meadow, alder wetland. 4 because there is alder habitat along the west portion of road (1.5 miles) along Little Summit Creek and have various small wet meadows. Noxious weeds not in habitats but are along road; Aquatics rating moderate.	BOTCRE, CALLOP; Much of road parallels but is above creek; reduces risk.	Diffuse knapweed, Canada thistle, sulfur cinquefoil, dal. toadflax. Not included in EA; manual treat when and where can; several populations declining (LINDAL), but fairly well traveled road.	To west of Little Summit Prairie, parallels Little Summit Creek, crosses 4 tribs. Midslope road; creek below road, runs parallel to creek, which makes risk lower because buffer to filter out sediments; steep so no recreation.
	4256000	2.30	5	6	4	M	Alder wetland; alder actually goes about a mile where really steep. Steep canyon and road goes right up the creek. Aquatics ratings moderate. Road parallels special habitat.	CALLOP; 6 because road parallels habitat (vs. just crossing through); aquatics ratings moderate; not ranked high because relatively for watershed - pops along that road are small but disjunct (therefore, high end of moderate).	No known noxious weed sites, but gets 4 because population of spotted knapweed on 743 rd. ties in with 4256. Risk there to feed into the 4256.	Parallels Happy Camp Creek for entire road segment length. Native surface, crosses 3 intermittents.
	4258000	3.90	3	4	2	M	Wet meadow. No weeds, recreation risk low.	CALLOP; Not protected population in draft Conservation Strategy. Road is perpendicular to the population (crosses it rather than paralleling it). No noxious weeds. Moderate aquatic risk rating.	Don't have weeds along road, however, do have weeds along Rd. 12 which 4258 runs into, but far enough away to stay in low rating.	Parallels for the 1st 1.5 miles Toggle Creek. Native surfaced.
	4260000	0.91	2	4	3	M	Dry-moist meadow. Well travelled. Flat.	CALLOP; 4 because part of Buck Hollow (protected) population; otherwise would have been low because where road intersects it is flat, has low aquatics rating, not much risk. Elevated to moderate because protected population in Conservation Strategy.	Only .1 mile road segment. But 3 because of high risk species that are along Rd. 42.	No stream crossings. Aggregate, starts adjacent to Buck Hollow Creek, then heads uphill, so fine sediment probably runs down into Buckhollow Creek. Road is intersection with 42 rd.

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	4270000	8.90	6	8	7	2H	Dry, moist, & wet meadow; lots of scablands (1/3 of road occurs on scabs and they grade in and out from scablands to dry meadows), several aspen stands. No weeds in special habitats, but in road prism. Traffic seasonally high; developed recreation site. Aquatics ratings moderate, amount traffic, amount of scabland (fragile area), fact that road in scablands is flat and easily go off-road.	BOTCRE, CALLOP; For about 1 1/4 miles, have large population of Calochortus that is protected under draft Conservation Strategy that is adjacent to Little Summit Prairie. Have huge meadow system that varies from wet to moist to dry to scab by the undulations. Populations go hand in hand with special habitats. Flow effects is a 4. Important Calochortus center (main population).	Diffuse & spotted knapweed, Canada thistle, St. Johnswort, sulfur cinquefoil. 7 because numerous high risk species well established. High traffic. Developed rec site along road gets high use during hunting season. Not higher than 7 because populations fairly small, do manual when can, populations stable for now but at risk.	Crosses Little Summit, Thornton Creeks, and 7 intermittent tribs, passes close to Little Summit Prairie; midslope, looks like contours slope. Aggregate.
	4272000	4.20	4	7	3	1H	Wet meadow; 4 because one Canada thistle population (therefore bumped up from low); fine sediment & floodplain functios are moderate; however, amount of special habitat is very small and fact that Canada thistle is either extremely small or gone (lower risk).	BOTCRE, CALLOP; According to Ochoco map, about 80% of road has Calochortus. Not a protected population. Road next to creek for long distance and parallels Calochortus population.	Canada thistle at intersection; eradicated? Population basically contained and stable; road doesn't feed into any high population weed centers.	Parallels West Fork Thornton Creek; Gravelled. 90% of road segment along creek, crosses 1 intermittent stream. Crosses West Thornton once.
	4274000	4.80	4	7	5	1H	Round Meadow (moist meadow). Weed risk.	BOTCRE, CALLOP; 80% Calochortus along road segment. Weeds, road parallels population.	Spotted knapweed (by Botrychium site, fairly small & contained); Canada thistle (3 populations, fairly small& contained).	Parallels Thornton Creek for whole length of road segment; crosses creek once. Aggregate.
	4276000	2.44	3	5	4	M	Dry meadow; alder wetland. Junction of 4276/4270 is riparian (wet boggy creek with alder). Degraded area; culvert needs to be replaced. High use dispersed recreation site (actually on 4270 where roads come together).	CALLOP (protected population in draft Conservation Strategy occurs right at junction of 4270/4276). 2.5 mi. road with only .3 Calochortus. Degraded condition at culvert and recreation concerns.	Canada thistle in the middle of the road, may not be there anymore. Small infestation that is relatively stable and in habitat where low potential for spread (very dry).	Crosses Little Summit Creek at head of Little Summit Prairie.
Deep Creek Total		80.58								
Deschutes South	2600000	3.21	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Diffuse knapweed, being treated. All pvt land.	State Highway, crosses numerous intermittent tribs.
	3500000	0.58	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated	North of Cove Palisades. Paved.
	5500000	4.01	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Whitetop, spotted knapweed, bull thistle. Moderate traffic.	Gravel, flat. From Hwy 26 to Hwy 97 in Crooked River Grassland.
	5600000	1.95	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated.	
	5740000	0.43	1	0	7	1H	possible cultural plants	No TES plants mapped within 200 ft. of road.	High traffic, weeds being treated	South of Haystack Reservoir. Barely in this watershed. Couple intermittent tribs.
	5750000	0.44	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated	South of Haystack Reservoir. Barely in this watershed. Couple intermittent tribs.
	6010000	1.02	1	0	2	L	Osborne spring	No TES plants mapped within 200 ft. of road.	Weeds present, being treated, moderate traffic	Native surface, goes to Haystack Reservoir.
	6080000	1.43	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Bull thistle; being treated, moderate traffic. Norris Ln.	Crosses an intermittent trib to Haystack Reservoir.
	6600000	5.75	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated	Southwest of Madras, no streams.
	6610000	2.00	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated Near Round Butte	
	6620000	5.25	1	0	2	L	dry portion of willow cr	No TES plants mapped within 200 ft. of road.	Weeds present, being treated Belmont Dr	
	6630000	3.80	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No weeds moderate traffic. Elk Dr. All PVT.	West of Madras. Crosses 1 intermittent trib.
	6670000	1.38	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated. High traffic. Mt View Dr.	West of Madras. Crosses 3 intermittent tribs, paved.
	8900000	7.51	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Whitetop, diffuse & spotted knapweed, bull thistle, field bindweed. Weeds being treated. Moderate traffic. County Road.	South of Madras, gravelled. Crosses Dry Canyon #2. Crosses 4 intermittent tribs.
	8910000	3.77	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Bull thistle, field bindweed; being treated, moderate traffic.	Crosses 5 intermittent tribs in farm fields area N of Redmond. N. of Haystack Reservoir.
	9600000	5.18	2	0	4	M	Cottonwood-willow with shrub dominated. Springs in area Moderate to high traffic, so weed threat to riparian.	No TES plants mapped within 200 ft. of road.	Whitetop, bull thistle, bindweed, Russian knapweed. Moderate to high traffic. Laurel Ln.	Goes to Haystack Reservoir and south.
	9605000	1.64	2	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Russian knapweed, being treated. High traffic.	Appears to go to Haystack Reservoir campground. Paved. SE of Haystack Reservoir. Native surfaced. No stream crossings.
9610000	1.29	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Whitetop, bull thistle; medusahead, not being treated. Moderate traffic.		

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	9700000	3.40	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated. Very high traffic, residual herbicide, all PVT.	Paved. Crosses Dry Canyon.
Deschutes South Total		54.02								
Grindstone	CRO-112	2.55	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		
	CRO-113	1.60	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		
	CRO-135	0.96	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		
Grindstone Total		5.11								
Irrigation Canals	OR-126	4.13	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No known infestations but high vehicle use. Have to ask BLM.	
	US-20	2.91	0	1	7	1H	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	No known infestations but high vehicle use. Have to ask BLM.	
Irrigation Canals Total		7.05								
Lake Billy Chinook	3500000	3.00	0	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present being treated. High traffic.	From The Island, across the Deschutes River Arm of Billy Chinook; paved.
	6200000	1.54	1	0	6	M	cultural plants	No TES plants mapped within 200 ft. of road.	Weeds present, not treated.	Same as in Crooked River Grasslands watershed. Goes north toward The Island. Rides area bet. Crooked and Deschutes Rivers.
	6300000	13.45	3	0	4	M	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated.	Crosses 3 intermittent tribs. Lake.
	6310000	1.28	2	0	1	L	Cultural plants.	No TES plants mapped within 200 ft. of road.	Low traffic.	No tribs. On Deschutes arm, south Lake Billy Chinook (essentially).
	6320000	1.52	4	0	7	1H	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	Low traffic. Geneva Pond.	Crosses 1 intermittent tribs.
	6330000	3.10	2	0	4	M	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	Low traffic, weeds in area.	No streams.
	6340000	1.10	2	0	4	M	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	Low traffic, weeds in area.	No streams.
	6350000	3.10	2	0	4	M	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	Low traffic.	2 tribs. Passes the old Geneva town site.
	6355000	1.70	4	0	4	M	Dry meadow. Weed risk.	No TES plants mapped within 200 ft. of road.	Low traffic.	
	6500000	1.47	2	0	4	M	Cultural plants.	No TES plants mapped within 200 ft. of road.	Moderate traffic.	West of Deschutes River Arm of Billy Chinook, Native surface. Parallels 1 intermittent trib.
	6510000	1.16	9	9	5	2H	Nearby habitat for rare lichen, <i>Texosporium sancti jacobii</i> .	Rare lichen and weeds.	Lichen at Big Canyon.	1 intermittent trib.
	6520000	0.62	2	9	5	1H	Nearby habitat for rare lichen, <i>Texosporium sancti jacobii</i> .	Rare lichen and weeds.	Lichen at Big Canyon.	No tribs.
	6670000	1.27	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Moderate traffic, weeds present.	No tribs. To NE of Haystack Draw.
6671000	0.75	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Moderate traffic, weeds present.	No tribs.	
8910000	0.33	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated.		
9600000	0.22	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated.	NW of Haystack.	
9700000	2.68	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated, all PVT agricultural land.		
Lake Billy Chinook Total		38.28								
Lower Beaver	1200000	1.51	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No weeds currently. Fairly low risk.	South and east of Little Summit. Top of Ridge.
	1250000	0.88	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No weeds currently. Weeds at 38 intersection.	South and east of Little Summit. Top of Ridge.
	3800000	3.49	3	0	4	M	Dry meadow/scab.	No TES plants mapped within 200 ft. of road.	0.03 CEDI; Treated; elsewhere on 38 road have high and moderate segments.	Crosses Wolf Creek and 2 intermittent tribs. Partly paved, partly aggregate.
	3810000	6.70	4	0	7 (8)	1H	Small amount of dry meadow. 4 because of high weed rating.	No TES plants mapped within 200 ft. of road.	0.9 CADR; 0.24 CEDI; 0.12 CEMA; 0.26 CIAR; 0.11 ?; 0.23 PORE; whitetop population increasing; diffuse & spotted stable due to years of treatment; stable PORE populations; Main road, high traffic, developed campground, high recreation use (high for Regor).	Parallels Wolf Creek and appears to cross it 2X. Crosses 4 intermittent tribs. Gravelled. Probably stringer wetlands. Follows creek all the way.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	4200000	9.95	4 (0)	0	8(6)	1H	Large scab; several springs on one segment (from 3810 junction to 6 corners); rest of road = 0	No TES plants mapped within 200 ft. of road.	0.21 CEMA; 0.05 CIAR; 0.15 HYPE; 0.25 PORE; 2 segments for ratings; From boundary to 3810 junction = 8 because spotted knapweed on private that has been treated for years but still there, plus developed campground, very high rec use; main entrance to Forest; From 3810 to 6 corners = 6 -- no weeds but connected to high risk area and has 2 developed campgrounds along it, main road.	Paved. Crosses Wolf Creek.
	4260000	4.49	4	6	6	M	Spring and aspen stand on road. Very small for length of road, but 4 because of weed risk.	CALLP. Weed risk.	No weeds currently, but this road is main road into the large houndstongue population.	Midslope; crosses N. Wolf Creek, Miles Creek, 7 intermittent tribs. Gravelled. Wetlands: appears come close to or crosses Clayton Reservoir, but no actual designation on our map of the reservoir.
	4276000	0.16	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No weeds currently.	Top of ridge. Small segment, east of Little Summit Prairie.
	4280000	0.68	2	0	8	1H	Scablands.	No TES plants mapped within 200 ft. of road.	No weeds currently.	Native surfaced, parallels intermittent trib to N. Wolf Creek, about 3/4 mi. segment. Camp Reservoir? May be in different watershed.
	4290000	4.20	4	6	5	M	Moist meadow, springs. Weed risk.	BOTCRE (large pop), BOTMON (small pop). Weed risk, moderate aquatic rating and size of BOTCRE population (> 300 plants).	0.12 CIAR; 0.02 PORE; High whitetop populations on 3810, which intersects with this road. CIAR and PORE are stable. But, on spur road, large medusa population & increasing CIAR population.	Parallels intermittent trib to Wolf Creek. Gravelled. S34 possible wetlands.
	5800000	1.62	0	3	5	M	No special habitats mapped within 200 ft. of road.	ASTTEG; 4 due to weeds; paved road, timbered to edge of road; ATTEG in timber.	Spotted knapweed, on private land (also?), houndstongue eradicated?	Paved. Road to Rager Ranger District?
	5810000	4.97	5	0	7	1H	Springs, alder wetland, dry meadow, moist meadow, scabs. 5 due to weeds.	No TES plants mapped within 200 ft. of road.	Canada thistle (stable); houndstongue increasing. High traffic.	Stringer scabland road goes to ridgetop? Crosses 1 intermittent.
	CRO-112	0.73	1	1	5	M	Special habitats unknown. Paulina to Izee.	Never surveyed; unknown.	Whitetop and spotted knapweed.	Road to Izee. Paved.
	CRO-113	5.40	2	1	5	M	From Pivots to Rd. 58. Special habitats - boggy, alder salix area; rest unknown.	Never surveyed; unknown.	Private population knapweed. Main road, high traffic.	County road to Rager before changes to Rd. 58. Crosses 2 intermittent tribs and crosses Beaver Creek. Paved.
	OR-380	8.10	1	1	6	M	Paulina west. Special habitats unknown.	Never surveyed; unknown.	Main road, high traffic, lots whitetop, teal that is not being treated by private land owners.	Paulina Hwy.
Lower Beaver Total		52.89								
Lower Crooked River Valley	2600000	7.38	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Diffuse & spotted knapweed, Canada thistle; being treated.	Paved, crosses Grizzly Mt. Canyon Creek.
	2700000	0.34	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated.	Little McKay Rd. that goes north Prineville.
	5700000	1.91	1	0	2	L	Cultural plants.	No TES plants mapped within 200 ft. of road.	Diffuse knapweed, being treated. All pvt land.	Behind Smith Rock.
	5710000	2.55	4	0	1	M	Riparian/aspen/weeds.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated.	Follows Skull Hollow Draw.
	5720000	1.75	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated.	
	7960000	4.85	1	0	4	M	Riparian and weed risk.	No TES plants mapped within 200 ft. of road.	Diffuse & spotted knapweed; St. Johnswort. High traffic, weeds being treated.	Follows a little bit Lone Pine Creek.
	OR-126	4.73	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds being treated. High traffic.	Paved.
	OR-27	6.28	2	0	2	L	Riparian and weed risk.	No TES plants mapped within 200 ft. of road.	Weeds being treated. High traffic.	Follows the Crooked River, south of Prineville. Paved.
OR-380	6.18	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	High traffic. Weeds not treated.	Road to Paulina. Only portion we deal with is portion right out of Prineville.	
Lower Crooked River Valley Total		35.97								
Lower Dry River	OR-126	7.85	1	1	7	1H	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	High traffic.	
	US-20	3.98	0	1	7	1H	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	High traffic.	
Lower Dry River Total		11.82								
Lower Metolius	6300000	4.54	3	0	4	M	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	0.11 CEMA being treated	Crosses 2 intermittent tribs. To the west of Deschutes River Arm.
	6310000	1.27	2	0	1	L	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	low traffic	No streams.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	6320000	0.18	4	0	7	1H	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	low traffic, but TACA	No streams.
	6400000	2.75	2	0	4	M	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	low traffic, but TACA	Crosses Juniper Creek. Comes close to Juniper Reservoir. Appears to be paved.
	6500000	0.98	2	0	4	M	Weeds may threaten cultural plants.	No TES plants mapped within 200 ft. of road.	moderate traffic	Crosses 2 intermittent tribs.
	6510000	3.44	9	9	9	3H	Weeds may threaten rare <i>Texosporium</i> lichen.	Lichen threatened by medusahead.	Medusahead.	Crosses 2 intermittent tribs and goes into Big Canyon, which drains Fly Lake.
	6520000	2.93	9	9	9	3H	Weeds may threaten rare <i>Texosporium</i> lichen.	Lichen threatened by medusahead.	Medusahead.	No streams.
Lower Metolius Total		16.09								
Lower N. Fork Crooked	4225000	1.20	2	0	5	M	Aspen.	No TES plants mapped within 200 ft. of road.	Adjacent diffuse knapweed & medusahead. Moderate vehicle use.	Parallels Committee Creek. Native surfaced. East of Prineville, look for N. Fk. Crooked River Wild and Scenic River area.
	4230000	7.79	3	0	2	L	Aspen, wet meadows, probably dry meadows. Moderate vehicle use.	No TES plants mapped within 200 ft. of road.	0.12 CEMA;	Look south from Big Summit Prairie. Goes off map and comes back on. Parallels Rough Canyon Creek, skips over and parallels Fox Canyon Creek, then up north Fox Canyon Creek. Comes close to 5 reservoirs.
	4240000	7.48	2	2	2	L	Aspen, dry & wet meadows. Moderate vehicle use.	CALOP4; Not selected populaion. Probably stable. Road goes to <i>Lomatium ochocense</i> , but no influence from road on this population.	Scotch thistle, med sage, spotted in or near. Being treated.	Crosses Donnelly Creek and Lamedog Creek;
	4260000	2.41	0	8	7	2H	No special habitats mapped within 200 ft. of road.	CALLOP. Small, vulnerable, isolated population with high noxious weed risk.	No weeds currently, but connected to houndstongue.	Crosses 1 intermittent trib, gravel.
	OR-380	0.07	0	1	6	M	Special habitats not mapped, but small piece of road.	TES not surveyed.		Paulina Hwy.
Lower N. Fork Crooked Total		18.96								
Lower Ochoco	2600000	8.85	2	0	8	1H	Willow, ditches.	No TES plants mapped within 200 ft. of road.	Scotch, Canada, whitetop, dalmation toadflax, spotted knapweed, teasel, Russian knapweed, probably medusahead. All on private with very little treatment.	Ochoco Reservoir area. Paved. Follows Ochoco Creek.
	2700000	3.33	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds present, high traffic.	Main street Prineville.
	3380000	0.41	0	1	4	M	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	Weeds present, being treated.	Top of ridge.
	4215000	7.03	5	0	6	M	Willow, alder. Maybe cottonwood. Low traffic, but floodplain has been altered.	No TES plants mapped within 200 ft. of road.	CIAR, teasel. All on private with very little treatment.	Follows Veazie Creek for all of its length. Gravelled.
	OR-380	5.59	0	0	7	1H	All private.	No TES plants mapped within 200 ft. of road.	Russian, CENMAC. All private very little treatment. Probably whitetop too.	Paulina Hwy.
Lower Ochoco Total		25.21								
Lower South Fork	2600000	0.47	6	1	6	M	Special habitats unknown; low probability.	TES unknown; low probability of occurrence.	Knapweed, Scotch thistle, teasel in areas along road and main road.	Area includes Black Canyon Wilderness up to Mitchell. S. Fork John Day River. This road is state hwy.
	3800000	7.61	6	0	6	M	Alder wetland, springs. Weed risk.	No TES plants mapped within 200 ft. of road.	Canada thistle (small populations). Fair amount hunter traffic in fall; Spotted knapweed eradicated; Historical yellow starthistle population.	Crosses S. Fk. Black Canyon Creek at top, rest ridgetop.
	5800000	1.58	4	0	4	M	Extensive dry meadows.	No TES plants mapped within 200 ft. of road.	Main road, moderate traffic. Canada thistle, sulfur cinquefoil; stable populations.	Crosses S. Fk. Wind Creek,
	5800500	1.87	6	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Spotted knapweed, diffuse, at intersection 58/58500. Treated annually, but persisting.	Campground? Or to reservoir?
	5810000	0.45	6	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No weeds currently, but are further south on the 5810 (CIAR, CENMAC). Main road.	Ridgetop. Top of Black Canyon Wilderness.
	5840000	1.74	5	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Canada thistle. Main road.	Ridgetop. S. side Black Canyon Wilderness.
	5850000	8.82	5	0	5	M	Scablands.	No TES plants mapped within 200 ft. of road.	Canada thistle, sulfur cinquefoil; stable, but nearby private land large teasel pop. which is not being treated. Logging traffic on 5850.	Crosses N. Fk. Wind Creek, Squaw Creek, and numerous intermittent tribs. Appears to come close to variety small reservoirs.
	GRA-42	24.12	6(8 for northern segment)	1	6(8 for northern segment)	M; 2H	Special habitats not mapped, but there are springs, moist meadows, rock outcrops.	TES unknown. Never surveyed. Probability low to moderate. Lots cattle grazing.	From Murderers Creek north to Dayville: houndstongue, diffuse, spotted, scotch thistle & historical dalmation toadflax population (partly on BLM). North portion = 8; overall 6.	Follows S. Fk. John Day River. Gravelled.
Lower South Fork Total		46.66								

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
Lower South Fork Crooked	OR-380	0.30	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Paulina Hwy..
Lower South Fork Crooked Total		0.30								
Lwr Crooked River RM56.5-7	OR-27	13.32	1	1	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	High traffic.	
Lwr Crooked River RM56.5-70.5 Total		13.32								
McKay	2150000	3.08	1	1	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	0.01 CEDI; 0.24 CEMA; 0.03 CIAR; High traffic, little treatment.	North and East of Prinville, road up Allen Creek. Entire length Allen Creek paralleled by road (10 miles?). Parallels Fall Creek for 2 miles.
	2600000	0.16	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Very high traffic. Some treatment.	Paved.
	2700000	19.53	2	5	5	M	Wet meadow. Riparian weed risk.	CALOP; Recreation & weed risk.	Heavy traffic and some treatment.	Follows McKay Creek and then breaks off and follows Little McKay Creek. Appears to be paved entire distance to top of ridge. Wet meadow at top?
	2705000	4.66	2	8	4	1H	Dry & wet meadows. Riparian weed risk.	CALOP4; High recreation use threatens selected population.	Diffuse & spotted knapweed, Canada thistle; some treatment.	Gravelled. Crosses 2 intermittent streams.
	2710000	8.54	1	3	4	M	Dry meadow.	Surveys unknown, higher probability.	Spotted knapweed; Canada thistle; being treated.	Top of ridge.
	2715000	0.00	0	3	4	M	No special habitats mapped within 200 ft. of road.	Surveys unknown, higher probability.	Canada thistle; being treated.	By Dutchman Spring. Approx. 100 ft. in watershed.
	2720000	0.10	1	3	4	M	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, higher probability.	Spotted knapweed; being treated.	
	2725000	0.18	1	3	4	M	Wet meadow. Riparian weed risk.	Surveys unknown, higher probability.	Canada thistle; spotted knapweed; being treated.	
	2730000	0.08	1	3	4	M	Wet meadow. Riparian weed risk.	Surveys unknown, higher probability.	Canada thistle; being treated.	
	3300000	5.24	2	0	5	M	No special habitats within 200 ft. of road. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Knapweeds, Canada thistle, bindweed, houndstongue, scotch broom, medusahead, all being treated.	Follows rest of McKay Creek, parallels it. Aggregate.
3380000	4.38	4	1	5	M	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	Leafy spurge; being treated.	Within the old Dry Creek area.	
McKay Total		45.96								
Mid Crooked River RM110-14	1600000	2.26	4	1	4	M	Aspen common.	Surveys unknown, low probability.	Canada thistle, being treated.	Crosses 3 intermittent tribs. Midslope, but top of watershed.
	1670000	4.89	4	1	4	M	SE Maury Creek wetland. Riparian weed risk.	Surveys unknown, low probability.	Whitetop, diffuse knapweed, Canada thistle; being treated.	Crosses Rimrock Creek and upper end Maury Ck.
	1750000	1.10	0	3	4	M	No special habitats mapped within 200 ft. of road.	CALOP nearby.	Weeds present, being treated.	At very top watershed.
	OR-380	10.30	1	1	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	High traffic.	Paulina Hwy.
Mid Crooked River RM110-125 Total		18.55								
Mid Crooked River RM70.5-8	1750000	2.42	4	4	4	M	Dry & moist meadow. Weed risk.	Traffic.	Weeds present, being treated.	Rd. crosses Sanford Creek & its assoc small wetland. Otherwise, top of watershed.
	CRO-134	0.44	1	1	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	High traffic.	Crosses 2 intermittent tribs for .5 mi. in watershed.
	OR-27	4.40	4	1	7	1H	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	High traffic.	Crooked River Hwy. Paved.
	OR-380	3.89	1	1	7	1H	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	High traffic.	Paulina Hwy.
Mid Crooked River RM70.5-86.2 Total		11.15								
Mid Crooked River RM86.2-1	1600000	18.60	4	1	4	M	Dry meadow; Willows. Riparian weed risk.	Surveys unknown, low probability.	Canada thistle, being treated.	Parallels Newsome& Sherwood Creeks. Appears to have some wetland involvement. Gravelled. Leaves watershed, comes across top of other watersheds and enters watershed. Crosses and parallels Wildcat and Drake Creek (east section).
	1610000	6.00	4	1	4	M	Dry & wet meadows. Riparian weed risk.	Surveys unknown, low probability.	Weeds present; being treated.	Parallels Newsome Creek. Adjacent to Wood Springs. Wetlands.
	1620000	3.20	4	1	4	M	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	Weeds present; being treated.	Parallels Gibson Ck.
	1680000	5.42	4	1	4	M	Moist meadow (Upper end Wildcat Creek has wetland?). Riparian weed risk.	Surveys unknown, low probability.	Diffuse knapweed, Canada thistle, being treated.	Crosses Wildcat Creek; SE part of watershed.
	1690000	1.70	4	1	4	M	Riparian weed risk.	Surveys unknown, low probability.	Canada thistle, being treated.	Crosses Wildcat Creek; SE part of watershed.
	1700000	9.35	1	1	4	M	Dry meadow.; less risk to dry meadow compared to other areas.	Surveys unknown, low probability.	Weeds present, being treated.	Parallels Pine Creek. Same as 1600.
	1750000	9.34	4	1	4	M	No special habitats within 200 ft. of road. Higher weed risk.	Surveys unknown, low probability.	Weeds present, being treated.	At top of watershed.
	1760000	0.95	0	1	2	L	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	Weeds nearby but less traffic.	Might go to Tower Point Lookout?

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	4215000	9.24	2	0	3	L	Wet meadow, aspen. Low to moderate recreation use.	No TES plants mapped within 200 ft. of road.	Canada thistle, spotted knapweed; moderate vehicle traffic.	Crosses Lodgepole, Buck, Horse Heaven, Rock Crusher, W. Fk. Horse Heaven Creeks (all intermittents?). Part native surface; part gravel.
	4235000	13.56	2	0	5	M	Dry (?) & wet meadow, aspen, Mt. Mahogany.	No TES plants mapped within 200 ft. of road.	Knapweeds, medusahead. Moderate vehicle use.	Long section road, midslope, crosses numerous stream channels; gravelled.
	OR-380	20.84	1	0	8	1H	Willows, wetlands. Nature Conservancy Juniper Hills Preserve along part of road.	No TES plants mapped within 200 ft. of road.	Whitetop, Canada thistle, Russian knapweed; yellow starthistle & leafy spurge on private. Some control.	Paulina Hwy.
Mid Crooked River RM86.2-110 Total		98.19								
Middle Beaver	5800000	12.64	6	3	5	M	Wet meadow; willow wetland; dry meadow, extensive scabs. High use; main rd. to Regor RD, weeds.	ASTTEG; weeds.	Whitetop, knapweeds, Canada thistle, St. Johnswort, sulfur cinquefoil; paved, weeds likely stay within road prism. All decreasing, treated yearly. Developed, well-used campground.	Goes to Rager and beyond. Paved. Crosses numerous streams (Rager, Powell, Tamarac, Sugar, N. Fork Beaver, Bear). Numerous wetlands.
	5800050	0.10	7	0	5	1H	Willow wetland. 7 because in developed rec area; high use and weed risk.	No TES plants mapped within 200 ft. of road.	Canada thistle declining but high use area; also spotted knapweed at entrance to campground.	Campground road at Sugar Creek. Willow wetland at creek?
	5800141	5.00	4	0	5	M	Moist meadow, willow. Special habitats degraded due to admin site. Potential to increase habitat quality if money becomes available.	No TES plants mapped within 200 ft. of road.	Whitetop, spotted knapweed.	Campgrounds and Compound Roads.
	5800142	0.40	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Campgrounds and Compound Roads.
	5800143	0.21	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Whitetop increasing.	Campgrounds and Compound Roads.
	5800145	0.26	4	0	7	1H	Moist meadow, willow, aspen. Special habitats degraded due to admin site. Potential to increase habitat quality if money becomes available.	No TES plants mapped within 200 ft. of road.	Whitetop, teasel, spotted knapweed. Teasel decreasing. Road to bunkhouse, open storage, warehouse; lots trucks, equipment, traffic.	Campgrounds and Compound Roads.
	5810000	4.15	2	0	3	M	Willow wetland.	No TES plants mapped within 200 ft. of road.	No weeds currently, but developed rec site at junction; weeds along 58, high use.	Parallels Sugar Creek, crosses it 2X. Gravelled.
	5820000	9.00	2	0	6	M	Dry meadow.	No TES plants mapped within 200 ft. of road.	Early invader whitetop pop.; decreasing spotted knapweed and medusahead; stable Canada thistle.	Crosses Powell Ck., 3 intermittent tribs.
	5830000	5.40	1	2	3	L	Spring.	ORYHEN	No weeds currently; fairly low risk but medusahead on side road.	Crosses Tamarac, Rager, Heisler, and Beaver Dam Creek. Beaver Dam Ck. Becomes N. Fk. Beaver Ck. Midslope road.
	5840000	10.50	3	0	6	M	Springs, dry meadow, scablands. Weed risk.	No TES plants mapped within 200 ft. of road.	Weed problem northern part road; Knapweed & St. Johnswort decreasing to nearly gone; Canada thistle concentrated & persisting.	Ridgetop;
	5850000	0.18	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No weeds currently.	Only maybe 1/4 mi. in watershed.
	CRO-135	8.32	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Private land access; little whitetop.	Gravelled; South of Beaver Ck.; crosses S. Fk. Beaver Creek.
Middle Beaver Total		56.15								
Middle N. Fork Crooked	2200000	2.89	2	5	7	1H	Dry & wet meadow; alder wetland, aspen. Threats: channel went from D to C, narrow floodplain, get flash flows - no beaver, more ephemeral, dries ou, more conducive to conifers.	Calochortus along lower slopes; this is an upper slope population. Probably fringe pop, high in the watershed, which could make it important. Low numbers of CALOP, but relatively protected because not directly affected by road or recreation use associated with road.	Canada thistle somewhere along road but not mapped, need > information. Yellow star thistle in adjacent watershed; very high risk of moving into this watershed via roads.	(Area essentially encompasses eastern 1/2 of Big Summit Prairie). On northern 1/2 of prairie, passes N. of Allen Ck. Reservoir. Crosses Allen & Boothe Creek, parallels Beetle Ck. Wetlands at upper end of Beetle Creek.
	2230000	2.36	3	2	2	L	Scablands (Artemisia cana type).	Potential <i>Carex stenophylla</i> in scablands. Not surveyed; low risk to scablands from recreation, vehicles. Suspect habitat stable.	<i>Ventenata dubia</i> probably along this road. Tends to occupy disturbed scablands.	Native surface. Rd. goes from Big Summit Prairie to top Mt. Pisgah.
	2630000	8.79	2	2	2	L	Dry meadow. Low vehicle use, LMP directs low maintenance, so not lot disturbance.	No known TES plants within 200 ft. of road. Parts of area surveyed. Probably low risk because known potential habitat.	Low risk - low vehicle use, few nearby infestations.	Ridgetop road (Summit Trail). Historic, special management area, cannot improve it.
	3000000	8.42	2	2	5	M	Aspen; dry meadow & wet meadow; cottonwood. Road in and out of drainages; traverses many ecotypes.	CALOP4; Low risk from the road.	Probably Canada thistle. Moderate risk - not State or Forest priority species.	Crosses N. Fk. Crooked River & Porter Ck., numerous wetlands.
	3010000	5.80	2	2	2	L	Dry meadow & wet meadow, aspen? Not threatened by road.	No known TES plants within 200 ft. of road. Low risk - habitat not degraded or directly impacted.	ODA "category B" species (not state-listed).	Parallels Peterson Ck. for 2 miles.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	4200000	8.54	5	4	4	M	Dry & wet meadow; willow & alder wetlands, very few cottonwoods.	CALOP, CALOP4; Weed risk.	Scotch & Canada thistles, whitetop (small pop, sprayed by private landowner).	Paved, S. edge Big Summit Prairie. Parallels N. Fk. Crooked River. Numerous wetlands.
	4200460	0.33	7	5	5	1H	Willow wetland; Threatened by high use recreation (flower picking, ATV's, bicycles, people, horses).	CALOP4; <i>Clematis hirsutissima</i> (Rich Helliwell says edge of range), <i>Downingia elegans</i> .	Probably Canada thistle. Medium traffic flow.	Deep Ck. Campground road.
	4230000	3.95	4	3	2	M	Aspen; Dry meadow; Low traffic; low maintenance road, but moderate aquatics rating?	CALOP4; habitat not being directly degraded but probably some riparian degradation.	None mapped; probably most weed-free area (M. Lesko).	Parallels Hickey Creek for about 2 miles (about 1/2 road segment).
	4240000	1.93	2	2	5	M	Aspen; Dry meadow; Flat, low erosion. Much aspen treated and fenced.	CALOP4; Road goes to <i>Lomatium ochocense</i> ; CALOP common along road; some inside exclosures. Not high concern - road not directly impacting or degrading habitat.	Canada & Scotch thistles, spotted & diffuse knapweed, Med sage just off of road, potential for houndstongue to invade. Existing infestations appear controlled. High risk species, lot traffic; problem if miss year treatment.	Crosses 1 intermittent.
Middle N. Fork Crooked Total		43.01								
Middle South Fork	5800000	5.83	4	0	4	M	Dry meadow; Willow & alder wetlands. Weeds and moderate floodplain aquatics rating.	No TES plants mapped within 200 ft. of road.	Canada thistle, sulfur cinquefoil, spotted knapweed jct. 500 rd. Treated annually.	Gravel; parallels Murray and Sunflower Creeks.
	5800500	0.87	4	0	7	1H	Dry meadows. Weed risk.	No TES plants mapped within 200 ft. of road.	Spotted & diffuse; Canada thistle, medushead (?), sulfur cinquefoil, leafy spurge (only site on District). Road provides access to private land.	Road to Frazier Campground.
	5870000	4.55	6	0	8	1H	Dry meadows; aspen along creek. Weed risk.	No TES plants mapped within 200 ft. of road.	Whitetop (lots), diffuse & spotted, yellow starthistle, Canada thistle. Leafy spurge in GIS actually on 5800500. Historical St. Johnswort. Sunflower Pit is 1/4 mi. off road, has large knapweed pop.	Parallels Sunflower Ck. & associated tribs.
	GRA-42	6.98	2	2	5	M	Special habitats unknown.	TES unknown.	Whitetop in area. Weed situation unknown.	Follows S. Fk. John Day River.
	GRA-67	11.79	2	2	5	M	Special habitats unknown.	TES unknown.	Whitetop in area. Weed situation unknown.	Follows Pine Ck. And Funny Ck. Paved.
	GRA-68	5.09	2	2	5	M	Special habitats unknown.	TES unknown.	Whitetop in area. Weed situation unknown.	Don't know where it is.
	GRA-69	4.43	2	2	5	M	Special habitats unknown.	TES unknown.	Whitetop in area. Weed situation unknown.	Parallels and crosses Warm Springs Creek. Paved.
Middle South Fork Total		39.53								
Mill	2600000	0.35	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Very high traffic. Some treatment.	Hwy 26; Crosses Mill Creek, above Ochoco Reservoir. Bottom of drainage, cuts off floodplain.
	2700000	6.56	2	0	4	M	Dry & wet meadows. Weed and recreation risk.	No TES plants mapped within 200 ft. of road.	Canada thistle, being treated.	Paved & native surface. In and out watershed - lot segments.
	2745000	0.88	0	1	2	L	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	Weeds nearby.	Top ridge.
	3300000	16.24	2	0	5	M	No special habitats within 200 ft. of road. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Diffuse & spotted, bindweed, Scotch broom, medusahead; all being treated.	Parallels Mill Ck., goes up W. Fk. Mill and Harvey Creeks. 5 segments. 1st 2 segments paved (all on private land); rest gravelled.
	3300300	0.30	1	0	5	M	No special habitats within 200 ft. of road. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Canada thistle, being treated.	Wildcat campground.
	3320000	5.09	1	0	2	L	Wet meadow.; Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Spotted knapweed, Canada thistle; being treated. Low traffic.	Wet meadow. Road through Hash Rock Ck. Area (burned).
	3330000	3.00	1	0	2	L	Moist & wet meadows. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Scotch broom, being treated. Low traffic.	Crosses 2 intermittent tribs.
	3330010	0.40	1	0	2	L	Wet meadow; Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated. Low traffic.	
	3350000	4.30	1	0	4	M	No special habitats within 200 ft. of road.; Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Diffuse knapweed, bindweed, being treated. High traffic.	Parallels Benefield Creek.
	3360000	4.60	3	0	5	M	No special habitats within 200 ft. of road. Riparian weed risk. Nearby weeds.	No TES plants mapped within 200 ft. of road.	Weeds present, being treated. High traffic.	Parallels Lemon Creek.
3370000	6.06	3	3	5	M	No special habitats within 200 ft. of road. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Leafy spurge, being treated. Traffic.	Parallels Dry Creek.	
3380000	3.00	3	0	5	M	Shrub bottom. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Canada thistle, leafy spurge; being treated. More weeds and traffic.	Shrub bottom. Parallels White springs Creek & cuts thru Whitetail Springs.	
Mill Total		50.79								
Mountain Creek	1200000	6.28	2	0	5	M	Springs.	No TES plants mapped within 200 ft. of road.	At boundary, spotted knapweed & teasel. On private, fairly extensive spotted & diffuse knapweed.	Road in Mack Ck drainage. Paved.
	1280000	3.40	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Spotted knapweed pop behind locked gate; road accesses logging & allotment; remote.	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	2200000	7.04	2	2	9	1H	Aspen; meadows.	Not recently surveyed for TES plants.	Potentilla recta; yellow starthistle primarily on private.	Parallels Badger Creek, crosses numerous moist-wet (cinquefoil) meadows, crosses Hoffman & Bug Cks & 4 intermittents. Gravelled.
	2200930	0.40	1	1	5	M	Wet meadow (spring).	No TES plants mapped within 200 ft. of road.	Moderate use, adjacent weeds.	Probably Scotts campground??
	2600000	11.68	3	1	2	L	Mountain Creek. Riparian weed risk.	Surveys unknown, low probability.	Weeds present, some treatment.	Hwy 26. Private land or BLM
	2630000	3.64	2	0	2	L	Dry meadow.	No TES plants mapped within 200 ft. of road.	No weeds. Low risk, low traffic.	Ridgetop. Summit Trail.
	(blank)	#####						No TES plants mapped within 200 ft. of road.		
Mountain Creek Total		#####								
Mud Springs Creek	5100000	8.75					No special habitats mapped within 200 ft. of road.		Spotted knapweed.	Parallels Dewies Canyon, crosses Redshed Canyon.
	5130000	2.10					No special habitats mapped within 200 ft. of road.			
	5160000	3.85	0	0	4	M	Wetland?			Crosses Mud Springs Creek.
	5200000	3.88	0	0	4	M	Cottonwood-willow with shrub dominated. No special habitats mapped within 200 ft. of road.			Parallels Mud Springs Creek.
	5250000	0.97	0	0	6	M	Cottonwood willow? Wetlands?			
	5920000	5.46	1	0	2	L	Cottonwood willow? Wetlands?			Crosses Mud Springs Creek. Gravelled.
	9700000	7.43	0	0	4	M	No special habitats mapped within 200 ft. of road.			Crosses Mud Springs Creek.
Mud Springs Creek Total		32.44								
Murderers Creek	GRA-42	5.88	DEB				No special habitats mapped within 200 ft. of road.			2 segments. Paulina District?
Murderers Creek Total		5.88								
Paulina	4200000	4.62	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Whitetop (increasing), Diffuse & spotted, Canada thistle, houndstongue. High traffic.	Top of the ridge.
	4240000	0.03	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Location in vicinity of houndstongue infestation.	
	4260000	9.59	2	7	9	2H	Little dry meadow/scabland.	CALLOP; one pop is selected in Conservation Strategy; high weed risk.	Houndstongue (epidemic), medusahead.	Crosses Paulina, Burnt Corral, Indian, Roba, Hewed Log, Dipping Vat & dry Paulina Creeks.
	4280000	3.92	1	6	8	1H	Spring.	CALLOP; 2 separate pops; high weed risk.	Canada thistle, houndstongue, spotted knapweed, medusahead. Road connects to the large houndstongue pop.	Parallels Dipping Vat Ck for 1+ miles.
Paulina Total		18.15								
Pilot Butte	US-20	3.52	0	0	7	1H	No special habitats mapped within 200 ft. of road.	Unknown.	High traffic, connects to high weed pops.	
Pilot Butte Total		3.52								
Rock Creek	1200000	0.83	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No weeds, low risk, but well-travelled, especially in fall by hunters.	Ridgetop.
	1250000	2.29	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No weeds currently.	Ridgetop
	2600000	2.69			5		Special habitats unknown.	No TES surveys; unknown.	Spotted knapweed, scotch thistle, whitetop on 26.	Hwy 26.
	3800000	4.63	6	7	7	2H	Dry, moist, & wet meadow; Alder wetland, aspen. Weed risk.	BOTCRE, BOTMIN, BOTPIN; High weed risk; small, fragmented & highly vulnerable species.	Diffuse & spotted knapweed, Canada thistle, whitetop. Well-travelled in fall by hunters.	Parallels & crosses Squaw Ck.; parallels Rock Ck.
	5810000	2.33	2	0	7	1H	Dry meadow.	No TES plants mapped within 200 ft. of road.	Spotted knapweed, Canada thistle. 5810 (Wolf Creek watershed), increasing houndstongue population.	Dry Meadow. Ridgetop.
	5840000	0.28	0	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Canada thistle; large intersection connects with other roads with weeds.	Ridgetop.
Rock Creek Total		13.03								
Steelhead	5540000	4.40	0	0	4	M	No special habitats mapped within 200 ft. of road.		Some treatment, moderate traffic.	Area due south Lake Billy Chinook and takes in Steelhead Falls. No tribs.
	6200000	6.40	0	0	8	1H	No special habitats mapped within 200 ft. of road.		Weeds not treated, high traffic.	No tribs.
	9700000	17.88	0	0	4	M	No special habitats mapped within 200 ft. of road.		High traffic, some treatment.	
	OR-126	1.80	0	0	4	M	No special habitats mapped within 200 ft. of road.		High traffic, some treatment.	
	US-20	5.60	0	0	4	M	No special habitats mapped within 200 ft. of road.		High traffic, some treatment.	
Steelhead Total		36.08								
Three Creeks	US-20	5.79	0	0	4	M	No special habitats mapped within 200 ft. of road.		High traffic, some treatment.	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
Three Creeks Total		5.79								
Trout Headwater	2150000	1.31	2	1	5	M	Moist meadow. Riparian weed risk.	Surveys unknown, low probability.	Weeds present, less treatment.	Crosses E. Fk. Foley Creek, parallels Foley. Native surfaced.
	2700000	0.46	1	1	2	L	Some meadow habitat.	Surveys unknown, low probability.	Canada thistle, being treated.	Ridgetop.
	2710000	1.06	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Spotted knapweed, Canada thistle; being treated.	Ridgetop.
	2715000	1.30	1	0	2	L	No special habitats within 200 ft. of road. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Canada thistle, being treated.	Follows Dutchman Creek.
	2720000	17.80	1	1	2	L	No special habitats within 200 ft. of road. Riparian weed risk.	ACHE just off road system, near material sources.	Spotted knapweed, Canada thistle, St. Johnswort, sulfur cinquefoil; being treated.	Midslope road crosses Potlid Ck., Cartwright Ck., and Big Log Ck., crosses Dutchman Ck. Native surfaced.
	2725000	6.32	1	1	2	L	No special habitats within 200 ft. of road. Riparian weed risk.	ACHE just off road system, near material sources.	Spotted knapweed, Canada thistle, St. Johnswort; being treated.	Follows Trout Ck., crosses Potlid Ck.
	2730000	8.97	1	0	2	L	Meadow. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Canada thistle, being treated.	Crosses Potlid, W. Fk. Trout, Trout, Anger Creeks.
	2735000	0.57	1	0	3	L	No special habitats within 200 ft. of road. Riparian weed risk.	No TES plants mapped within 200 ft. of road.	Diffuse knapweed, being treated, higher weed densities.	Crosses trib to Anger Ck.,
	2740000	2.20	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	0.5 CIAR; Weeds present, being treated.	
2745000	2.64	1	0	1	L	Meadow. Weed risk.	No TES plants mapped within 200 ft. of road.	Nearby weeds.	Ridgetop.	
Trout Headwater Total		42.63								
Upper Beaver	5870000	1.95	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Sulfur cinquefoil.	Ridgetops.
	CRO-112	1.01	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Rd. to lzee.
	CRO-135	0.96	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Crosses S. Fk. Beaver Ck, gravelled.
	CRO-312	3.32	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Crosses S. Fk. Beaver Ck, gravelled.
	GRA-67	8.13	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Paved.
	GRA-69	13.86	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Paved.
Upper Beaver Total		29.24								
Upper Dry River	OR-27	2.39	1	1	3	L	No special habitats within 200 ft. of road. Riparian weed risk.	Surveys unknown, low probability.	Some treatment.	
	US-20	18.93	0	1	3	L	No special habitats mapped within 200 ft. of road.	Surveys unknown, low probability.	Some treatment.	
Upper Dry River Total		21.32								
Upper Middle John Day	2600000	3.77	1	2	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Hwy
	3800000	6.06	3	0	4	M	Dry meadow.	No TES plants mapped within 200 ft. of road.		
Upper Middle John Day Total		9.83								
Upper N. Fork Crooked	2200000	10.73	4	4	5	M	Cottonwood bottomland; Aspen; dry & wet meadows; willow & alder wetlands.	CALOP4; Select population in draft conservation strategy. Heavy dispersed use could be due to road.	CENMAC and houndstongue but being treated; high traffic also.	(Area West 1/2 of Big Summit Prairie - just labelled "Upper N"). Parallels and crosses Howard Ck and W. Howard Ck., crosses Indian Creek, Crosses Crosswhite Ck., Stump Ck., Fox Ck., Elliot Ck. (little whimpypiddle things). Howard Ck. Of most concern.
	2230000	4.65	1	1	2	L	No special habitats mapped within 200 ft. of road.			Parallels Fox Ck. 2 miles. Same notes as 2230 in Middle North Fork Crooked.
	2630000	5.23	4	2	4	M	Veratrum wetland, scabland, aspen. Some recreation use.	Potential habitat for ricegrass.	Houndstongue, whitetop, Canada thistle; being treated. High traffic.	Ridgetop, crosses 1 wetland.
	4200000	8.25	2	4	4	M	Scablands, wet meadows. Some recreation use.	CALOP4; select population in draft conservation strategy. Some recreation use.	Spotted knapweed, Canada thistle, burdock. Being treated.	Paved. Crosses Johson, Polio, & Brush Creeks, N. Fk. Crooked River. Crosses thru middle of wettest part of Big Summit Prairie.
	4205000	0.84	1	0	3	L	Aspen, wet meadow, alder, springs.		Butter & eggs; Installed traffic barriers to reduce risk and plan to spray in 2002. Hard to control but pretty slow spreading.	Ridgetop. Goes to Independent Mine.
	4210000	4.30	2	2	2	L	Cottonwood bottomland; Aspen; Dry meadow. Some recreation use.	CALOP adjacent to road.	No known infestations but houndstongue and spotted knapweed nearby. High traffic.	W. side Big Summit Prairie, crosses Cram, Merritt, and Howard Creeks. Gravelled.
	4215000	9.43	2	4	3	M	Dry & wet meadows; Dry meadow is not scabland (or at least quality habitat). Aspen. Some recreation use.	Select CALOP population. High traffic and recreation use.	Whitetop and Canada thistle. Being treated. High traffic.	Parallels Gray Creek for 5 miles of about 9 mi. of road.
	4220000	6.70	3	2	2	L	Wet meadow, Aspen. Recreation use.	Habitat present for CALOP and some recreation use.	Whitetop along road. Pretty small and restricted to road shoulder.	Parallels Lookout Creek, crosses Lytle Ck., Native surfaced;

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	4225000	3.65	2	2	2	L	Dry & wet meadow; Willow wetland. Some recreation use.	CALOP4; Select population on Williams Prairie. Fenced, pretty wet; CALOP appears protected.	High traffic and adjacent noxious weeds.	Parallels N. Fk. Crooked River, goes past Williams Prairie. Gravelled.
	4230000	7.25	2	2	1	L	Dry & wet meadows, aspen. Not threatened by road. Some recreation use.	CALOP4; select population Goldie Springs. CALOP appears protected. Moderate recreation use in area but not much in meadows where CALOP occurs.	No known infestations but weeds nearby. Low use.	Top of watershed.
Upper N. Fork Crooked Total		61.02								
Upper Ochoco	2200000	7.61	4	0	3	M	Veratrum wetland; Cottonwood bottomland; Aspen; dry & wet meadows; Alder wetland. Floodplain not functioning great. Channelized, road took out floodplain.		Spotted knapweed, Canada thistle, Med sage adjacent. Currently treated but high recreation.	Parallels Ochoco Ck. for entire length, crosses it numerous times. Paved 90%. Goes past Walton Lake.
	2210000	3.53	4	2	3	M	Aspen; wet meadow; alder wetland.	CALOP4; not select population. Low vehicle use within CALOP populations.	Diffuse & spotted knapweed, bindweed, adjacent houndstongue. High recreation use.	Parallels Thronson Creek for 1/2 of the creek's length. Gravelled.
	2220000	2.00	2	0	3	L	Veratrum wetland; wet meadow. Little impact from recreation.	No known TES plants.	Spotted knapweed, being treated. High vehicle use.	Road around Walton Lake. Paved.
	2220010	0.20	4	2	3	M	No special habitats mapped within 200 ft. of road.			Campground? Not on Ochoco atlas.
	2300000	8.25	2	0	3	L	Alder wetland. Some agriculture, old burn.. Habitat improving.	No known TES plants.	Spotted knapweed; burdock; being treated. High vehicle use.	Parallels Ochoco Creek. Paved.
	2300403	0.10	2	0	2	L	Alder wetland. Influenced by road but stable.	No known TES plants.	Spotted knapweed, whitetop, sulfur cinquefoil; being treated. Admin site. High vehicle use but site kept fairly weed free.	Road to Big Summit RD building.
	2600000	9.33	4	3	5	M	Cottonwood bottomland; aspen; dry & wet meadows; willow & alder wetlands. All impacted by road.	CALOP4; Select population (Spears Meadow/Shamrock Creek) threatened by teasel but not presently by other weeds. Low vehicle & recreation use.	Spotted knapweed, Russian knapweed, Diffuse knapweed, Scotch thistle, Dalmation toadflax, whitetop, Canada thistle. Very high vehicle use and being treated.	Parallels Marks Ck.,
	2600150	0.20	4	4	2	M	Moist/wet meadow.	CALOP habitat. High potential. High vehicle use. Moderate recreation use.	No known infestations but high vehicle use & adjacent weeds.	Connector road.
	2600550	0.53	1	0	2	L	Aspen, cottonwood, alder, willow.	No known TES plants.	Spotted knapweed, Canada thistle, houndstongue, medusahead in or near. Road blocked but gets some ATV traffic.	Peterson Creek.
	2610000	7.90	3	0	3	L	Dry & wet meadow; willow & alder wetlands, aspen, cottonwood.	No known TES plants.	Whitetop, teasel, spotted knapweed and adjacent houndstongue CYOF. Currently being treated but high vehicle use.	Parallels Little Hay Ck. & Coyle Ck. Gravelled.
	2610400	0.30	3		3	L	Alder wetland, aspen, willow. Stable, though alders declining slightly.	Unknown.	Spotted and whitetop but being treated, high vehicle use.	Campground road (Ochoco Forest Camp).
	2610401	0.10	3		3	L	Alder wetland, aspen, willow. Stable, though alders declining slightly.	Unknown.	Spotted, whitetop, being treated. High vehicle use.	Roads associated with Ranger District.
	2610500	0.40	3		3	L	Alder wetland, aspen, willow. Stable, though alders declining slightly.	Unknown.	Spotted, whitetop, being treated. High vehicle use.	Goes to houses at Ranger District.
	2610510	0.05	3		3	L	Alder wetland, aspen, willow. Stable, though alders declining slightly.	Unknown.	Spotted, whitetop, being treated. High vehicle use.	Roads associated with Ranger District.
	2610511	0.04	3		3	L	Alder wetland, aspen, willow. Stable, though alders declining slightly.	Unknown.	Spotted, whitetop, being treated. High vehicle use.	Roads associated with Ranger District.
	2610515	1.50	3		3	L	Alder wetland, aspen, willow. Stable, though alders declining slightly.	Unknown.	Spotted, whitetop, being treated. High vehicle use.	Roads associated with Ranger District.
	2620000	4.80	4	5	2	M	Wet meadows, willow, alder.	CALOP4; not select population. Moderate recreation use.	No known infestations, but adjacent spotted knapweed and moderate vehicle use.	
2630000	6.22	3	7	4	1H	Aspen; dry & wet meadow; willow & alder wetlands. Affected by road but stable.	CALOP4; select population (Trail Spring). High recreation use, high traffic.	Whitetop, CENMAC, teasel, but being treated. High vehicle use.		
2700000	2.58	4	2	4	M	Aspen; Wet meadow. One of few areas where CALOP growing in aspen. Aspen declining; may not be totally road related.	CALOP. Not being impacted, though aspen is impacted; aspen may need moister environment than CALOP.	Spotted knapweed, being treated. High vehicle use.	Paved section.	
3350000	5.50	4	2	2	M	Dry meadow, small Swamp Spring. Moderate vehicle use.	<i>Carex interior</i> -- only known population is along this road at Swamp Spring. Habitat was impacted when culverts installed; may now be stable.	Spotted & diffuse knapweed, houndstongue. Moderate vehicle use.		
4200000	6.51	2	0	2	L	Alder wetland, cottonwood, wet meadow, willow, aspen. Fairly stable.	No TES plants mapped within 200 ft. of road.	Burdock, spotted knapweed; being treated; high vehicle use.		

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	4200100	1.00	3	0	4	M	Alder wetland, wet meadow, willow, alder.	No TES plants mapped within 200 ft. of road.	Spotted knapweed. High recreation use.	
	4205000	0.36	1	0	3	L		No TES plants mapped within 200 ft. of road.	Butter & eggs. Installed traffic barriers to reduce risk and plan to spray in 2002. Hard to control but pretty slow spreading.	
	4215000	3.28					No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		Way off Forest -- no idea.
Upper Ochoco Total		72.28								
Upper South Fork	GRA-68	2.00	1	1	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		
	GRA-69	4.25	1	1	3	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		
Upper South Fork Total		6.25								
Whychus	6300000	2.46	3	0	4	M	Cultural plants and weeds.	No known TES, not surveyed.	Some weed treatment .	
	6370000	2.31	3	0	4	M	Cultural plants and weeds.	No known TES, not surveyed.	Some weed treatment .	
	US-20	1.27	2	2	6	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		
Whychus Total		6.04								
Willow Creek	2150000	0.61	0				No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Unable to locate.	
	2600000	8.62	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Diffuse & spotted knapweed, St. Johnswort; being treated.	
	2600828	0.17					No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Unable to locate.	
	2680000	0.30	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Diffuse knapweed, being treated.	
	2690000	2.85	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Medusahead; not being treated.	
	5160000	1.85	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Some weed treatment, in Madras.	
	5200000	1.12	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Some treatment.	
	5250000	0.53	0	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Medusahead nearby.	
	5300000	12.20	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Medusahead, not being treated.	
	5300153	1.80	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds being treated, mod/high traffic.	
	5310000	6.50	1	0	4	M	some riparian weeds	No TES plants mapped within 200 ft. of road.	Weeds being treated, mod/high traffic.	
	5320000	2.20	1	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No known infestations, but nearby weeds.	
	5330000	2.50	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No known infestations, but nearby weeds low traffic.	
	5340000	2.00	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No known infestations, but nearby weeds low traffic.	
	5350000	1.90	1	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No known infestations, but nearby weeds low traffic.	
	5400000	4.65	1	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Whitetop, spotted knapweed, bull thistle; being treated. High traffic.	
	5500000	2.19	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Whitetop; being treated. High traffic.	
	5700000	2.67	1	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.		
	5750000	0.16	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Spotted knapweed, bull thistle; being treated. High traffic. Cyrus Horse Camp.	
	5760000	0.90	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds being treated.	
5920000	2.74	1	0	2	L	Some riparian weeds.	No TES plants mapped within 200 ft. of road.		Road to Hay Cr Ranch.	
6600000	1.82	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds being treated.		
6630000	0.81	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	No known weeds, moderate traffic.		
7850000	4.45	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds being treated, moderate traffic.		
8900000	2.74	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Bull thistle; bindweed; being treated.		
9600000	3.15	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Whitetop, spotted knapweed, bull thistle, bindweed; being treated.		

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	General Notes
	9610000	1.21	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds being treated.	
	9620000	1.55	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Spotted knapweed, bindweed; being treated.	
	9700000	6.32	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants mapped within 200 ft. of road.	Weeds being treated. Hwy 97 through Madras, urban and agriculture.	
Willow Creek Total		80.51								

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
1000390	0.00	0.60	BIT	B	3	ANNUAL	1307	\$784	4	ANNUAL	1307	\$784	Cold Springs Campground, McKinzie Wagon Road.
1000900	0.00	0.57	IMP	A	3	ANNUAL	474	\$270	3	ANNUAL	474	\$270	Lava Camp Lake CG, PCT access, McKinzie Wagon Road.
1008000	0.00	6.44	IMP	A	2	REGULAR	266	\$1,710	2	REGULAR	266	\$1,710	secondary access for Tollgate Subdivision - main fire exit route. McKinzie Wagon Road, Brooks Mainline Railroadbed. Road to old Sisters RS - Trout Creek.
1012000	0.00	0.30	AC	B	3	ANNUAL	1307	\$392	4	ANNUAL	1572	\$472	Graham Corral C.G. route, secondary access/fire escape from Black Butte Ranch - very important route for district - always requests for more maintenance on this route. McKinzie Wagon road, Brooks Mainline railroad bed. Opportunity to upgrade to level 4 and pave with recycled asphalt from HWY 20 project.
1012000	0.30	3.03	AGG	B	3	ANNUAL	877	\$2,394	4	ANNUAL	1572	\$4,292	
1012300	0.00	0.02	IMP	A	3	ANNUAL	659	\$16	3	ANNUAL	659	\$16	Graham Corral C.G. route, second segment, Brooks Mainline Railroadbed.
1012300	0.00	0.02	IMP	A	3	ANNUAL	659	\$16	3	ANNUAL	659	\$16	
1012300	0.02	1.20	IMP	A	3	ANNUAL	659	\$775	3	ANNUAL	659	\$775	
1012300	1.20	2.40	IMP	A	2	REGULAR	236	\$283	2	REGULAR	236	\$283	
1012300	2.40	3.08	NAT	A	2	REGULAR	224	\$152	2	REGULAR	224	\$152	
1012300	3.08	3.78	NAT	A	2	REGULAR	224	\$156	2	REGULAR	224	\$156	
1012340	0.00	0.68	IMP	A	3	ANNUAL	659	\$445	3	ANNUAL	659	\$445	final segment to Graham Corral C.G.
1012340	0.68	0.76	IMP	A	3	ANNUAL	659	\$55	3	ANNUAL	659	\$55	
1012340	0.68	0.76	IMP	A	3	ANNUAL	659	\$55	3	ANNUAL	659	\$55	
1012340	0.76	0.80	IMP	A	3	ANNUAL	659	\$27	3	ANNUAL	659	\$27	
1014000	0.00	2.42	IMP	A	2	AS NEEDED	75	\$182	2	AS NEEDED	75	\$182	Skylite Cave, five mile butte pvt pit (inactive), Brooks mainline railroad bed.
1014000	2.42	3.90	IMP	A	2	AS NEEDED	75	\$112	2	AS NEEDED	75	\$112	Skylite Cave, five mile butte pvt pit (inactive), Brooks mainline railroadbed.
1018000	0.00	0.71	BIT	B	2	ANNUAL	1295	\$919	3	ANNUAL	1295	\$919	horse camp - two trail heads - share cost with Willamette Ind, McKinzie Wagon RD, Scotts Pass Trail, Rd to old Sisters RS.
1018000	0.71	8.45	IMP	B	2	ANNUAL	486	\$3,762	3	ANNUAL	486	\$3,762	(Increase mtc lvl to whispering pine horse camp/ level 2 beyond)
1024000	0.00	1.70	IMP	A	2	AS NEEDED	75	\$128	2	AS NEEDED	75	\$128	Millican Crater Trail Head - low use
1026000	0.00	1.10	IMP	A	2	REGULAR	266	\$292	2	REGULAR	266	\$292	Scott Pass Road
1028000	0.00	3.16	IMP	A	2	ANNUAL	388	\$1,225	2	ANNUAL	388	\$1,225	mixed ownership with Willamette Ind - Heritage sites, Santiam Wagon Road
1028000	3.16	5.97	IMP	A	2	ANNUAL	388	\$1,091	2	ANNUAL	388	\$1,091	McKinzie Wagon RD.
1030000	0.00	2.24	IMP	A	2	REGULAR	236	\$527	2	REGULAR	236	\$527	
1030000	2.24	5.40	IMP	A	2	REGULAR	236	\$745	2	REGULAR	236	\$745	
1040000	0.00	1.00	AGG	A	2	REGULAR	334	\$334	2	REGULAR	334	\$334	share cost with Willamette Ind, McKinzie Wagon Rd.
1040000	1.00	1.62	IMP	A	2	REGULAR	236	\$146	2	REGULAR	236	\$146	
1040000	1.62	2.84	NAT	A	2	REGULAR	224	\$273	2	REGULAR	224	\$273	
1040000	2.84	3.52	IMP	A	2	REGULAR	236	\$160	2	REGULAR	236	\$160	
1040000	3.52	4.96	IMP	A	2	REGULAR	236	\$339	2	REGULAR	236	\$339	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
1100000	0.00	2.80	BIT	A	4	ANNUAL	1572	\$4,402	4	ANNUAL	1572	\$4,402	community ties to 3 Rivers subdivision due to only access for large RV's and mobile homes who can't use bridges on Jordan Road, Brooks Mainline Railroadbed.
1100000	2.80	7.14	BIT	A	4	ANNUAL	1572	\$6,829	4	ANNUAL	1572	\$6,829	
1100000	7.14	8.58	BIT	A	4	ANNUAL	1572	\$2,257	4	ANNUAL	1572	\$2,257	community ties to 3 Rivers subdivision due to only access for large RV's and mobile homes who can't use bridges on Jordan Road
1100000	8.58	10.01	BIT	A	4	ANNUAL	1572	\$2,248	4	ANNUAL	1572	\$2,248	community ties to 3 Rivers subdivision due to only access for large RV's and mobile homes who can't use bridges on Jordan Road
1100000	10.01	20.75	AGG	A	4	ANNUAL	877	\$9,419	4	ANNUAL	877	\$9,419	
1100021	0.00	0.65	BIT	B	3	ANNUAL	1307	\$850	4	ANNUAL	1307	\$850	Indian Ford Campground - Primary water site
1105000	0.00	2.80	IMP	A	2	AS NEEDED	63	\$177	2	AS NEEDED	63	\$177	base of black butte - seg 2 is used for mtn bike trai, Brooks Mainline railroad bed.
1105000	2.80	3.10	NAT	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	
1105000	3.10	6.00	NAT	A	2	AS NEEDED	63	\$183	2	AS NEEDED	63	\$183	base of black butte - seg 2 is used for mtn bike trail
1110000	0.00	0.60	AGG	A	3	ANNUAL	757	\$456	3	ANNUAL	757	\$456	main road up black butte to lookout, heavy use, needs more maintenance, trail head is promoted and advertised by black butte "hike the butte"
1110000	0.60	4.10	AGG	A	3	ANNUAL	757	\$2,647	3	ANNUAL	757	\$2,647	main road up black butte to lookout, heavy use, needs more maintenance, trail head is promoted and advertised by black butte "hike the butte"
1110000	4.10	5.05	NAT	A	2	ANNUAL	316	\$300	2	REGULAR	224	\$213	
1110000	5.05	5.25	NAT	A	2	ANNUAL	316	\$64	2	REGULAR	224	\$45	
1120000	0.00	0.30	IMP	A	2	ANNUAL	388	\$115	2	ANNUAL	388	\$115	back way to camp sherman, fire evac route
1120000	0.30	5.03	IMP	A	2	ANNUAL	388	\$1,836	2	ANNUAL	388	\$1,836	back way to camp sherman, fire evac route, road 1120200 wagon road.
1126000	0.00	1.40	IMP	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	mostly private - provides access to half and half cinder pit. Brooks Mainline Railroad bed.
1126000	1.40	1.53	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
1126000	1.53	4.30	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	mostly private - provides access to half and half cinder pit, Brooks mainline railroadbed.
1129000	0.00	1.70	IMP	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	mostly private - provides access to half and half cinder pit, Brooks mainline railroadbed.
1130000	0.00	3.01	IMP	A	2	AS NEEDED	63	\$190	2	AS NEEDED	63	\$190	share cost with Willamette Ind
1130000	3.01	4.50	IMP	A	2	AS NEEDED	63	\$94	2	AS NEEDED	63	\$94	share cost with Willamette Ind
1140000	0.00	2.63	IMP	A	2	ANNUAL	328	\$863	2	REGULAR	236	\$621	access Green Ridge Lookout
1140000	2.63	4.32	IMP	A	2	ANNUAL	328	\$554	2	REGULAR	236	\$399	
1140000	4.32	7.23	NAT	A	2	ANNUAL	316	\$920	2	REGULAR	224	\$652	
1140000	7.23	10.59	IMP	A	2	ANNUAL	328	\$1,102	2	REGULAR	236	\$793	
1149000	0.00	1.20	AGG	A	2	AS NEEDED	63	\$76	2	AS NEEDED	63	\$76	fire evac route - accesses summit of green ridge to fs/county repeater site
1149000	1.20	7.70	NAT	A	2	AS NEEDED	63	\$411	2	AS NEEDED	63	\$411	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
1150000	0.00	0.76	AGG	A	2	REGULAR	334	\$253	2	REGULAR	334	\$253	heaviest use road on north end of green ridge
1150000	0.76	14.05	AGG	A	2	REGULAR	334	\$4,432	2	REGULAR	334	\$4,432	
1152000	0.00	1.50	IMP	A	2	REGULAR	266	\$398	2	REGULAR	266	\$398	(1154 not in db or map - accesses green ridge L.O.)
1154000	0.00	0.70	AGG	A	2	REGULAR	334	\$233	2	REGULAR	334	\$233	CONNECTS 1150 TO 1140
1158000	0.00	2.70	IMP	A	2	AS NEEDED	75	\$203	2	AS NEEDED	75	\$203	
1160000	0.00	4.20	IMP	A	2	REGULAR	236	\$989	2	REGULAR	236	\$989	
1170000	0.00	2.30	AGG	A	3	ANNUAL	757	\$1,741	3	ANNUAL	757	\$1,741	road connecting 11 to county 64 - provides access to 3 Rivers subdivision and Lake Billy Chinook
1170000	2.30	4.90	AGG	A	3	ANNUAL	757	\$1,968	3	ANNUAL	757	\$1,968	
1180000	0.00	3.50	AGG	A	2	ANNUAL	486	\$1,701	2	ANNUAL	486	\$1,701	
1190000	0.00	7.60	IMP	A	2	AS NEEDED	63	\$480	2	AS NEEDED	63	\$480	accesses furthest point on green ridge
1190000	7.60	12.30	NAT	A	2	AS NEEDED	63	\$297	2	AS NEEDED	63	\$297	
1190000	12.30	13.30	NAT	A	2	AS NEEDED	63	\$63	2	AS NEEDED	63	\$63	
1193000	0.00	0.10	IMP	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	closed by gate - access lots of ground on breaks of Metolious River
1193000	0.10	2.10	IMP	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	
1193000	2.10	3.60	NAT	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	
1200000	0.00	4.53	BIT	A	5	ANNUAL	1572	\$7,121	5	ANNUAL	1572	\$7,121	secondary access for camp sherman and Metolious Basin - a main access route for Warm Springs Reservation, Huckel Berry Trail, Minto trail.
1200000	4.53	11.98	IMP	A	3	ANNUAL	659	\$4,906	3	ANNUAL	659	\$4,906	
1200000	11.98	11.98	IMP	A	3	ANNUAL	659	\$2	3	ANNUAL	659	\$2	
1200000	11.98	11.98	IMP	A	3	ANNUAL	659	\$2	3	ANNUAL	659	\$2	
1200000	11.98	13.06	IMP	A	3	ANNUAL	659	\$713	3	ANNUAL	659	\$713	
1200900	0.00	0.40	NAT	C	3	AS NEEDED	314	\$126	2	AS NEEDED	314	\$126	Abott Creek C.G. (could be reduced to ml 2)
1200980	0.00	1.60	IMP	A	3	ANNUAL	474	\$758	3	ANNUAL	474	\$758	Candle Creek C.G.
1210000	0.00	5.20	IMP	A	2	AS NEEDED	63	\$329	2	AS NEEDED	63	\$329	Access for Christian Camp and Trail Head
1210000	5.20	9.29	IMP	A	3	AS NEEDED	314	\$1,284	3	AS NEEDED	314	\$1,284	
1210000	9.29	9.94	AGG	A	3	AS NEEDED	314	\$204	3	AS NEEDED	314	\$204	
1210000	9.94	11.00	AGG	A	3	AS NEEDED	314	\$333	3	AS NEEDED	314	\$333	
1210600	0.00	0.60	NAT	A	3	ANNUAL	462	\$277	3	ANNUAL	462	\$277	Access for Christian Camp and Trail Head
1216000	0.00	1.00	AGG	A	3	ANNUAL	877	\$877	3	ANNUAL	877	\$877	
1216000	1.00	1.95	AGG	A	3	ANNUAL	877	\$833	3	ANNUAL	877	\$833	
1216000	1.95	3.28	AGG	A	3	ANNUAL	877	\$1,166	3	ANNUAL	877	\$1,166	
1217000	0.00	2.50	IMP	A	2	ANNUAL	328	\$820	2	ANNUAL	328	\$820	cut off road from camp sherman to suttle lake - Willamette agreement, Minto Trail. Possible location for waterline relocation.
1217000	2.50	3.50	BIT	B	3	ANNUAL	1572	\$1,572	4	ANNUAL	1572	\$1,572	
1220000	0.00	5.80	AGG	A	2	REGULAR	364	\$2,108	2	REGULAR	364	\$2,108	
1220000	5.80	6.96	NAT	C	2	REGULAR	224	\$259	1	REGULAR	224	\$259	
1230000	0.00	0.70	BIT	A	3	ANNUAL	1572	\$1,100	3	ANNUAL	1572	\$1,100	Jack Lake road - Cabot Lake T.H. - on edge of wilderness, Mento Trail.

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
1230000	0.70	1.70	AGG	A	3	ANNUAL	877	\$877	3	ANNUAL	877	\$877	
1230000	1.70	4.30	IMP	A	2	ANNUAL	388	\$1,009	2	ANNUAL	388	\$1,009	
1230000	4.30	8.60	IMP	A	2	ANNUAL	328	\$1,410	2	ANNUAL	328	\$1,410	Mento trail
1232000	0.00	1.20	IMP	A	3	ANNUAL	659	\$791	3	ANNUAL	659	\$791	Jack Creek Campground
1232000	1.20	3.30	IMP	A	2	REGULAR	236	\$495	2	REGULAR	236	\$495	
1232200	0.00	0.90	NAT	A	3	ANNUAL	647	\$582	3	ANNUAL	647	\$582	
1232400	0.00	0.30	IMP	A	3	ANNUAL	659	\$198	3	ANNUAL	659	\$198	Jack Cr. Day Use
1232400	0.30	0.60	IMP	C	2	REGULAR	236	\$71	1	REGULAR	236	\$71	(New road and Trail Head needs to be mapped)
1234000	0.00	5.90	AGG	A	3	ANNUAL	757	\$4,466	3	ANNUAL	757	\$4,466	Mento trail
1235000	0.00	3.80	IMP	A	2	ANNUAL	388	\$1,474	2	ANNUAL	388	\$1,474	Bear Valley Trailhead
1237000	0.00	1.10	IMP	A	2	REGULAR	236	\$259	2	REGULAR	236	\$259	
1237000	1.10	1.40	IMP	A	2	REGULAR	236	\$71	2	REGULAR	236	\$71	
1237000	1.40	3.70	IMP	A	2	REGULAR	236	\$542	2	REGULAR	236	\$542	(end segment needs to be remapped)
1260000	0.00	1.10	IMP	A	3	ANNUAL	534	\$587	3	ANNUAL	534	\$587	Sheep springs Horse Camp - first segment
1260000	1.10	3.00	IMP	A	2	REGULAR	236	\$447	2	REGULAR	236	\$447	
1260200	0.00	1.30	IMP	A	3	ANNUAL	474	\$616	3	ANNUAL	474	\$616	
1260200	1.30	1.90	NAT	A	2	REGULAR	224	\$134	2	REGULAR	224	\$134	
1270000	0.00	4.50	IMP	A	2	ANNUAL	328	\$1,476	2	ANNUAL	328	\$1,476	Schilling cinder pit
1280000	0.00	3.80	IMP	A	2	ANNUAL	328	\$1,246	2	REGULAR	236	\$897	
1290000	0.00	0.93	IMP	B	2	ANNUAL	388	\$361	3	ANNUAL	388	\$361	Access to Warm Springs Reservation - Candle Creek Bridge
1292000	0.00	2.30	IMP	A	2	ANNUAL	328	\$754	2	ANNUAL	328	\$754	Jefferson Creek Trailhead
1298000	0.00	2.40	IMP	A	2	REGULAR	236	\$565	2	REGULAR	236	\$565	secondary access/fire evac from Wizzard Falls fish hatchery - primary access for Nature Conservancy
1400000	2.60	13.22	BIT	A	4	ANNUAL	1572	\$16,695	4	ANNUAL	1572	\$16,695	
1400029	0.00	0.10	AC	A	5	ANNUAL	1572	\$157	5	ANNUAL	1572	\$157	information kiosk - relatively low use
1400140	0.00	0.30	AC	A	4	ANNUAL	1307	\$392	4	ANNUAL	1307	\$392	Head of the metolious developed site
1400700	0.00	0.08	BIT	B	3	ANNUAL	1307	\$105	4	ANNUAL	1307	\$105	Allen Springs Campground
1400800	0.00	0.40	BIT	B	3	ANNUAL	1307	\$523	4	ANNUAL	1307	\$523	Pioneer Ford Campground
1400900	0.00	0.10	AGG	A	3	AS NEEDED	277	\$28	3	AS NEEDED	277	\$28	Lower Bridge Campground
1419000	2.75	3.05	BIT	A	4	ANNUAL	1572	\$472	4	ANNUAL	1572	\$472	
1419060	0.00	0.34	IMP	A	3	ANNUAL	659	\$224	3	ANNUAL	659	\$224	TRANSFER SITE
1419700	0.83	1.53	NAT	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	
1419900	0.00	2.30	BIT	A	4	ANNUAL	1572	\$3,616	4	ANNUAL	1572	\$3,616	"campground strip" 5 campgrounds including allingham, backway to "House on the Metolious" Mento Trail. Possible location for waterline relocation for Allingham G.S.
1420000	0.00	0.68	BIT	A	4	ANNUAL	1572	\$1,069	4	ANNUAL	1572	\$1,069	New BST, winter access to Dahl Ranch - primary access to "House on the Metolius". Mento Trail
1420000	0.68	3.65	BIT	B	3	ANNUAL	1572	\$4,669	4	ANNUAL	1572	\$4,669	
1420400	0.00	0.80	AGG	A	3	REGULAR	480	\$384	3	REGULAR	480	\$384	Canyon Cr. C.G.
1425000	0.00	1.60	IMP	A	2	REGULAR	266	\$425	2	REGULAR	266	\$425	Mento trail
1430000	0.00	3.30	IMP	A	2	REGULAR	266	\$876	2	REGULAR	266	\$876	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
1490000	0.00	2.14	IMP	A	2	ANNUAL	513	\$1,095	2	ANNUAL	513	\$1,095	
1490000	2.14	3.93	IMP	A	2	ANNUAL	513	\$920	2	ANNUAL	513	\$920	
1490000	3.93	4.70	IMP	A	2	ANNUAL	328	\$253	2	REGULAR	236	\$182	
1490000	4.70	5.37	AGG	A	2	ANNUAL	426	\$285	2	REGULAR	334	\$224	
1490000	5.37	5.84	AGG	A	2	ANNUAL	426	\$200	2	REGULAR	334	\$157	
1499000	0.00	1.51	NAT	A	2	REGULAR	224	\$337	2	REGULAR	224	\$337	closed by gate - pvt access through gate (could be 1490900),
1499000	1.51	7.50	NAT	A	2	REGULAR	224	\$1,339	2	REGULAR	224	\$1,339	
1499000	7.50	9.60	NAT	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	
1500000	0.00	1.20	BIT	B	3	ANNUAL	1572	\$1,886	4	ANNUAL	1572	\$1,886	McKinzie Wagon RD.
1500000	1.20	7.20	AGG	A	3	ANNUAL	877	\$5,262	3	ANNUAL	877	\$5,262	
1500000	7.20	10.80	IMP	A	2	ANNUAL	426	\$1,534	2	REGULAR	236	\$850	
1505000	0.00	0.80	IMP	A	2	AS NEEDED	75	\$60	2	AS NEEDED	75	\$60	edgington road - county rd
1505000	0.80	6.13	IMP	A	2	AS NEEDED	63	\$337	2	AS NEEDED	63	\$337	
1505000	6.13	8.33	NAT	A	2	AS NEEDED	63	\$139	2	AS NEEDED	63	\$139	
1510000	0.00	1.29	IMP	A	2	AS NEEDED	63	\$82	2	AS NEEDED	63	\$82	Hap Taylor Gravel Pit - HT has easement and all mtc on west end
1510000	1.29	2.46	IMP	A	2	AS NEEDED	63	\$74	2	AS NEEDED	63	\$74	
1510000	2.46	3.10	IMP	A	2	AS NEEDED	63	\$40	2	AS NEEDED	63	\$40	
1512000	0.00	2.00	IMP	A	2	AS NEEDED	63	\$126	2	AS NEEDED	63	\$126	
1513000	0.00	3.88	AGG	A	2	AS NEEDED	63	\$245	2	AS NEEDED	63	\$245	primary access to Chang's property
1514000	0.00	1.32	IMP	A	2	ANNUAL	328	\$433	2	ANNUAL	328	\$433	Squaw creek gravel pit
1514000	1.32	8.25	AGG	A	2	ANNUAL	426	\$2,952	2	ANNUAL	426	\$2,952	
1516000	0.00	3.70	IMP	A	2	REGULAR	266	\$982	2	REGULAR	266	\$982	
1520000	0.00	3.90	IMP	A	2	REGULAR	236	\$918	2	REGULAR	236	\$918	Whispering Pines Horse Camp
1520000	3.90	4.00	IMP	A	2	REGULAR	236	\$24	2	REGULAR	236	\$24	
1526000	0.00	3.15	IMP	A	2	REGULAR	266	\$836	2	REGULAR	266	\$836	Pole creek cinder pit
1526000	3.15	3.40	NAT	A	2	REGULAR	254	\$63	2	REGULAR	254	\$63	
1600000	4.40	8.49	BIT	A	4	ANNUAL	1572	\$6,426	4	ANNUAL	1572	\$6,426	
1600000	8.49	14.29	BIT	A	4	ANNUAL	1572	\$9,121	4	ANNUAL	1572	\$9,121	McKinzie Wagon RD.
1600000	14.29	14.94	IMP	A	3	ANNUAL	659	\$428	3	ANNUAL	659	\$428	
1600000	14.94	16.48	IMP	A	3	ANNUAL	779	\$1,200	3	ANNUAL	779	\$1,200	
1600000	16.48	16.60	IMP	A	3	ANNUAL	659	\$79	3	ANNUAL	659	\$79	
1600550	0.00	0.36	IMP	C	3	AS NEEDED	314	\$113	2	AS NEEDED	314	\$113	Black Pine Springs CG - breached closure - now dispersed site - high use for snowmobilers
1600550	0.36	1.22	IMP	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	
1600550	1.22	1.23	IMP	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	Black Pine Springs CG - breached closure - now dispersed site - high use for snowmobilers
1600800	0.00	0.40	AGG	A	3	ANNUAL	757	\$303	3	ANNUAL	757	\$303	3 creeks meadow horse camp, Snow Creek Ditch.
1600820	0.00	0.12	NAT	A	3	ANNUAL	647	\$78	3	ANNUAL	647	\$78	driftwood campground - little 3 creeks trailhead
1600825	0.00	0.20	AGG	A	3	ANNUAL	757	\$151	3	ANNUAL	757	\$151	TRAPPER MEADOW
1600900	0.00	0.60	IMP	A	3	ANNUAL	659	\$395	3	ANNUAL	659	\$395	Three creeks lake campground, Snow Creek Ditch.

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
1605000	0.00	1.20	IMP	A	2	AS NEEDED	75	\$90	2	AS NEEDED	75	\$90	old mainline road - bridge recently converted to foot bridge - no vehicle access across
1608000	0.00	0.41	BIT	A	2	AS NEEDED	1030	\$422	2	AS NEEDED	1030	\$422	
1608000	0.41	1.64	AGG	A	2	REGULAR	334	\$410	2	REGULAR	334	\$410	
1608000	1.64	1.90	AGG	A	2	REGULAR	334	\$87	2	REGULAR	334	\$87	Brooks Mainline railroad bed.
1608000	1.90	2.15	AGG	A	2	REGULAR	334	\$83	2	REGULAR	334	\$83	
1608000	2.15	3.37	NAT	C	2	REGULAR	224	\$273	1	REGULAR	224	\$273	
1612000	2.35	2.83	IMP	A	2	REGULAR	236	\$113	2	REGULAR	236	\$113	
1620000	0.00	5.49	IMP	A	2	AS NEEDED	75	\$413	2	AS NEEDED	75	\$413	Snow Creek Ditch.
1620000	5.49	5.66	IMP	A	2	AS NEEDED	75	\$12	2	AS NEEDED	75	\$12	
1620000	5.66	5.80	BIT	A	2	AS NEEDED	1295	\$181	2	AS NEEDED	1295	\$181	
1622000	0.00	0.60	NAT	A	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	
1624000	0.00	1.40	IMP	A	2	AS NEEDED	75	\$105	2	AS NEEDED	75	\$105	
1628000	0.00	3.22	IMP	A	2	AS NEEDED	63	\$204	2	AS NEEDED	63	\$204	irrigation ditch access, Snow Creek Ditch.
1628000	3.22	4.36	IMP	C	2	AS NEEDED	63	\$72	1	AS NEEDED	63	\$72	
1800000	1.84	6.96	BIT	A	5	ANNUAL	1572	\$8,053	5	ANNUAL	1572	\$8,053	
1800000	6.96	9.17	BIT	A	5	ANNUAL	1572	\$3,469	5	ANNUAL	1572	\$3,469	one of two most important routes on Ft Rock - missing part of seg 1 (disconnected) - gave developed use a 6 hard to give 8 when compared to "high" on Bend District
1800000	9.17	16.95	AGG	B	3	ANNUAL	877	\$6,821	4	ANNUAL	877	\$6,821	
1800000	16.95	25.37	AGG	B	3	ANNUAL	1122	\$9,448	4	ANNUAL	1122	\$9,448	Brooks Camp2 railroad logging
1800000	25.37	31.48	AGG	B	3	ANNUAL	1122	\$6,861	4	ANNUAL	1122	\$6,861	one of two most important routes on Ft Rock - missing part of seg 1 (disconnected) - gave developed use a 6 hard to give 8 when compared to "high" on Bend District
1800000	31.48	37.29	AGG	B	3	ANNUAL	1122	\$6,509	4	ANNUAL	1122	\$6,509	one of two most important routes on Ft Rock - missing part of seg 1 (disconnected) - gave developed use a 6 hard to give 8 when compared to "high" on Bend District East Butte telephone line.
1800000	37.29	37.94	AGG	B	3	ANNUAL	1122	\$735	4	ANNUAL	1122	\$735	
1800000	37.94	40.01	AGG	A	4	ANNUAL	1122	\$2,323	4	ANNUAL	1122	\$2,323	
1800000	40.01	42.06	AGG	A	3	ANNUAL	1122	\$2,305	3	ANNUAL	1122	\$2,305	
1800000	42.06	46.66	AGG	A	3	ANNUAL	1122	\$5,157	3	ANNUAL	1122	\$5,157	one of two most important routes on Ft Rock - missing part of seg 1 (disconnected) - gave developed use a 6 hard to give 8 when compared to "high" on Bend District
1800010	0.00	0.24	IMP	A	3	ANNUAL	1024	\$246	3	ANNUAL	1024	\$246	Bend/Pine Nursery Admin Site
1800010	0.24	1.60	IMP	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
1800200	0.00	0.95	IMP	A	3	AS NEEDED	314	\$298	3	AS NEEDED	314	\$298	Wind Cave - surfaced to cave, level 2 beyond
1800200	0.95	1.60	NAT	A	2	AS NEEDED	63	\$41	2	AS NEEDED	63	\$41	
1801000	0.00	0.22	IMP	A	2	AS NEEDED	63	\$14	2	AS NEEDED	63	\$14	
1801000	0.22	2.14	NAT	A	2	AS NEEDED	63	\$121	2	AS NEEDED	63	\$121	
1810000	0.00	5.57	IMP	B	2	ANNUAL	633	\$3,526	3	ANNUAL	877	\$4,885	
1810000	5.57	10.57	IMP	A	2	ANNUAL	633	\$3,165	2	ANNUAL	633	\$3,165	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
1814000	0.00	0.88	NAT	D	2	AS NEEDED	63	\$56	2	AS NEEDED	63	\$56	minor collector
1814000	0.88	3.28	NAT	D	2	AS NEEDED	63	\$151	2	AS NEEDED	63	\$151	
1814000	3.28	6.24	NAT	A	2	AS NEEDED	63	\$187	2	AS NEEDED	63	\$187	
1815000	0.00	0.79	IMP	B	3	ANNUAL	1024	\$804	4	ANNUAL	1572	\$1,234	lots of use and community ties
1815000	0.79	2.56	IMP	B	3	ANNUAL	1024	\$1,818	4	ANNUAL	1572	\$2,790	
1815800	0.00	0.23	IMP	A	3	AS NEEDED	314	\$71	3	AS NEEDED	314	\$71	Horse Butte Trail head
1815800	0.23	0.47	IMP	A	3	AS NEEDED	314	\$77	3	AS NEEDED	314	\$77	
1816000	0.00	2.27	IMP	A	2	ANNUAL	328	\$745	2	ANNUAL	328	\$745	Swamp Wells campground
1816000	2.27	3.17	NAT	A	2	ANNUAL	316	\$284	2	ANNUAL	316	\$284	
1818000	0.00	1.34	IMP	A	2	AS NEEDED	63	\$85	2	AS NEEDED	63	\$85	tie through from 1810 to 1820
1818000	1.34	4.10	IMP	A	2	AS NEEDED	63	\$174	2	AS NEEDED	63	\$174	
1819000	0.00	1.51	IMP	A	2	AS NEEDED	63	\$95	2	AS NEEDED	63	\$95	Skeleton Cave - only first quarter mile is of interest
1819000	1.51	2.96	NAT	A	2	AS NEEDED	63	\$92	2	AS NEEDED	63	\$92	
1820000	0.00	10.88	IMP	A	2	AS NEEDED	63	\$688	2	AS NEEDED	63	\$688	
1825000	0.00	4.62	IMP	A	2	AS NEEDED	63	\$292	2	AS NEEDED	63	\$292	
1825000	4.62	9.49	NAT	A	2	AS NEEDED	63	\$308	2	AS NEEDED	63	\$308	
1825000	9.49	10.67	NAT	A	2	AS NEEDED	63	\$75	2	AS NEEDED	63	\$75	
1825000	10.67	11.19	IMP	A	2	AS NEEDED	63	\$33	2	AS NEEDED	63	\$33	
1829000	0.00	3.27	NAT	A	2	AS NEEDED	63	\$207	2	AS NEEDED	63	\$207	
1830000	0.00	5.10	NAT	A	2	AS NEEDED	63	\$322	2	AS NEEDED	63	\$322	
1835000	0.00	5.90	IMP	A	2	AS NEEDED	63	\$373	2	AS NEEDED	63	\$373	
1840000	0.00	6.08	NAT	A	2	AS NEEDED	63	\$384	2	AS NEEDED	63	\$384	
1840000	6.08	6.54	NAT	A	2	AS NEEDED	63	\$29	2	AS NEEDED	63	\$29	
1845000	0.00	4.89	IMP	A	2	AS NEEDED	63	\$309	2	AS NEEDED	63	\$309	
1845000	4.89	6.75	NAT	A	2	AS NEEDED	63	\$118	2	AS NEEDED	63	\$118	
1849000	0.00	4.02	IMP	A	2	AS NEEDED	63	\$254	2	AS NEEDED	63	\$254	to top of China Hat
1849000	4.02	4.19	NAT	A	2	AS NEEDED	63	\$11	2	AS NEEDED	63	\$11	
1849000	4.19	5.45	NAT	A	2	AS NEEDED	63	\$80	2	AS NEEDED	63	\$80	to top of China Hat
1849000	5.45	5.83	NAT	A	2	AS NEEDED	63	\$24	2	AS NEEDED	63	\$24	
1849000	5.83	6.21	NAT	A	2	AS NEEDED	63	\$24	2	AS NEEDED	63	\$24	
1849000	6.21	6.34	NAT	A	2	AS NEEDED	63	\$8	2	AS NEEDED	63	\$8	
1849000	6.34	6.40	NAT	A	2	AS NEEDED	63	\$4	2	AS NEEDED	63	\$4	
1850000	0.00	2.32	IMP	A	2	ANNUAL	328	\$762	2	ANNUAL	328	\$762	water source (well)
1850000	2.32	2.62	IMP	A	2	ANNUAL	328	\$97	2	ANNUAL	328	\$97	water source (well)
1850000	2.62	3.57	NAT	A	2	ANNUAL	316	\$300	2	ANNUAL	316	\$300	
2000010	0.00	0.20	AC	A	4	ANNUAL	1572	\$314	4	ANNUAL	1572	\$314	East Portal Road / City of Sisters and District are disussing transfer of jurisdiction from FS to the City.
2015000	6.67	7.26	AGG	A	3	ANNUAL	632	\$373	3	ANNUAL	632	\$373	
2016000	2.67	6.65	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
2017000	3.52	8.04	AGG	A	3	ANNUAL	877	\$3,966	3	ANNUAL	877	\$3,966	
2017000	8.04	8.31	AGG	A	3	ANNUAL	877	\$235	3	ANNUAL	877	\$235	Pine Mountain from Millican - Pine Mountain Observatory

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
2017000	8.31	8.43	NAT	A	2	ANNUAL	501	\$59	2	AS NEEDED	63	\$7	
2017000	8.43	8.99	NAT	A	2	ANNUAL	501	\$281	2	AS NEEDED	63	\$35	
2017000	8.99	10.46	NAT	A	2	AS NEEDED	63	\$93	2	AS NEEDED	63	\$93	
2017000	11.85	12.51	NAT	A	2	AS NEEDED	63	\$42	2	AS NEEDED	63	\$42	
2017500	0.00	0.03	AGG	A	3	AS NEEDED	277	\$8	3	AS NEEDED	277	\$8	road into Pine Mtn CG and Comm site - top of butte
2017500	0.03	0.13	AGG	A	3	AS NEEDED	277	\$29	3	AS NEEDED	277	\$29	road into Pine Mtn CG and Comm site - top of butte
2017500	0.13	0.23	AGG	A	3	AS NEEDED	277	\$27	3	AS NEEDED	277	\$27	
2017501	0.00	0.10	NAT	A	3	AS NEEDED	277	\$28	3	AS NEEDED	277	\$28	spur into observatory
2050000	4.70	6.00	AGG	A	2	AS NEEDED	63	\$82	2	AS NEEDED	63	\$82	
2050000	6.00	8.50	AGG	A	2	AS NEEDED	63	\$158	2	AS NEEDED	63	\$158	pvt access - Willamette does most maintenance, incomplete data.
2050000	8.50	11.10	NAT	A	2	AS NEEDED	63	\$164	2	AS NEEDED	63	\$164	
2052000	0.00	4.15	IMP	A	2	AS NEEDED	75	\$312	2	AS NEEDED	75	\$312	
2055000	0.00	5.77	NAT	A	2	AS NEEDED	63	\$364	2	AS NEEDED	63	\$364	needs better signing - hard to find your way through
2055000	5.77	7.10	NAT	A	2	AS NEEDED	63	\$84	2	AS NEEDED	63	\$84	needs better signing - hard to find your way through
2058000	0.25	0.65	BIT	B	2	AS NEEDED	1295	\$518	3	REGULAR	1572	\$629	
2058000	0.65	2.45	AGG	B	2	AS NEEDED	63	\$114	3	REGULAR	480	\$864	
2058000	2.45	4.20	NAT	B	2	AS NEEDED	63	\$111	3	REGULAR	480	\$840	
2058030	0.00	0.31	BIT	A	3	ANNUAL	1307	\$405	3	ANNUAL	1307	\$405	DISTRICT OFFICE & RESIDENCES
2058080	0.00	0.20	BIT	A	3	ANNUAL	1307	\$261	3	ANNUAL	1307	\$261	district warehouse (admin site)
2058100	0.00	0.60	BIT	A	3	ANNUAL	1307	\$784	3	ANNUAL	1307	\$784	Cutoff road from north end of compoud to HWY 20.
2059000	0.00	3.40	NAT	A	2	AS NEEDED	63	\$215	2	AS NEEDED	63	\$215	Zimmerman Pit access
2060000	1.76	4.22	IMP	A	2	AS NEEDED	63	\$155	2	AS NEEDED	63	\$155	
2061000	0.00	0.13	AGG	A	2	AS NEEDED	75	\$10	2	AS NEEDED	75	\$10	Brooks Mainline Railroad Bed.
2061000	0.13	0.55	AGG	A	2	AS NEEDED	75	\$32	2	AS NEEDED	75	\$32	Brooks Mainline railroad bed.
2061000	0.55	1.29	AGG	A	2	AS NEEDED	75	\$56	2	AS NEEDED	75	\$56	
2061000	1.29	4.70	AGG	A	2	AS NEEDED	75	\$256	2	AS NEEDED	75	\$256	
2064000	0.00	2.60	IMP	A	2	AS NEEDED	63	\$164	2	AS NEEDED	63	\$164	
2066000	0.00	0.20	AGG	A	2	ANNUAL	486	\$97	2	ANNUAL	486	\$97	back access to suttle and scout lakes, Brooks Mainline Railroadbed.
2066000	0.20	2.77	AGG	A	2	ANNUAL	486	\$1,249	2	ANNUAL	486	\$1,249	
2066000	2.77	3.00	BIT	B	3	ANNUAL	1572	\$362	4	ANNUAL	1572	\$362	
2066700	0.00	0.40	AC	B	3	ANNUAL	1307	\$523	4	ANNUAL	1307	\$523	Scout Lake road
2066705	0.00	0.20	BIT	B	3	ANNUAL	1307	\$261	4	ANNUAL	1307	\$261	Scout Lake day use
2067000	0.00	3.00	AGG	A	2	ANNUAL	486	\$1,458	2	ANNUAL	486	\$1,458	Brooks Mainline railroad bed, Santam Wagon road.
2067000	3.00	5.35	AGG	A	2	ANNUAL	486	\$1,142	2	ANNUAL	486	\$1,142	
2068000	0.00	1.52	AGG	A	2	ANNUAL	486	\$739	2	ANNUAL	486	\$739	secondary access to meadow lakes, Brooks Mainline Railroadbed.
2068000	1.52	4.00	IMP	A	2	ANNUAL	388	\$962	2	ANNUAL	388	\$962	
2070000	0.00	2.50	BIT	A	5	ANNUAL	1572	\$3,930	5	ANNUAL	1572	\$3,930	
2070450	0.00	0.08	BIT	B	3	ANNUAL	1307	\$107	4	ANNUAL	1307	\$107	blue bay campground
2070450	0.08	0.09	BIT	B	3	ANNUAL	1307	\$16	4	ANNUAL	1307	\$16	
2070450	0.08	0.09	BIT	B	3	ANNUAL	1307	\$16	4	ANNUAL	1307	\$16	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
2070450	0.09	0.10	BIT	B	3	ANNUAL	1307	\$8	4	ANNUAL	1307	\$8	
2070500	0.00	0.30	BIT	B	3	ANNUAL	1307	\$392	4	ANNUAL	1307	\$392	South shore campground
2070700	0.00	0.11	AC	B	3	ANNUAL	1307	\$144	4	ANNUAL	1307	\$144	link creek campground
2070700	0.11	0.11	AC	B	3	ANNUAL	1307	\$5	4	ANNUAL	1307	\$5	
2070700	0.11	0.11	AC	B	3	ANNUAL	1307	\$5	4	ANNUAL	1307	\$5	
2070700	0.11	0.20	AC	B	3	ANNUAL	1307	\$112	4	ANNUAL	1307	\$112	
2076000	0.00	2.75	IMP	B	2	ANNUAL	328	\$902	3	ANNUAL	474	\$1,304	Corbit snowpark
2076000	2.75	2.89	IMP	B	2	ANNUAL	328	\$46	3	ANNUAL	474	\$67	
2076000	2.89	2.95	IMP	B	2	ANNUAL	328	\$19	3	ANNUAL	474	\$28	
2076000	2.89	2.95	IMP	B	2	ANNUAL	328	\$19	3	ANNUAL	474	\$28	
2100000	18.38	19.78	IMP	A	2	ANNUAL	633	\$883	2	ANNUAL	633	\$883	
2100000	19.78	20.33	IMP	A	2	ANNUAL	633	\$351	2	ANNUAL	633	\$351	analyzed as two segments - seg1 from hwy97 to E.Lake - seg2 from E.Lake to 18 road incomplete data from heritage.
2100000	20.33	24.39	NAT	A	2	ANNUAL	621	\$2,523	2	ANNUAL	621	\$2,523	
2100000	24.39	27.39	NAT	A	2	ANNUAL	621	\$1,862	2	ANNUAL	621	\$1,862	analyzed as two segments - seg1 from hwy97 to E.Lake - seg2 from E.Lake to 18 road
2100000	27.39	27.60	NAT	A	2	ANNUAL	621	\$130	2	ANNUAL	621	\$130	
2100050	0.00	0.74	AGG	A	3	AS NEEDED	314	\$232	3	AS NEEDED	314	\$232	Ogden Group Camp spur rd.
2100055	0.00	0.17	AGG	A	3	AS NEEDED	314	\$53	3	AS NEEDED	314	\$53	PETER SKEEN OGDEN GROUP SITE
2100060	0.00	0.34	P - AC	A	3	AS NEEDED	314	\$107	3	AS NEEDED	314	\$107	Prairie Campground
2100200	0.00	0.20	AC	A	3	ANNUAL	1572	\$314	3	ANNUAL	1572	\$314	Sixmile snowpark
2100400	0.00	0.04	AC	A	3	ANNUAL	1572	\$61	3	ANNUAL	1572	\$61	tenmile snowpark, wooden pipe line
2100400	0.04	0.13	AC	A	3	ANNUAL	1572	\$135	3	ANNUAL	1572	\$135	wooden pipe line.
2100400	0.13	0.13	AC	A	3	ANNUAL	1572	\$14	3	ANNUAL	1572	\$14	
2100400	0.20	0.23	AC	A	3	ANNUAL	1572	\$50	3	ANNUAL	1572	\$50	
2100400	0.23	0.30	AC	A	3	ANNUAL	1572	\$112	3	ANNUAL	1572	\$112	
2100450	0.00	0.18	BIT	A	4	ANNUAL	1307	\$235	4	ANNUAL	1307	\$235	PAULINA CREEK FALLS
2100500	0.00	1.53	NAT	A	3	ANNUAL	647	\$992	3	ANNUAL	647	\$992	Paulina Peak Road
2100500	1.53	2.20	NAT	A	3	ANNUAL	647	\$433	3	ANNUAL	647	\$433	Paulina Peak Road
2100500	2.20	3.90	NAT	A	3	ANNUAL	647	\$1,096	3	ANNUAL	647	\$1,096	Paulina Peak Road
2100500	3.90	3.93	NAT	A	3	ANNUAL	647	\$21	3	ANNUAL	647	\$21	
2100500	3.93	4.00	NAT	A	3	ANNUAL	647	\$44	3	ANNUAL	647	\$44	
2100500	4.00	4.02	NAT	A	3	ANNUAL	647	\$16	3	ANNUAL	647	\$16	
2100505	0.00	0.18	BIT	A	3	ANNUAL	1307	\$235	3	ANNUAL	1307	\$235	Paulina Lake Lodge
2100507	0.00	0.10	AC	A	4	ANNUAL	1307	\$131	4	ANNUAL	1307	\$131	PAULINA LAKE BOAT RAMP
2100530	0.00	0.61	BIT	B	3	ANNUAL	1307	\$797	4	ANNUAL	1307	\$797	Paulina Lake campground
2100530	0.61	0.81	BIT	B	3	ANNUAL	1307	\$261	4	ANNUAL	1307	\$261	
2100540	0.00	0.10	AGG	A	3	ANNUAL	757	\$76	3	ANNUAL	757	\$76	DUMP STATION
2100560	0.00	0.77	IMP	A	4	ANNUAL	474	\$365	4	ANNUAL	474	\$365	CHEIF PAULINA HORSE CAMP
2100565	0.00	0.31	AC	C	5	ANNUAL	1307	\$405	4	ANNUAL	1307	\$405	Newberry Group site
2100570	0.00	1.08	BIT	B	3	ANNUAL	1307	\$1,412	4	ANNUAL	1307	\$1,412	Little Crater CG

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
2100580	0.00	0.10	BIT	A	4	ANNUAL	1307	\$131	4	ANNUAL	1307	\$131	Obsidian Flow
2100580	0.10	0.13	BIT	A	4	ANNUAL	1307	\$33	4	ANNUAL	1307	\$33	
2100660	0.00	0.51	BIT	B	3	ANNUAL	1307	\$667	4	ANNUAL	1307	\$667	East Lake CG
2100680	0.00	0.42	BIT	B	3	ANNUAL	1307	\$549	4	ANNUAL	1307	\$549	Hot Springs Day Use and Boat Launch
2100690	0.00	0.04	BIT	B	3	ANNUAL	1307	\$52	4	ANNUAL	1307	\$52	Hot Springs CG
2100700	0.00	1.92	BIT	B	3	ANNUAL	1307	\$2,509	4	ANNUAL	1307	\$2,509	Cinder Hill CG
2100710	0.00	0.10	BIT	A	3	ANNUAL	1307	\$131	3	ANNUAL	1307	\$131	East Lake Lodge
2100730	0.00	0.25	BIT	B	3	ANNUAL	1307	\$327	4	ANNUAL	1307	\$327	CINDER HILL CG LOOP
2100750	0.00	0.10	AGG	A	3	ANNUAL	572	\$57	3	ANNUAL	572	\$57	ON EAST LAKE?
2120000	0.00	2.45	AGG	A	3	ANNUAL	877	\$2,151	3	ANNUAL	877	\$2,151	McKay Crossing
2120000	2.45	2.54	AGG	A	3	ANNUAL	877	\$76	3	ANNUAL	877	\$76	
2120000	2.45	2.54	AGG	A	3	ANNUAL	877	\$76	3	ANNUAL	877	\$76	
2120991	0.00	0.14	AGG	A	3	ANNUAL	572	\$80	3	ANNUAL	572	\$80	MCKAY CROSSING LOOP A
2120993	0.00	0.14	BIT	A	3	ANNUAL	1307	\$183	3	ANNUAL	1307	\$183	MCKAY CROSSING LOOP B
2121000	0.00	0.39	IMP	A	2	AS NEEDED	75	\$29	2	AS NEEDED	75	\$29	9 for Archeology - old pipeline runs along it
2121000	0.39	2.67	IMP	A	2	AS NEEDED	75	\$171	2	AS NEEDED	75	\$171	9 for Archeology - old pipeline runs along it
2121000	2.67	6.39	IMP	A	2	AS NEEDED	75	\$280	2	AS NEEDED	75	\$280	9 for Archeology - old pipeline runs along it
2121000	6.39	8.52	IMP	A	2	AS NEEDED	75	\$160	2	AS NEEDED	75	\$160	
2125000	0.00	3.43	NAT	A	2	AS NEEDED	63	\$217	2	AS NEEDED	63	\$217	
2125000	3.43	4.40	NAT	A	2	AS NEEDED	63	\$62	2	AS NEEDED	63	\$62	
2127000	0.00	2.24	NAT	A	2	AS NEEDED	63	\$142	2	AS NEEDED	63	\$142	
2127000	2.24	6.69	NAT	A	2	AS NEEDED	63	\$281	2	AS NEEDED	63	\$281	
2127000	6.69	8.02	IMP	A	2	AS NEEDED	63	\$84	2	AS NEEDED	63	\$84	first mile lots of private ownership. Major portal for Lapine. Some concetion FortRock to LaPine.first 18 miles paved.
2154000	6.50	6.90	AGG	A	3	ANNUAL	0	\$0	3	ANNUAL	0	\$0	WILLAMETTE ROAD: Willamette NF is proposing to upgrade this road - will need close coordination on how we want to manage road segment on Deschutes NF.
2200000	1.22	1.42	BIT	B	4	ANNUAL	1572	\$311	5	ANNUAL	1572	\$311	
2200000	1.42	3.10	BIT	B	4	ANNUAL	1572	\$2,644	5	ANNUAL	1572	\$2,644	
2200000	3.10	8.62	BIT	B	4	ANNUAL	1572	\$8,677	5	ANNUAL	1572	\$8,677	
2200000	8.62	11.32	BIT	A	4	ANNUAL	1572	\$4,244	4	ANNUAL	1572	\$4,244	
2200000	11.32	17.40	BIT	A	4	ANNUAL	1572	\$9,556	4	ANNUAL	1572	\$9,556	
2200000	17.40	24.93	BIT	A	4	ANNUAL	1572	\$11,834	4	ANNUAL	1572	\$11,834	
2200000	24.93	26.73	BIT	A	4	ANNUAL	1572	\$2,834	4	ANNUAL	1572	\$2,834	
2200000	26.73	32.53	IMP	A	2	ANNUAL	328	\$1,902	2	ANNUAL	328	\$1,902	
2200000	32.53	32.68	IMP	A	2	ANNUAL	388	\$60	2	ANNUAL	388	\$60	
2200000	32.68	41.20	IMP	A	2	ANNUAL	388	\$3,304	2	ANNUAL	388	\$3,304	
2200550	0.00	0.10	AGG	A	3	AS NEEDED	277	\$28	3	AS NEEDED	277	\$28	Ice cave parking lot
2205000	0.00	0.44	NAT	A	2	AS NEEDED	63	\$28	2	AS NEEDED	63	\$28	goes through state and BLM, access to scaling station, FS only has small section at the beginning.
2205000	0.44	2.31	NAT	A	2	AS NEEDED	63	\$118	2	AS NEEDED	63	\$118	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
2210000	0.00	0.94	IMP	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	8 miles ours, rest is private -crownland large parcell. Legal access, logging cam;p
2210000	0.94	1.83	IMP	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
2210000	1.83	4.30	IMP	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
2210000	4.30	8.42	IMP	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
2215000	0.00	1.56	IMP	A	2	AS NEEDED	63	\$98	2	AS NEEDED	63	\$98	wooden pipe line.
2215000	1.56	6.24	IMP	A	2	AS NEEDED	63	\$296	2	AS NEEDED	63	\$296	wooden pipe line.
2220000	0.00	3.43	IMP	A	2	ANNUAL	388	\$1,331	2	ANNUAL	388	\$1,331	loop rd, access to some of crown's land
2220000	3.43	4.57	NAT	A	2	ANNUAL	316	\$360	2	ANNUAL	316	\$360	
2220000	4.57	6.04	IMP	A	2	ANNUAL	388	\$570	2	ANNUAL	388	\$570	
2220000	6.04	6.26	NAT	A	2	ANNUAL	316	\$70	2	ANNUAL	316	\$70	
2220000	6.26	6.29	NAT	A	2	ANNUAL	316	\$9	2	ANNUAL	316	\$9	
2220000	6.29	8.41	NAT	A	2	ANNUAL	316	\$670	2	ANNUAL	316	\$670	
2220000	9.36	9.51	NAT	A	2	AS NEEDED	63	\$9	2	AS NEEDED	63	\$9	
2220000	11.79	12.81	NAT	A	2	AS NEEDED	63	\$64	2	AS NEEDED	63	\$64	
2222000	0.00	4.41	IMP	A	2	AS NEEDED	63	\$279	2	AS NEEDED	63	\$279	
2222000	4.41	5.67	IMP	A	2	AS NEEDED	63	\$80	2	AS NEEDED	63	\$80	
2222000	5.67	7.41	IMP	A	2	AS NEEDED	63	\$110	2	AS NEEDED	63	\$110	
2225000	0.00	4.42	IMP	A	2	AS NEEDED	63	\$279	2	AS NEEDED	63	\$279	
2225000	4.42	7.13	IMP	A	2	AS NEEDED	63	\$171	2	AS NEEDED	63	\$171	
2225000	7.13	9.65	NAT	A	2	AS NEEDED	63	\$159	2	AS NEEDED	63	\$159	
2225000	9.65	11.25	IMP	A	2	AS NEEDED	63	\$101	2	AS NEEDED	63	\$101	
2225000	11.25	14.35	IMP	A	2	AS NEEDED	63	\$196	2	AS NEEDED	63	\$196	
2227000	0.00	1.82	IMP	A	2	AS NEEDED	63	\$115	2	AS NEEDED	63	\$115	
2227000	1.82	5.43	IMP	A	2	AS NEEDED	63	\$228	2	AS NEEDED	63	\$228	
2230000	0.00	3.94	AGG	A	2	ANNUAL	426	\$1,677	2	ANNUAL	426	\$1,677	long road, major haul road, access to ??
2230000	3.94	4.37	AGG	A	2	ANNUAL	426	\$184	2	ANNUAL	426	\$184	
2230000	4.37	10.94	AGG	A	2	ANNUAL	426	\$2,799	2	ANNUAL	426	\$2,799	
2233000	0.00	0.35	IMP	A	2	AS NEEDED	63	\$22	2	AS NEEDED	63	\$22	
2233000	0.35	2.41	NAT	A	2	AS NEEDED	63	\$130	2	AS NEEDED	63	\$130	
2233000	2.41	4.38	IMP	A	2	AS NEEDED	63	\$125	2	AS NEEDED	63	\$125	
2235000	0.00	1.13	IMP	A	2	AS NEEDED	63	\$71	2	AS NEEDED	63	\$71	
2235000	1.13	2.00	IMP	A	2	AS NEEDED	63	\$55	2	AS NEEDED	63	\$55	
2235000	2.00	4.97	NAT	A	2	AS NEEDED	63	\$188	2	AS NEEDED	63	\$188	
2235000	4.97	5.18	NAT	A	2	AS NEEDED	63	\$13	2	AS NEEDED	63	\$13	
2236000	0.00	2.67	NAT	A	2	AS NEEDED	63	\$169	2	AS NEEDED	63	\$169	active timber sale
2236000	2.67	4.32	NAT	A	2	AS NEEDED	63	\$104	2	AS NEEDED	63	\$104	
2238000	0.00	3.79	NAT	A	2	AS NEEDED	63	\$240	2	AS NEEDED	63	\$240	lots oof post sale activity
2239000	0.00	5.32	NAT	A	2	AS NEEDED	63	\$336	2	AS NEEDED	63	\$336	lots oof post sale activity
2239000	5.32	5.87	NAT	A	2	AS NEEDED	63	\$35	2	AS NEEDED	63	\$35	
2240000	0.00	2.72	IMP	A	2	AS NEEDED	63	\$172	2	AS NEEDED	63	\$172	vacant allotment but traditionally it gets used.

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
2240000	2.72	5.63	NAT	A	2	AS NEEDED	63	\$184	2	AS NEEDED	63	\$184	
2248000	0.00	0.71	IMP	A	2	AS NEEDED	63	\$45	2	AS NEEDED	63	\$45	significant hardrock, and ORV staging area, allotment vacant but traditionally used
2248000	0.71	1.89	IMP	A	2	AS NEEDED	63	\$75	2	AS NEEDED	63	\$75	
2248000	1.89	2.74	NAT	A	2	AS NEEDED	63	\$54	2	AS NEEDED	63	\$54	
2248000	2.74	3.95	NAT	A	2	AS NEEDED	63	\$76	2	AS NEEDED	63	\$76	
2259000	0.00	0.60	NAT	A	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	cutoff rds 18 and 22, has a vacant and a active allotment
2259000	0.60	2.42	NAT	A	2	AS NEEDED	63	\$115	2	AS NEEDED	63	\$115	
2259000	2.42	7.44	IMP	A	2	AS NEEDED	63	\$317	2	AS NEEDED	63	\$317	
2268000	0.00	2.29	IMP	A	2	AS NEEDED	63	\$145	2	AS NEEDED	63	\$145	
2268000	2.29	3.37	NAT	A	2	AS NEEDED	63	\$68	2	AS NEEDED	63	\$68	
2269000	0.00	1.57	IMP	A	2	AS NEEDED	63	\$99	2	AS NEEDED	63	\$99	possible mining claim - old opal-quartz
2269000	1.57	2.45	IMP	A	2	AS NEEDED	63	\$56	2	AS NEEDED	63	\$56	
2269000	2.45	3.70	NAT	A	2	AS NEEDED	63	\$79	2	AS NEEDED	63	\$79	
2269000	3.70	3.82	NAT	A	2	AS NEEDED	63	\$8	2	AS NEEDED	63	\$8	
2269000	3.82	3.88	NAT	A	2	AS NEEDED	63	\$4	2	AS NEEDED	63	\$4	
2269000	3.88	5.34	IMP	A	2	AS NEEDED	63	\$92	2	AS NEEDED	63	\$92	
2269000	5.34	5.68	IMP	A	2	AS NEEDED	63	\$22	2	AS NEEDED	63	\$22	
2269000	5.34	5.68	IMP	A	2	AS NEEDED	63	\$22	2	AS NEEDED	63	\$22	
2270000	0.00	2.72	IMP	A	2	AS NEEDED	75	\$204	2	AS NEEDED	75	\$204	cutoff, from rd. 22 to 18
2270000	2.72	3.49	IMP	A	2	AS NEEDED	75	\$58	2	AS NEEDED	75	\$58	
2270000	3.49	3.62	IMP	A	2	AS NEEDED	75	\$10	2	AS NEEDED	75	\$10	
2270000	3.49	3.62	IMP	A	2	AS NEEDED	75	\$10	2	AS NEEDED	75	\$10	
2270000	3.62	3.90	IMP	A	2	AS NEEDED	75	\$21	2	AS NEEDED	75	\$21	
2270000	3.62	3.90	IMP	A	2	AS NEEDED	75	\$21	2	AS NEEDED	75	\$21	
2270000	3.90	3.99	IMP	A	2	AS NEEDED	75	\$6	2	AS NEEDED	75	\$6	
2270000	3.90	3.99	IMP	A	2	AS NEEDED	75	\$6	2	AS NEEDED	75	\$6	
2270000	3.99	4.68	IMP	A	2	AS NEEDED	75	\$52	2	AS NEEDED	75	\$52	
2270000	3.99	4.68	IMP	A	2	AS NEEDED	75	\$52	2	AS NEEDED	75	\$52	
2274000	0.00	1.08	IMP	A	2	AS NEEDED	63	\$68	2	AS NEEDED	63	\$68	
2274000	1.08	2.73	IMP	A	2	AS NEEDED	63	\$104	2	AS NEEDED	63	\$104	
2300000	6.87	12.38	IMP	B	2	ANNUAL	633	\$3,488	3	ANNUAL	779	\$4,292	
2300000	12.38	23.49	IMP	B	2	ANNUAL	633	\$7,033	3	ANNUAL	779	\$8,655	22 road is at MP 18.68 (best place for ml 3/2 break)
2300000	23.49	25.89	IMP	A	2	ANNUAL	328	\$787	2	ANNUAL	328	\$787	
2300000	25.89	30.18	IMP	A	2	ANNUAL	328	\$1,406	2	ANNUAL	328	\$1,406	
2300000	30.18	42.65	IMP	A	2	ANNUAL	328	\$4,091	2	REGULAR	236	\$2,944	
2310000	0.00	6.69	NAT	A	2	AS NEEDED	63	\$423	2	AS NEEDED	63	\$423	very primitive
2312000	0.00	3.59	NAT	D	2	AS NEEDED	75	\$270	2	AS NEEDED	75	\$270	not on map where it leaves FS boundary, it peters-out> BLM > private
2313000	0.00	1.14	NAT	D	2	AS NEEDED	63	\$72	2	AS NEEDED	63	\$72	same as 12
2313000	1.14	3.50	NAT	D	2	AS NEEDED	63	\$149	2	AS NEEDED	63	\$149	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
2315000	0.00	2.61	IMP	D	2	AS NEEDED	63	\$165	2	AS NEEDED	63	\$165	a little piece of BLM and private, runs off the Forest at southend, private lands at southend.
2315000	7.31	8.98	IMP	D	2	AS NEEDED	63	\$105	2	AS NEEDED	63	\$105	
2315000	9.87	11.97	IMP	D	2	AS NEEDED	63	\$133	2	AS NEEDED	63	\$133	
2316000	0.00	4.60	IMP	A	2	AS NEEDED	63	\$291	2	AS NEEDED	63	\$291	
2320000	0.42	3.56	IMP	D	2	AS NEEDED	63	\$199	2	AS NEEDED	63	\$199	follows power line for awhile, has a road permit
2325000	0.00	5.30	IMP	D	2	AS NEEDED	63	\$335	2	AS NEEDED	63	\$335	power line, touches some pieces of private, leaves Forest at southend - blm-private
2350000	0.00	4.98	NAT	D	2	AS NEEDED	63	\$315	2	AS NEEDED	63	\$315	very primitive, access one vacant and one active allotment
2350000	4.98	8.60	NAT	A	2	AS NEEDED	63	\$229	2	AS NEEDED	63	\$229	
2400000	0.00	0.08	IMP	A	2	ANNUAL	633	\$51	2	REGULAR	266	\$21	comes off the 31 rd., ends at the 22rd., Shevilin- Hixon Summit line and station.
2400000	0.08	0.46	IMP	A	2	ANNUAL	633	\$241	2	REGULAR	266	\$101	
2400000	0.46	0.78	IMP	A	2	ANNUAL	633	\$203	2	REGULAR	266	\$85	
2400000	0.78	1.54	IMP	A	2	ANNUAL	633	\$481	2	REGULAR	266	\$202	
2400000	1.54	2.00	IMP	A	2	ANNUAL	633	\$291	2	REGULAR	266	\$122	
2400000	2.00	3.01	IMP	A	2	ANNUAL	633	\$637	2	REGULAR	266	\$268	
2400000	3.01	15.23	IMP	A	2	ANNUAL	633	\$7,738	2	REGULAR	266	\$3,252	
2415000	0.00	2.50	AGG	A	3	ANNUAL	757	\$1,893	3	ANNUAL	757	\$1,893	Sheviln-Hixon camp and RR tresile
2420000	0.00	0.53	IMP	A	2	AS NEEDED	63	\$34	2	AS NEEDED	63	\$34	
2420000	0.53	0.73	IMP	A	2	AS NEEDED	63	\$12	2	AS NEEDED	63	\$12	
2420000	0.73	0.79	IMP	A	2	AS NEEDED	63	\$4	2	AS NEEDED	63	\$4	
2420000	0.79	0.84	IMP	A	2	AS NEEDED	173	\$8	2	AS NEEDED	173	\$8	
2420000	0.84	0.90	IMP	A	2	AS NEEDED	173	\$11	2	AS NEEDED	173	\$11	
2420000	0.90	4.57	IMP	A	2	AS NEEDED	173	\$635	2	AS NEEDED	173	\$635	
2422000	0.00	1.67	NAT	A	2	AS NEEDED	63	\$105	2	AS NEEDED	63	\$105	
2422000	1.67	1.72	NAT	A	2	AS NEEDED	63	\$3	2	AS NEEDED	63	\$3	
2422000	1.72	4.89	NAT	A	2	AS NEEDED	63	\$200	2	AS NEEDED	63	\$200	
2424000	0.00	6.44	IMP	A	2	AS NEEDED	63	\$407	2	AS NEEDED	63	\$407	
2428000	0.00	5.10	NAT	A	2	AS NEEDED	63	\$322	2	AS NEEDED	63	\$322	
2430000	0.00	2.83	NAT	A	2	AS NEEDED	63	\$179	2	AS NEEDED	63	\$179	runs into the 31 rd., access large block of private
2430000	2.83	5.13	IMP	A	2	AS NEEDED	63	\$145	2	AS NEEDED	63	\$145	
2430000	5.13	5.35	IMP	A	2	AS NEEDED	63	\$14	2	AS NEEDED	63	\$14	
2430000	5.35	6.62	NAT	A	2	AS NEEDED	63	\$80	2	AS NEEDED	63	\$80	
2430000	6.62	9.53	IMP	A	2	AS NEEDED	63	\$184	2	AS NEEDED	63	\$184	
2430000	9.53	9.61	NAT	A	2	AS NEEDED	63	\$5	2	AS NEEDED	63	\$5	
2430000	9.61	9.65	NAT	A	2	AS NEEDED	63	\$3	2	AS NEEDED	63	\$3	
2430000	9.65	14.77	NAT	A	2	AS NEEDED	63	\$324	2	AS NEEDED	63	\$324	
2430000	14.77	15.99	IMP	A	2	AS NEEDED	63	\$77	2	AS NEEDED	63	\$77	
2435000	0.00	9.43	IMP	A	2	AS NEEDED	63	\$596	2	AS NEEDED	63	\$596	
2438000	0.00	4.35	NAT	A	2	AS NEEDED	63	\$275	2	AS NEEDED	63	\$275	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
2440000	0.00	1.21	IMP	A	2	AS NEEDED	63	\$76	2	AS NEEDED	63	\$76	
2440000	1.21	3.40	NAT	A	2	AS NEEDED	63	\$138	2	AS NEEDED	63	\$138	
2451000	0.00	2.54	NAT	A	2	AS NEEDED	63	\$161	2	AS NEEDED	63	\$161	starts on the Fremont
2451000	2.54	6.52	NAT	A	2	AS NEEDED	63	\$252	2	AS NEEDED	63	\$252	
2500000	0.72	4.75	BIT	B	3	ANNUAL	1572	\$6,335	4	ANNUAL	1572	\$6,335	
2510000	0.00	2.77	IMP	A	2	ANNUAL	388	\$1,075	2	ANNUAL	388	\$1,075	very rough, hard rock surface
2510000	2.77	13.76	IMP	A	2	ANNUAL	388	\$4,264	2	ANNUAL	388	\$4,264	
2517000	0.00	2.10	NAT	A	2	AS NEEDED	63	\$133	2	AS NEEDED	63	\$133	Summitside rest station. Starts on Fremont. Big Road, mostly on Fremont, lots of private lands
2524000	0.00	0.50	NAT	A	2	ANNUAL	63	\$32	2	ANNUAL	63	\$32	FREMONT ROAD
2524000	0.00	0.09	NAT	A	2	AS NEEDED	63	\$6	2	AS NEEDED	63	\$6	same as 2517
2524000	0.09	0.23	NAT	A	2	AS NEEDED	63	\$9	2	AS NEEDED	63	\$9	
3115000	0.00	2.50	NAT	A	2	AS NEEDED	63	\$158	2	AS NEEDED	63	\$158	
3115000	2.50	2.84	NAT	A	2	AS NEEDED	63	\$21	2	AS NEEDED	63	\$21	
3115000	2.84	3.30	NAT	A	2	AS NEEDED	63	\$29	2	AS NEEDED	63	\$29	
3117000	0.00	4.40	IMP	A	2	AS NEEDED	63	\$278	2	AS NEEDED	63	\$278	starts on rd. 31 ends on rd 24, borders someprivate
3117000	4.40	5.80	IMP	A	2	AS NEEDED	63	\$88	2	AS NEEDED	63	\$88	
3118000	0.00	1.85	NAT	A	2	AS NEEDED	63	\$117	2	AS NEEDED	63	\$117	
3118000	1.85	3.37	NAT	A	2	AS NEEDED	63	\$96	2	AS NEEDED	63	\$96	
3125000	0.00	3.00	IMP	B	2	ANNUAL	633	\$1,899	3	ANNUAL	779	\$2,337	Hole-in-the-ground
3125000	3.00	3.65	NAT	A	2	ANNUAL	501	\$326	2	AS NEEDED	63	\$41	
3125000	3.65	3.74	NAT	A	2	ANNUAL	501	\$43	2	AS NEEDED	63	\$5	
3125000	3.74	5.19	NAT	A	2	ANNUAL	501	\$725	2	AS NEEDED	63	\$91	
3125000	5.19	5.20	NAT	A	2	ANNUAL	501	\$8	2	AS NEEDED	63	\$1	
3125000	5.19	5.20	NAT	A	2	ANNUAL	501	\$8	2	AS NEEDED	63	\$1	
3130000	0.00	0.83	IMP	B	2	AS NEEDED	75	\$62	3	ANNUAL	534	\$441	
3130000	0.83	1.09	IMP	B	2	AS NEEDED	75	\$20	3	ANNUAL	534	\$141	
3130000	1.09	2.65	NAT	A	2	AS NEEDED	63	\$99	2	AS NEEDED	63	\$99	
3145000	0.00	2.63	NAT	A	2	AS NEEDED	63	\$166	2	AS NEEDED	63	\$166	
3145000	2.63	7.69	NAT	A	2	AS NEEDED	63	\$320	2	AS NEEDED	63	\$320	
3145000	7.69	9.76	NAT	A	2	AS NEEDED	63	\$131	2	AS NEEDED	63	\$131	
3145000	9.76	9.83	NAT	A	2	AS NEEDED	63	\$4	2	AS NEEDED	63	\$4	
3145000	9.83	10.16	NAT	A	2	AS NEEDED	63	\$21	2	AS NEEDED	63	\$21	
4000000	4.51	15.26	BIT	A	5	ANNUAL	1572	\$16,893	5	ANNUAL	1572	\$16,893	
4000000	15.26	21.48	BIT	A	5	ANNUAL	1572	\$9,784	5	ANNUAL	1572	\$9,784	
4000395	0.00	0.15	IMP	A	3	ANNUAL	534	\$80	3	ANNUAL	534	\$80	WAKE BUTTE T.H.
4000970	0.00	1.76	IMP	A	3	ANNUAL	474	\$836	3	ANNUAL	474	\$836	cow camp (get on map) - only access to pit - f/w long term special use permit, Fish and wildlife cabin
4001000	0.00	0.38	IMP	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
4001000	0.38	4.03	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
4030000	0.00	5.40	IMP	A	2	ANNUAL	388	\$2,095	2	REGULAR	266	\$1,436	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4032000	0.00	2.65	NAT	A	2	AS NEEDED	63	\$167	2	AS NEEDED	63	\$167	
4040000	0.00	8.69	AGG	A	2	ANNUAL	426	\$3,701	2	ANNUAL	426	\$3,701	Brooks/Scanlon haul route
4040000	8.69	11.50	AGG	A	2	ANNUAL	426	\$1,198	2	ANNUAL	426	\$1,198	Brooks/Scanlon haul route
4050000	0.00	3.90	AGG	A	2	AS NEEDED	75	\$293	2	AS NEEDED	75	\$293	
4070000	0.00	1.70	IMP	A	2	AS NEEDED	63	\$107	2	AS NEEDED	63	\$107	
4070000	1.70	2.50	NAT	A	2	AS NEEDED	63	\$51	2	AS NEEDED	63	\$51	
4070000	2.50	4.70	IMP	A	2	ANNUAL	513	\$1,129	2	AS NEEDED	63	\$139	
4100000	0.00	1.21	IMP	A	3	ANNUAL	779	\$946	3	ANNUAL	779	\$946	High county interest - Besson day use area/subdivisions/river access/hard rock pits/etc./etc./
4100000	1.21	7.11	IMP	A	3	ANNUAL	779	\$4,593	3	ANNUAL	779	\$4,593	High county interest - Besson day use area/subdivisions/river access/hard rock pits/etc./etc./
4100000	7.11	11.31	BIT	B	3	ANNUAL	1572	\$6,602	4	ANNUAL	1572	\$6,602	analyzed as two segments, the 2nd seg has access Sunriver - Bend
4100200	0.00	0.90	IMP	A	3	ANNUAL	779	\$702	3	ANNUAL	779	\$702	Besson camp road - (put number on map)
4100200	0.90	1.47	IMP	A	3	ANNUAL	779	\$443	3	ANNUAL	779	\$443	Besson camp road - (put number on map)
4100200	1.47	2.67	NAT	A	2	ANNUAL	501	\$601	2	ANNUAL	501	\$601	
4100200	2.67	4.17	NAT	A	2	ANNUAL	501	\$752	2	ANNUAL	501	\$752	
4100220	0.00	0.50	NAT	C	3	AS NEEDED	277	\$139	2	AS NEEDED	63	\$32	back door into spring river subdivision off of besson camp road
4100400	0.00	2.30	NAT	A	3	AS NEEDED	277	\$637	3	AS NEEDED	277	\$637	why on map as ml 3? - this is road into Benham Falls (needs to be added spatially) - original mapped road needs to be closed - four other developed sites are accessed off of 41 and not shown on map. See Bruce's "renumbering" map for this area!
4100750	0.00	0.47	AGG	A	3	ANNUAL	572	\$269	3	ANNUAL	572	\$269	BIG EDDIE DAY USE AREA
4100870	0.00	0.18	AGG	A	3	ANNUAL	572	\$103	3	ANNUAL	572	\$103	LAVA ISLAND TAKE OUT
4110000	0.00	3.35	NAT	A	2	REGULAR	224	\$749	2	REGULAR	224	\$749	
4120150	0.00	0.20	IMP	A	3	ANNUAL	474	\$95	3	ANNUAL	474	\$95	doesn't match map - shown near davis lake - check mapping
4120200	0.00	0.50	IMP	A	3	ANNUAL	659	\$330	3	ANNUAL	659	\$330	doesn't match map - shown near davis lake - check mapping
4120400	0.00	1.12	IMP	A	3	ANNUAL	474	\$531	3	ANNUAL	474	\$531	NEW ASPEN CAMP
4120700	0.00	0.20	IMP	A	3	ANNUAL	659	\$132	3	ANNUAL	659	\$132	doesn't match map - shown near davis lake - check mapping
4130000	0.00	4.80	NAT	A	2	AS NEEDED	63	\$303	2	AS NEEDED	63	\$303	Kiowa springs - gate on one end
4133000	0.00	3.47	NAT	A	2	AS NEEDED	63	\$219	2	AS NEEDED	63	\$219	designated as collector for "numbering"
4140000	0.00	2.24	NAT	A	2	AS NEEDED	63	\$142	2	AS NEEDED	63	\$142	location wrong on our map, we have wanted to close it but public keeps it open
4140000	2.24	6.50	NAT	A	2	AS NEEDED	63	\$269	2	AS NEEDED	63	\$269	Sheviln-Hixon camp and RR tresile
4180000	0.00	0.95	IMP	A	2	ANNUAL	328	\$310	2	ANNUAL	328	\$310	Analyze as two segments (north to south with break at comm site) - one segment accesses cutover pvt 40 - need to change directionality in system!
4180000	0.95	3.70	IMP	A	2	ANNUAL	328	\$904	2	ANNUAL	328	\$904	Analyze as two segments (north to south with break at comm site) - one segment accesses cutover pvt 40 - need to change directionality in system!
4180000	3.70	4.80	NAT	A	2	AS NEEDED	63	\$70	2	AS NEEDED	63	\$70	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4180000	4.80	5.94	IMP	A	2	AS NEEDED	63	\$72	2	AS NEEDED	63	\$72	
4180000	5.94	6.38	IMP	A	2	AS NEEDED	63	\$28	2	AS NEEDED	63	\$28	
4180000	6.38	6.89	IMP	A	2	AS NEEDED	63	\$32	2	AS NEEDED	63	\$32	
4180000	6.89	8.46	IMP	A	2	AS NEEDED	63	\$100	2	AS NEEDED	63	\$100	
4180000	8.46	8.47	IMP	A	2	AS NEEDED	63	\$0	2	AS NEEDED	63	\$0	
4180000	8.46	8.47	IMP	A	2	AS NEEDED	63	\$0	2	AS NEEDED	63	\$0	
4180000	8.47	8.60	IMP	A	2	AS NEEDED	63	\$8	2	AS NEEDED	63	\$8	
4180000	8.47	8.60	IMP	A	2	AS NEEDED	63	\$8	2	AS NEEDED	63	\$8	
4188000	0.00	2.80	IMP	A	2	REGULAR	236	\$659	2	REGULAR	236	\$659	Kuamaksi Butte, Jazz Festival, snowmobile trails, etc.
4200000	18.90	20.85	AC	A	5	ANNUAL	1572	\$3,061	5	ANNUAL	1572	\$3,061	
4200000	20.85	24.75	AC	A	5	ANNUAL	1572	\$6,136	5	ANNUAL	1572	\$6,136	
4200000	24.75	27.95	BIT	A	5	ANNUAL	1572	\$5,034	5	ANNUAL	1572	\$5,034	
4200000	27.95	28.07	BIT	A	5	ANNUAL	1572	\$187	5	ANNUAL	1572	\$187	
4200198	0.00	0.10	BIT	A	3	ANNUAL	1572	\$157	3	ANNUAL	1572	\$157	GENERAL PATCH BRIDGE
4200199	0.00	0.19	NAT	A	3	ANNUAL	462	\$88	3	ANNUAL	462	\$88	BIG RIVER CG COMPLEX
4200205	0.00	0.24	IMP	A	3	ANNUAL	474	\$114	3	ANNUAL	474	\$114	GENERAL PATCH GROUP SITE
4200210	0.00	1.10	BIT	B	3	ANNUAL	1307	\$1,438	4	ANNUAL	1307	\$1,438	check numbering on map (main access to subdivision)
4200350	0.00	0.30	IMP	A	3	AS NEEDED	277	\$83	3	AS NEEDED	277	\$83	fall river camp ground
4200355	0.00	0.10	NAT	A	3	AS NEEDED	277	\$28	3	AS NEEDED	277	\$28	fall river guard station (admin site)
4205000	0.00	1.95	IMP	A	2	AS NEEDED	63	\$123	2	AS NEEDED	63	\$123	Foster Road - high county interest - FS is working with county to give jurisdiction - (missing a short piece on map/hanging segment)
4205000	1.95	2.12	NAT	A	2	AS NEEDED	63	\$11	2	AS NEEDED	63	\$11	
4220000	0.00	3.10	IMP	A	2	ANNUAL	513	\$1,590	2	ANNUAL	513	\$1,590	school bus route/seconday route/custom stone special use permit
4230000	0.00	2.30	IMP	A	2	ANNUAL	633	\$1,456	2	ANNUAL	633	\$1,456	Pistol Butte - cinder pits - airport
4240000	0.00	5.32	IMP	A	2	ANNUAL	388	\$2,066	2	ANNUAL	388	\$2,066	experimental forest access
4240000	5.32	5.40	IMP	A	2	ANNUAL	388	\$29	2	ANNUAL	388	\$29	experimental forest access
4245000	0.00	4.20	IMP	A	2	ANNUAL	328	\$1,378	2	ANNUAL	328	\$1,378	lookout mountain - FS repeater site
4245000	4.20	4.67	IMP	A	2	ANNUAL	328	\$154	2	ANNUAL	328	\$154	lookout mountain - FS repeater site
4245000	4.67	4.89	IMP	A	2	ANNUAL	513	\$114	2	REGULAR	236	\$52	
4245000	4.89	4.90	IMP	A	2	ANNUAL	513	\$5	2	REGULAR	236	\$2	
4250000	0.00	3.68	IMP	A	2	ANNUAL	633	\$2,330	2	ANNUAL	633	\$2,330	Fall River to 4270
4250000	3.68	6.40	IMP	A	2	ANNUAL	633	\$1,721	2	ANNUAL	633	\$1,721	Fall River to 4270
4251000	0.00	4.80	IMP	A	2	AS NEEDED	63	\$303	2	AS NEEDED	63	\$303	
4255000	0.00	1.86	IMP	A	2	AS NEEDED	75	\$140	2	AS NEEDED	75	\$140	
4255000	1.86	3.10	IMP	A	2	AS NEEDED	75	\$93	2	AS NEEDED	75	\$93	
4256000	0.00	1.07	NAT	A	2	ANNUAL	501	\$538	2	ANNUAL	501	\$538	top of round mtn - principle lookout on forest
4256000	1.07	2.16	NAT	A	2	ANNUAL	501	\$544	2	ANNUAL	501	\$544	top of round mtn - principle lookout on forest
4256000	2.16	2.26	NAT	A	2	ANNUAL	501	\$51	2	ANNUAL	501	\$51	top of round mtn - principle lookout on forest
4256000	2.26	2.35	NAT	A	2	ANNUAL	501	\$43	2	ANNUAL	501	\$43	
4256000	2.35	2.40	NAT	A	2	ANNUAL	501	\$27	2	ANNUAL	501	\$27	
4258000	0.00	2.10	IMP	A	2	AS NEEDED	63	\$133	2	AS NEEDED	63	\$133	cutoff road between 4240 and 42

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4260000	0.00	3.28	BIT	A	4	ANNUAL	1572	\$5,156	4	ANNUAL	1572	\$5,156	Wickiup Dam road - lots of special uses and everything else!
4260000	3.28	7.72	AGG	A	3	ANNUAL	1122	\$4,982	3	ANNUAL	1122	\$4,982	
4260000	7.72	9.09	NAT	A	3	ANNUAL	686	\$936	3	ANNUAL	686	\$936	
4260000	9.09	9.27	NAT	A	3	ANNUAL	686	\$127	3	ANNUAL	686	\$127	Wickiup Dam road - lots of special uses and everything else!
4260000	9.27	9.97	NAT	A	3	ANNUAL	686	\$480	3	ANNUAL	686	\$480	
4260040	0.00	0.20	NAT	A	3	AS NEEDED	277	\$55	3	AS NEEDED	277	\$55	
4260070	0.00	0.80	NAT	A	3	AS NEEDED	277	\$222	3	AS NEEDED	277	\$222	
4260070	0.80	0.90	NAT	A	3	AS NEEDED	277	\$28	3	AS NEEDED	277	\$28	
4260070	0.90	1.80	NAT	C	2	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	sheep bridge CG complex
4260130	0.00	0.10	AGG	A	3	AS NEEDED	387	\$39	3	AS NEEDED	387	\$39	South Twin campground - 131 is not on map and should be
4260131	0.00	0.40	IMP	A	4	ANNUAL	534	\$214	4	ANNUAL	534	\$214	WEST S.TWIN CG
4260132	0.00	0.23	IMP	A	4	ANNUAL	0	\$0	4	ANNUAL	0	\$0	SOUTH TWIN RV PARK
4260132	0.23	0.26	IMP	A	4	ANNUAL	0	\$0	4	ANNUAL	0	\$0	SOUTH TWIN RV PARK
4260140	0.00	0.10	IMP	A	3	ANNUAL	474	\$47	3	ANNUAL	474	\$47	WICKIUP DUMPSTATION
4260200	0.00	1.20	BIT	B	3	ANNUAL	1307	\$1,568	4	ANNUAL	1307	\$1,568	Gull Point campground
4260800	0.00	0.37	NAT	A	3	ANNUAL	462	\$170	3	ANNUAL	462	\$170	WICKIUP RES. CG
4260815	0.00	0.08	AGG	A	3	ANNUAL	572	\$46	3	ANNUAL	572	\$46	WICKIUP BUTTE BOATING
4262000	0.00	1.80	IMP	A	2	ANNUAL	388	\$698	2	ANNUAL	388	\$698	powerline road east of twin lakes/wickiup
4262000	1.80	2.50	IMP	A	2	ANNUAL	388	\$272	2	ANNUAL	388	\$272	
4270000	0.00	1.52	BIT	A	4	ANNUAL	1572	\$2,385	4	ANNUAL	1572	\$2,385	Crane Prairie road - two distinct segments - snow creek/crane
4270000	1.52	7.64	BIT	A	4	ANNUAL	1572	\$9,625	4	ANNUAL	1572	\$9,625	
4270000	7.64	11.30	AGG	B	3	ANNUAL	1122	\$4,107	4	ANNUAL	1122	\$4,107	
4270476	0.00	0.13	AC	A	4	ANNUAL	0	\$0	4	ANNUAL	0	\$0	CRANE PRAIRIE LODGING
4270477	0.00	0.28	AC	A	4	ANNUAL	1307	\$366	4	ANNUAL	1307	\$366	CRANE PRAIRIE BOATING
4270478	0.00	2.50	NAT	A	4	ANNUAL	277	\$693	4	ANNUAL	277	\$693	crane prairie campground
4270990	0.00	0.46	AGG	A	3	AS NEEDED	277	\$127	3	AS NEEDED	277	\$127	deschutes bridge campground
4273000	0.00	0.35	IMP	A	2	AS NEEDED	63	\$22	2	AS NEEDED	63	\$22	
4273000	0.35	0.56	IMP	A	2	AS NEEDED	63	\$13	2	AS NEEDED	63	\$13	
4273000	0.56	1.34	IMP	A	2	AS NEEDED	63	\$49	2	AS NEEDED	63	\$49	
4273000	1.34	3.70	IMP	A	2	AS NEEDED	63	\$149	2	AS NEEDED	63	\$149	
4278000	0.00	0.10	IMP	A	2	AS NEEDED	63	\$6	2	AS NEEDED	63	\$6	
4280000	0.00	3.80	IMP	A	2	ANNUAL	388	\$1,474	2	ANNUAL	388	\$1,474	back side of wickiup (small pvt)
4285000	0.00	1.20	AGG	A	3	ANNUAL	1122	\$1,346	3	ANNUAL	1122	\$1,346	browns mtn to campground on crane prairie
4285000	1.20	2.15	IMP	A	2	AS NEEDED	63	\$60	2	AS NEEDED	63	\$60	
4285000	2.15	3.60	IMP	D	2	AS NEEDED	63	\$91	2	AS NEEDED	63	\$91	browns mtn to campground on crane prairie
4285000	3.60	4.20	NAT	D	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	
4286000	0.00	1.74	IMP	A	2	AS NEEDED	63	\$110	2	AS NEEDED	63	\$110	browns mountain
4286000	1.74	3.16	IMP	A	2	AS NEEDED	63	\$90	2	AS NEEDED	63	\$90	browns mountain
4290000	0.00	2.72	IMP	A	2	AS NEEDED	75	\$204	2	AS NEEDED	75	\$204	Waldo lake road - road of issue in Forest Plan (don't maintain)
4290000	2.72	4.07	IMP	A	2	AS NEEDED	75	\$102	2	AS NEEDED	75	\$102	Waldo lake road - road of issue in Forest Plan
4290000	4.07	4.46	IMP	A	2	AS NEEDED	75	\$29	2	AS NEEDED	75	\$29	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4290000	4.46	7.27	NAT	A	2	AS NEEDED	75	\$211	2	AS NEEDED	75	\$211	
4291000	0.00	5.80	IMP	A	2	AS NEEDED	63	\$367	2	AS NEEDED	63	\$367	
4292000	0.00	0.31	IMP	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	important Snowmobile Route on Crescent and Bend/Ft Rock
4292000	0.31	4.00	IMP	A	2	AS NEEDED	63	\$233	2	AS NEEDED	63	\$233	important Snowmobile Route on Crescent and Bend/Ft Rock
4292000	4.00	4.50	NAT	A	2	AS NEEDED	63	\$32	2	AS NEEDED	63	\$32	important Snowmobile Route on Crescent and Bend/Ft Rock
4293000	0.00	2.18	AGG	A	2	AS NEEDED	63	\$138	2	AS NEEDED	63	\$138	
4293000	2.18	2.58	NAT	A	2	AS NEEDED	63	\$25	2	AS NEEDED	63	\$25	
4296000	0.00	0.17	NAT	A	2	AS NEEDED	63	\$11	2	AS NEEDED	63	\$11	designated as collector for "numbering" - gated - snowmobile route
4296000	0.17	1.60	NAT	A	2	AS NEEDED	63	\$90	2	AS NEEDED	63	\$90	designated as collector for "numbering" - gated - snowmobile route
4300500	0.00	0.08	AGG	A	3	ANNUAL	572	\$46	3	ANNUAL	572	\$46	PRINGLE SPECIAL INTEREST
4320000	1.70	1.80	NAT	A	2	AS NEEDED	75	\$8	2	AS NEEDED	75	\$8	
4320000	2.30	2.80	NAT	A	2	AS NEEDED	75	\$38	2	AS NEEDED	75	\$38	
4320000	2.90	3.20	NAT	A	2	AS NEEDED	75	\$23	2	AS NEEDED	75	\$23	
4320000	3.60	5.00	NAT	A	2	AS NEEDED	75	\$105	2	AS NEEDED	75	\$105	
4330000	0.00	2.24	IMP	A	2	ANNUAL	388	\$870	2	ANNUAL	388	\$870	secondary access to subdivision - Tetherow boat landing - accesses La Pine state park road, pvt roads, county roads, etc.
4330000	2.24	3.70	IMP	A	2	ANNUAL	388	\$566	2	ANNUAL	388	\$566	secondary access to subdivision - Tetherow boat landing - accesses La Pine state park road, pvt roads, county roads, etc.
4350000	0.00	2.10	IMP	A	2	ANNUAL	633	\$1,329	2	ANNUAL	633	\$1,329	Pringle Falls road - cutoff road from 42 to 43
4358000	0.00	5.12	NAT	A	2	ANNUAL	316	\$1,618	2	AS NEEDED	63	\$323	closed - gated - elk caving area - ml 2 should be ml 3 (?)
4360000	0.00	2.80	IMP	A	2	ANNUAL	328	\$918	2	ANNUAL	328	\$918	parallels deschutes river - north side of state/blm land - state has just put in developed rec site - parking and trails into La Pine state park
4360000	5.80	6.40	IMP	A	2	ANNUAL	328	\$197	2	ANNUAL	328	\$197	
4370000	0.00	1.45	NAT	B	2	ANNUAL	501	\$726	3	ANNUAL	647	\$938	some segments planned to be closed under Dilman project - high importance for fire - access for Haner Park subdivision/community (needs resegmented per Dilman EA)
4370000	1.45	3.67	NAT	C	2	AS NEEDED	63	\$140	1	AS NEEDED	63	\$140	
4370000	3.67	6.30	NAT	A	2	AS NEEDED	63	\$166	2	AS NEEDED	63	\$166	
4370000	6.30	6.58	NAT	A	2	AS NEEDED	63	\$18	2	AS NEEDED	63	\$18	some segments planned to be closed under Dilman project - high importance for fire - access for Haner Park subdivision/community
4380000	0.00	3.34	IMP	B	2	ANNUAL	878	\$2,928	3	ANNUAL	1024	\$3,415	cutoff road from Wickiup Dam to 43 - designated access route for Haner Park community (snowplowing, etc.)
4380000	3.34	3.58	IMP	B	2	ANNUAL	878	\$215	3	ANNUAL	1024	\$251	cutoff road from Wickiup Dam to 43 - designated access route for Haner Park community (snowplowing, etc.)
4400000	0.00	6.93	IMP	A	3	ANNUAL	1024	\$7,094	3	ANNUAL	1024	\$7,094	Tenino Boat Launch - Waumpus Butte comm sites, etc.
4400000	6.93	7.16	IMP	A	3	ANNUAL	1024	\$238	3	ANNUAL	1024	\$238	Tenino Boat Launch - Waumpus Butte comm sites, etc.
4400000	7.16	9.91	NAT	A	3	ANNUAL	1012	\$2,783	3	ANNUAL	1012	\$2,783	
4400000	9.91	16.59	IMP	A	3	ANNUAL	1024	\$6,840	3	ANNUAL	1024	\$6,840	
4410000	0.00	0.98	IMP	A	2	AS NEEDED	63	\$62	2	AS NEEDED	63	\$62	Pringe Butte - access for Pringle Falls experimental Forest
4410000	0.98	1.48	IMP	A	2	AS NEEDED	63	\$31	2	AS NEEDED	63	\$31	Pringe Butte - access for Pringle Falls experimental Forest

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4410000	1.48	1.89	IMP	A	2	AS NEEDED	63	\$26	2	AS NEEDED	63	\$26	
4410000	1.48	1.89	IMP	A	2	AS NEEDED	63	\$26	2	AS NEEDED	63	\$26	
4410000	1.48	1.89	IMP	A	2	AS NEEDED	63	\$26	2	AS NEEDED	63	\$26	
4410000	1.89	1.91	IMP	A	2	AS NEEDED	63	\$1	2	AS NEEDED	63	\$1	
4410000	1.89	1.91	IMP	A	2	AS NEEDED	63	\$1	2	AS NEEDED	63	\$1	
4410000	1.89	1.91	IMP	A	2	AS NEEDED	63	\$1	2	AS NEEDED	63	\$1	
4410000	1.91	1.97	IMP	A	2	AS NEEDED	63	\$4	2	AS NEEDED	63	\$4	
4410000	1.91	1.97	IMP	A	2	AS NEEDED	63	\$4	2	AS NEEDED	63	\$4	
4410000	1.91	1.97	IMP	A	2	AS NEEDED	63	\$4	2	AS NEEDED	63	\$4	
4410000	1.97	2.04	IMP	A	2	AS NEEDED	63	\$5	2	AS NEEDED	63	\$5	
4410000	1.97	2.04	IMP	A	2	AS NEEDED	63	\$5	2	AS NEEDED	63	\$5	
4410000	1.97	2.04	IMP	A	2	AS NEEDED	63	\$5	2	AS NEEDED	63	\$5	
4410000	2.04	2.43	IMP	A	2	AS NEEDED	63	\$24	2	AS NEEDED	63	\$24	
4410000	2.43	2.56	IMP	A	2	AS NEEDED	63	\$8	2	AS NEEDED	63	\$8	
4410000	2.56	4.60	IMP	A	2	AS NEEDED	63	\$129	2	AS NEEDED	63	\$129	
4420000	0.00	0.11	NAT	A	2	AS NEEDED	63	\$7	2	AS NEEDED	63	\$7	bottom of pringle falls experimental forest
4420000	0.00	0.11	NAT	A	2	AS NEEDED	63	\$7	2	AS NEEDED	63	\$7	
4420000	0.11	0.40	NAT	A	2	AS NEEDED	63	\$18	2	AS NEEDED	63	\$18	
4420000	0.40	1.55	NAT	C	2	AS NEEDED	63	\$73	1	AS NEEDED	63	\$73	
4420000	1.55	1.70	NAT	C	2	AS NEEDED	63	\$10	1	AS NEEDED	63	\$10	
4420000	1.70	2.43	IMP	A	2	AS NEEDED	63	\$46	2	AS NEEDED	63	\$46	
4500000	0.00	11.55	BIT	A	5	ANNUAL	1572	\$18,157	5	ANNUAL	1572	\$18,157	sunriver to mt bachelor road - sunriver maintenance - to become county road after 2005 FH reconstruction - accesses edison snowpark, rock festival, etc.
4500700	0.00	0.33	BIT	A	4	ANNUAL	1572	\$519	4	ANNUAL	1572	\$519	EDISON SNOPARK
4525000	0.00	5.15	IMP	A	2	ANNUAL	513	\$2,642	2	ANNUAL	513	\$2,642	sheridan mtn, high use road, major timber haul route
4525000	5.15	9.80	IMP	A	2	ANNUAL	513	\$2,385	2	ANNUAL	513	\$2,385	sheridan mtn, high use road, major timber haul route
4525000	9.80	10.80	AGG	A	2	ANNUAL	731	\$731	2	ANNUAL	731	\$731	
4526000	0.00	2.81	NAT	A	2	AS NEEDED	63	\$178	2	AS NEEDED	63	\$178	east side of sheridan, gate, snow hut
4528000	0.00	2.40	AGG	A	1	AS NEEDED	63	\$152	1	AS NEEDED	63	\$152	west side of sheridan, gated but always open
4528000	2.40	4.50	IMP	A	1	AS NEEDED	63	\$133	1	AS NEEDED	63	\$133	
4529000	0.00	2.80	AGG	A	2	AS NEEDED	63	\$177	2	AS NEEDED	63	\$177	back of hosmer lake
4600000	61.10	63.88	AC	A	5	ANNUAL	1572	\$4,370	5	ANNUAL	1572	\$4,370	cascade lakes highway
4600100	0.00	0.82	IMP	A	3	ANNUAL	779	\$639	3	ANNUAL	779	\$639	
4600160	0.00	0.20	BIT	A	4	ANNUAL	1572	\$314	4	ANNUAL	1572	\$314	viewpoint off 46 road - Virginial Misner (?)
4600210	0.00	0.40	BIT	A	4	ANNUAL	1572	\$629	4	ANNUAL	1572	\$629	wanoga snowpark
4600225	0.00	0.30	BIT	A	4	ANNUAL	1572	\$472	4	ANNUAL	1572	\$472	swampy lakes snowpark
4600300	0.00	0.50	BIT	A	4	ANNUAL	0	\$0	4	ANNUAL	0	\$0	MT BACHELOR COMPLEX
4600310	0.00	0.70	BIT	A	4	ANNUAL	0	\$0	4	ANNUAL	0	\$0	MT BACHELOR COMPLEX
4600319	0.00	0.20	BIT	A	4	ANNUAL	0	\$0	4	ANNUAL	0	\$0	dutchman flat snowpark
4600320	0.00	1.30	BIT	A	4	ANNUAL	0	\$0	4	ANNUAL	0	\$0	MT BACHELOR COMPLEX

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4600400	0.00	1.65	AGG	A	3	ANNUAL	757	\$1,249	3	ANNUAL	757	\$1,249	sparks lake campground (370 to todd lake should be in list)
4600420	0.00	0.20	BIT	B	3	ANNUAL	1307	\$261	4	ANNUAL	1307	\$261	green lakes trail head
4600430	0.00	0.25	BIT	B	3	ANNUAL	1307	\$323	4	ANNUAL	1307	\$323	devils lake access
4600430	0.25	0.27	BIT	B	3	ANNUAL	1307	\$34	4	ANNUAL	1307	\$34	
4600430	0.25	0.27	BIT	B	3	ANNUAL	1307	\$34	4	ANNUAL	1307	\$34	
4600430	0.27	0.32	BIT	B	3	ANNUAL	1307	\$61	4	ANNUAL	1307	\$61	
4600440	0.00	0.20	IMP	A	3	ANNUAL	474	\$95	3	ANNUAL	474	\$95	MIRROR LAKE TH
4600450	0.00	0.80	AGG	A	3	AS NEEDED	314	\$251	3	AS NEEDED	314	\$251	quinn meadow horse camp
4600472	0.00	0.20	BIT	B	3	ANNUAL	1572	\$314	4	ANNUAL	1572	\$314	elk lake lodge
4600472	0.20	0.23	BIT	B	3	ANNUAL	1572	\$52	4	ANNUAL	1572	\$52	elk lake lodge
4600473	0.00	0.44	BIT	A	3	ANNUAL	1572	\$692	3	ANNUAL	1572	\$692	ELK LAKE CG COMPLEX
4600480	0.00	0.10	BIT	B	3	ANNUAL	1572	\$157	4	ANNUAL	1572	\$157	point campground on elk lake
4600482	0.00	0.20	BIT	B	3	ANNUAL	1572	\$314	4	ANNUAL	1572	\$314	point day use
4600500	0.00	1.03	BIT	B	3	ANNUAL	1572	\$1,619	4	ANNUAL	1572	\$1,619	lava lake road
4600520	0.00	0.59	IMP	A	3	ANNUAL	659	\$389	3	ANNUAL	659	\$389	little lava road
4600530	0.00	0.34	BIT	B	3	ANNUAL	1307	\$444	4	ANNUAL	1307	\$444	lava lake boat launch and loop
4600655	0.00	0.85	IMP	A	3	AS NEEDED	277	\$235	3	AS NEEDED	277	\$235	quinn river campground and boat launch
4600656	0.00	0.36	AC	B	3	ANNUAL	1307	\$465	4	ANNUAL	1307	\$465	QUINN RIVER CG
4600657	0.00	0.23	AC	B	3	ANNUAL	1307	\$306	4	ANNUAL	1307	\$306	QUINN RIVER CG LOOP
4600659	0.00	0.40	IMP	A	3	AS NEEDED	277	\$111	3	AS NEEDED	277	\$111	osprey point day use (680 road is rock creek cg/boat not on map)
4600680	0.00	0.59	BIT	A	4	ANNUAL	1572	\$927	4	ANNUAL	1572	\$927	ROCK CREEK ACCESS / BOAT RAMP
4600681	0.00	0.30	BIT	A	4	ANNUAL	1572	\$472	4	ANNUAL	1572	\$472	ROCK CREEK CG LOOP 9+
4600688	0.00	0.19	BIT	A	4	ANNUAL	1307	\$248	4	ANNUAL	1307	\$248	ROCK CREEK CG LOOP 1-8
4600840	0.00	0.40	AGG	A	3	ANNUAL	572	\$229	3	ANNUAL	572	\$229	LAVA FLOW CG ROAD
4600840	0.40	0.82	AGG	A	3	ANNUAL	572	\$240	3	ANNUAL	572	\$240	LAVA FLOW CG ROAD
4600850	0.00	0.27	AC	A	4	ANNUAL	1572	\$424	4	ANNUAL	1572	\$424	LAVA FLCG
4600850	0.27	1.85	IMP	A	3	ANNUAL	779	\$1,231	3	ANNUAL	779	\$1,231	
4600850	1.85	3.15	IMP	A	3	ANNUAL	779	\$1,013	3	ANNUAL	779	\$1,013	
4600855	0.00	2.60	IMP	A	3	ANNUAL	779	\$2,025	3	ANNUAL	779	\$2,025	
4601000	10.20	14.80	NAT	A	2	REGULAR	63	\$291	2	REGULAR	63	\$291	
4601000	14.80	18.70	NAT	A	2	REGULAR	63	\$246	2	REGULAR	63	\$246	
4602000	0.00	0.60	AGG	A	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	to triangle hill - winter trail - comm site
4602000	0.60	4.60	AGG	A	2	AS NEEDED	63	\$253	2	AS NEEDED	63	\$253	to triangle hill - winter trail - comm site
4603000	0.00	2.60	NAT	B	2	ANNUAL	316	\$822	3	ANNUAL	462	\$1,201	tumalo falls - municipal watershed - water guy's residence
4605000	0.20	1.10	IMP	A	2	AS NEEDED	63	\$57	2	AS NEEDED	63	\$57	
4606000	0.00	0.56	IMP	A	2	AS NEEDED	75	\$42	2	AS NEEDED	75	\$42	Brooks-Scanlon Haul Road all the way to sisters
4606000	0.56	1.36	IMP	C	2	AS NEEDED	75	\$60	1	AS NEEDED	75	\$60	
4606000	1.36	5.40	IMP	C	2	AS NEEDED	75	\$304	1	AS NEEDED	75	\$304	Brooks-Scanlon Haul Road all the way to sisters
4606000	5.40	5.58	IMP	C	2	AS NEEDED	75	\$14	1	AS NEEDED	75	\$14	
4606000	5.58	7.07	IMP	C	2	AS NEEDED	75	\$112	1	AS NEEDED	75	\$112	
4606000	7.07	7.75	IMP	C	2	AS NEEDED	75	\$51	1	AS NEEDED	75	\$51	Brooks-Scanlon Haul Road all the way to sisters

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4606000	7.75	8.52	IMP	C	2	AS NEEDED	75	\$58	1	AS NEEDED	75	\$58	
4606000	8.52	11.15	IMP	C	2	AS NEEDED	75	\$198	1	AS NEEDED	75	\$198	Brooks-Scanlon Haul Road all the way to sisters, Brooks mainline railroad bed.
4606000	11.15	12.39	IMP	C	2	AS NEEDED	75	\$93	1	AS NEEDED	75	\$93	
4606000	12.39	17.74	IMP	C	2	REGULAR	266	\$1,420	1	REGULAR	266	\$1,420	
4606000	17.74	19.63	IMP	C	2	REGULAR	266	\$502	1	REGULAR	266	\$502	
4606000	19.63	21.60	IMP	C	2	REGULAR	266	\$523	1	REGULAR	266	\$523	
4606000	21.60	21.90	IMP	C	2	REGULAR	266	\$80	1	REGULAR	266	\$80	
4606000	21.90	23.28	IMP	C	2	REGULAR	266	\$366	1	REGULAR	266	\$366	
4606000	23.28	25.73	IMP	A	2	REGULAR	266	\$651	2	REGULAR	266	\$651	Brooks-Scanlon Haul Road all the way to sisters, Brooks mainline railroad bed.
4607000	0.00	1.70	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	all private
4610000	0.00	0.89	NAT	A	2	AS NEEDED	63	\$56	2	AS NEEDED	63	\$56	tie through road from 46 to 4601
4610000	0.89	4.40	NAT	A	2	AS NEEDED	63	\$222	2	AS NEEDED	63	\$222	
4612000	0.00	3.20	NAT	A	2	AS NEEDED	63	\$202	2	AS NEEDED	63	\$202	
4613000	0.00	3.87	IMP	A	2	AS NEEDED	63	\$244	2	AS NEEDED	63	\$244	
4613000	3.87	7.30	IMP	A	2	AS NEEDED	63	\$217	2	AS NEEDED	63	\$217	
4614000	0.00	2.70	AGG	A	2	AS NEEDED	63	\$171	2	AS NEEDED	63	\$171	
4614000	2.70	3.58	NAT	A	2	AS NEEDED	63	\$56	2	AS NEEDED	63	\$56	
4614000	3.58	6.16	NAT	A	2	AS NEEDED	63	\$163	2	AS NEEDED	63	\$163	
4615000	0.00	4.63	IMP	A	2	AS NEEDED	63	\$293	2	AS NEEDED	63	\$293	
4615000	4.63	8.94	NAT	A	2	AS NEEDED	63	\$272	2	AS NEEDED	63	\$272	
4625000	0.00	2.66	AGG	A	3	ANNUAL	1122	\$2,985	3	ANNUAL	1122	\$2,985	Elk lake loop
4625000	2.66	3.85	BIT	A	4	ANNUAL	1572	\$1,871	4	ANNUAL	1572	\$1,871	
4625100	0.00	0.30	BIT	B	3	ANNUAL	1307	\$392	4	ANNUAL	1307	\$392	Guard Station/admin site
4625300	0.00	0.15	IMP	A	3	ANNUAL	474	\$71	3	ANNUAL	474	\$71	Sunset view day use area on Elk Lake
4625500	0.00	0.90	BIT	A	3	ANNUAL	1307	\$1,176	3	ANNUAL	1307	\$1,176	Little Fawn Campground
4625505	0.00	0.10	BIT	A	3	ANNUAL	1307	\$131	3	ANNUAL	1307	\$131	LITTLE FAWN CG LOOP
4625605	0.00	0.40	AGG	A	3	AS NEEDED	314	\$126	3	AS NEEDED	314	\$126	Hosmer Lake (why is 600 not on list or map?)1
4625607	0.00	0.20	IMP	A	3	AS NEEDED	314	\$63	3	AS NEEDED	314	\$63	
4628000	0.00	2.40	AGG	A	2	AS NEEDED	63	\$152	2	AS NEEDED	63	\$152	
4628000	2.40	2.70	NAT	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	
4630000	0.00	1.50	AGG	A	2	AS NEEDED	75	\$113	2	AS NEEDED	75	\$113	pulled culverts out of access to Cultus corral horse camp
4630000	1.50	3.50	AGG	A	3	ANNUAL	757	\$1,514	3	ANNUAL	757	\$1,514	
4630000	3.50	7.40	AGG	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
4631000	0.00	1.06	AGG	A	2	AS NEEDED	63	\$67	2	AS NEEDED	63	\$67	benchmark butte road - gated
4631000	1.06	1.93	NAT	C	2	AS NEEDED	63	\$55	1	AS NEEDED	63	\$55	
4632000	0.00	2.60	AGG	A	2	AS NEEDED	63	\$164	2	AS NEEDED	63	\$164	backside of benchmark butte
4632000	2.60	5.30	NAT	A	2	AS NEEDED	63	\$171	2	AS NEEDED	63	\$171	
4635000	0.00	1.74	BIT	A	4	ANNUAL	1572	\$2,735	4	ANNUAL	1572	\$2,735	cultus lake road
4635000	1.74	2.42	NAT	A	3	AS NEEDED	314	\$214	3	AS NEEDED	314	\$214	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4635100	0.00	0.30	BIT	A	4	ANNUAL	1572	\$472	4	ANNUAL	1572	\$472	WINOPEE TH
4635100	0.30	0.68	AGG	A	3	ANNUAL	632	\$240	3	ANNUAL	632	\$240	WINOPEE TH
4635100	0.68	0.90	AGG	A	3	ANNUAL	572	\$126	3	ANNUAL	572	\$126	WINOPEE TH
4635110	0.00	0.40	BIT	A	3	ANNUAL	1307	\$523	3	ANNUAL	1307	\$523	to cultus lake resort
4635120	0.00	0.24	IMP	A	3	AS NEEDED	314	\$74	3	AS NEEDED	314	\$74	cultus lake campground (should 100 rd be on list?)
4635120	0.24	0.50	IMP	A	3	AS NEEDED	314	\$84	3	AS NEEDED	314	\$84	
4635120	0.24	0.50	IMP	A	3	AS NEEDED	314	\$84	3	AS NEEDED	314	\$84	
4635120	0.50	0.56	IMP	A	3	AS NEEDED	314	\$18	3	AS NEEDED	314	\$18	
4636000	0.00	1.10	NAT	A	2	AS NEEDED	63	\$70	2	AS NEEDED	63	\$70	Irish Taylor / Little Cultus road - road of issue in Forest Plan
4636000	1.10	7.10	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
4650000	0.00	2.98	IMP	A	2	AS NEEDED	63	\$188	2	AS NEEDED	63	\$188	check termini against firemans map, snowmobile rd
4650000	2.98	5.82	NAT	A	2	AS NEEDED	63	\$179	2	AS NEEDED	63	\$179	check termini against firemans map
4652000	0.00	0.00	AGG	A	2	AS NEEDED	63	\$0	2	AS NEEDED	63	\$0	trailhead
4652000	0.00	0.01	AGG	A	2	AS NEEDED	63	\$0	2	AS NEEDED	63	\$0	
4652000	0.00	0.01	AGG	A	2	AS NEEDED	63	\$0	2	AS NEEDED	63	\$0	
4652000	0.00	0.01	AGG	A	2	AS NEEDED	63	\$0	2	AS NEEDED	63	\$0	
4652000	0.00	0.01	AGG	A	2	AS NEEDED	63	\$0	2	AS NEEDED	63	\$0	
4652000	0.01	3.13	AGG	A	2	AS NEEDED	63	\$197	2	AS NEEDED	63	\$197	
4652000	0.01	3.13	AGG	A	2	AS NEEDED	63	\$197	2	AS NEEDED	63	\$197	
4652000	3.13	3.58	AGG	A	2	AS NEEDED	63	\$28	2	AS NEEDED	63	\$28	
4652000	3.13	3.58	AGG	A	2	AS NEEDED	63	\$28	2	AS NEEDED	63	\$28	
4652000	3.58	4.90	IMP	A	2	AS NEEDED	63	\$83	2	AS NEEDED	63	\$83	
4652000	3.58	4.90	IMP	A	2	AS NEEDED	63	\$83	2	AS NEEDED	63	\$83	
4652000	4.90	5.30	NAT	A	2	AS NEEDED	63	\$25	2	AS NEEDED	63	\$25	
4652000	4.90	5.30	NAT	A	2	AS NEEDED	63	\$25	2	AS NEEDED	63	\$25	
4654000	0.00	2.49	IMP	A	2	AS NEEDED	63	\$157	2	AS NEEDED	63	\$157	
4660000	0.00	5.68	AGG	B	2	ANNUAL	426	\$2,420	3	ANNUAL	572	\$3,249	all high rankings but has sections of level 2 maintenance - should revisit objective maintenance levels
4660000	5.68	7.81	AGG	B	2	ANNUAL	426	\$907	3	ANNUAL	572	\$1,218	
4660000	7.81	8.53	AGG	B	2	ANNUAL	486	\$350	3	ANNUAL	632	\$455	
4660000	8.53	11.50	AGG	A	3	ANNUAL	877	\$2,600	3	ANNUAL	877	\$2,600	
4660000	11.50	11.53	AGG	A	3	ANNUAL	877	\$31	3	ANNUAL	877	\$31	
4662000	0.00	2.10	NAT	A	2	AS NEEDED	63	\$133	2	AS NEEDED	63	\$133	
4664000	0.00	0.50	AGG	A	2	AS NEEDED	63	\$32	2	AS NEEDED	63	\$32	developed rec = 5 because of trailhead
4664000	0.50	1.96	IMP	A	2	AS NEEDED	63	\$92	2	AS NEEDED	63	\$92	developed rec = 5 because of trailhead
4664000	1.96	3.48	IMP	A	2	AS NEEDED	63	\$96	2	AS NEEDED	63	\$96	developed rec = 5 because of trailhead
4664000	3.48	5.06	NAT	A	2	AS NEEDED	63	\$100	2	AS NEEDED	63	\$100	developed rec = 5 because of trailhead
4665000	0.00	1.80	NAT	A	2	AS NEEDED	63	\$114	2	AS NEEDED	63	\$114	short "local" road probably classified as collector for road numbering
4666000	0.00	4.60	IMP	A	2	AS NEEDED	75	\$346	2	AS NEEDED	75	\$346	high ranking for fire and timer, but brushing in - can we close?, poor quality pit

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
4668000	0.00	0.80	NAT	A	2	AS NEEDED	63	\$51	2	AS NEEDED	63	\$51	historic road between crescent lake junction and davis lake - closed but heavily used (illegal use) - not recommended for use by FS
4668000	0.80	5.30	NAT	A	2	AS NEEDED	63	\$284	2	AS NEEDED	63	\$284	at end of rd. there is a ski trail
4669000	0.00	2.29	IMP	A	3	ANNUAL	474	\$1,085	3	ANNUAL	474	\$1,085	campground spur
4670000	0.00	2.01	NAT	A	2	AS NEEDED	63	\$127	2	AS NEEDED	63	\$127	directionality wrong on map - shows wrong end closed
4670000	2.01	2.35	NAT	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	heavy snowmobiles
4672000	0.00	5.47	IMP	A	2	AS NEEDED	63	\$346	2	AS NEEDED	63	\$346	
4672000	5.47	7.17	IMP	A	2	AS NEEDED	63	\$107	2	AS NEEDED	63	\$107	
4672000	7.17	8.02	IMP	A	2	AS NEEDED	63	\$54	2	AS NEEDED	63	\$54	
4672000	8.02	8.43	IMP	A	2	AS NEEDED	63	\$26	2	AS NEEDED	63	\$26	
4674000	0.00	2.72	NAT	A	2	AS NEEDED	63	\$172	2	AS NEEDED	63	\$172	
4676000	0.00	1.25	AGG	A	2	AS NEEDED	63	\$79	2	AS NEEDED	63	\$79	
4676000	1.25	2.40	AGG	A	2	AS NEEDED	63	\$73	2	AS NEEDED	63	\$73	
4676000	2.40	3.00	NAT	A	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	
4678000	0.00	2.42	IMP	A	2	AS NEEDED	63	\$153	2	AS NEEDED	63	\$153	
4678000	2.42	2.60	IMP	A	2	AS NEEDED	63	\$11	2	AS NEEDED	63	\$11	
4680000	0.00	4.70	IMP	A	2	REGULAR	236	\$1,106	2	REGULAR	236	\$1,106	
4680000	4.70	6.20	IMP	A	2	REGULAR	236	\$354	2	REGULAR	236	\$354	
4682000	0.00	4.60	IMP	A	2	AS NEEDED	63	\$291	2	AS NEEDED	63	\$291	back access out of diamond view estates subdivision - do not "encourage" access in the future
4685000	0.00	1.20	IMP	A	2	AS NEEDED	63	\$76	2	AS NEEDED	63	\$76	
5800680	0.00	0.61	BIT	A	4	ANNUAL	1307	\$797	4	ANNUAL	1307	\$797	trailhead
5800681	0.00	0.08	BIT	A	4	ANNUAL	1307	\$105	4	ANNUAL	1307	\$105	NEAR ODELL RESORT OR CG?
5800685	0.00	0.46	BIT	A	3	ANNUAL	1307	\$601	3	ANNUAL	1307	\$601	ODELL CR CG
5800700	0.00	0.10	AC	A	4	ANNUAL	1307	\$131	4	ANNUAL	1307	\$131	campground spur
5800800	0.00	0.10	BIT	A	3	ANNUAL	1307	\$131	3	ANNUAL	1307	\$131	campground spur
5810000	0.00	1.88	AC	A	4	ANNUAL	1572	\$2,955	4	ANNUAL	1572	\$2,955	got it all
5810000	1.88	2.30	BIT	A	4	ANNUAL	1572	\$660	4	ANNUAL	1572	\$660	
5810210	0.00	0.30	BIT	A	4	ANNUAL	1307	\$392	4	ANNUAL	1307	\$392	campground, no spu permit
5810350	0.00	0.14	AGG	A	3	ANNUAL	0	\$0	3	ANNUAL	0	\$0	SHELTER COVE RESORT
5814000	0.00	1.50	IMP	A	2	ANNUAL	426	\$639	2	ANNUAL	426	\$639	mushroom camp road - maintenance level 2 road that gets lots of low clearance use (encouraged/required) - two months out of the year
5814000	1.50	2.72	NAT	A	2	REGULAR	224	\$273	2	REGULAR	224	\$273	
5814000	2.72	2.89	NAT	A	2	REGULAR	224	\$38	2	REGULAR	224	\$38	
5815000	0.00	2.24	IMP	A	2	REGULAR	236	\$528	2	REGULAR	236	\$528	high special uses - access to multiple communication towers, etc.
5815000	2.24	2.27	IMP	A	2	REGULAR	236	\$7	2	REGULAR	236	\$7	high special uses - access to multiple communication towers, etc.
5815000	2.27	2.90	NAT	A	2	REGULAR	224	\$141	2	REGULAR	224	\$141	high special uses - access to multiple communication towers, etc.
5815000	2.90	4.20	IMP	A	2	REGULAR	236	\$306	2	REGULAR	236	\$306	high special uses - access to multiple communication towers, etc.
5815000	4.20	7.96	IMP	A	2	REGULAR	236	\$885	2	REGULAR	236	\$885	high special uses - access to multiple communication towers, etc.

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
5815000	7.96	8.04	IMP	A	2	REGULAR	236	\$19	2	REGULAR	236	\$19	high special uses - access to multiple communication towers, etc.
5820000	0.00	0.26	NAT	A	2	AS NEEDED	75	\$20	2	AS NEEDED	75	\$20	majority of road on crown pacific land
5820000	0.26	0.38	NAT	A	2	AS NEEDED	75	\$8	2	AS NEEDED	75	\$8	
5820000	0.26	0.38	NAT	A	2	AS NEEDED	75	\$8	2	AS NEEDED	75	\$8	
5820000	0.38	0.70	NAT	A	2	AS NEEDED	75	\$24	2	AS NEEDED	75	\$24	
5825000	0.00	1.72	BIT	A	4	ANNUAL	1572	\$2,704	4	ANNUAL	1572	\$2,704	3 basic segments, the 1st -main access into two rivers subdivision - major access for rail road,cinderpit,snowmobiles, 2nd seg - big marsh, 3rd seg -hunting-boyscotts
5825000	1.72	6.70	IMP	A	2	REGULAR	236	\$1,172	2	REGULAR	236	\$1,172	main access into two rivers subdivision - major access for rail road
5825000	6.70	9.63	IMP	A	2	REGULAR	236	\$691	2	REGULAR	236	\$691	main access into two rivers subdivision - major access for rail road
5825000	9.63	11.17	IMP	A	2	REGULAR	236	\$363	2	REGULAR	236	\$363	main access into two rivers subdivision - major access for rail road
5825000	11.17	13.23	IMP	A	2	REGULAR	236	\$485	2	REGULAR	236	\$485	main access into two rivers subdivision - major access for rail road
5825000	13.23	15.06	AGG	A	2	REGULAR	334	\$610	2	REGULAR	334	\$610	main access into two rivers subdivision - major access for rail road
5826000	0.00	1.87	NAT	A	2	AS NEEDED	63	\$118	2	AS NEEDED	63	\$118	Bob Elliot Road
5826000	1.87	4.09	NAT	A	2	AS NEEDED	63	\$140	2	AS NEEDED	63	\$140	SPNM ?
5828000	0.00	1.92	NAT	A	2	AS NEEDED	63	\$121	2	AS NEEDED	63	\$121	"Matzataki ridge" - high use for mushroom picking
5828000	1.92	2.22	NAT	C	2	AS NEEDED	63	\$19	1	AS NEEDED	63	\$19	
5830000	0.00	1.99	AGG	A	3	ANNUAL	572	\$1,138	3	ANNUAL	572	\$1,138	also high use for mushroom picking - a main access into two-rivers subdivision, only access to lower deschutes, snowmobiles
5830000	1.99	2.77	IMP	A	3	ANNUAL	659	\$514	3	ANNUAL	659	\$514	
5830000	2.77	9.42	NAT	A	2	AS NEEDED	63	\$420	2	AS NEEDED	63	\$420	
5834000	0.00	2.50	NAT	A	2	AS NEEDED	63	\$158	2	AS NEEDED	63	\$158	no ROW over private land but provides primary and secondary access to Crown Pacific and Rail Road
5834000	2.50	2.85	NAT	C	2	AS NEEDED	63	\$22	1	AS NEEDED	63	\$22	
5835000	0.00	2.74	IMP	B	2	REGULAR	266	\$727	3	REGULAR	412	\$1,128	access two communities - secondary access to two-rivers subdivision
5835000	2.74	7.19	IMP	B	2	REGULAR	266	\$1,182	3	ANNUAL	534	\$2,377	
5840000	0.00	2.00	IMP	A	2	AS NEEDED	63	\$126	2	AS NEEDED	63	\$126	goes onto the winnma, mushrooms
5840000	2.00	4.22	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
5840000	6.01	6.83	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
5850000	0.00	1.40	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	access to powerline, railroad. low standard collector - may be so designated due to "numbering"
5852000	0.00	0.39	NAT	C	2	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	access to powerline, railroad. low standard collector - may be so designated due to "numbering"
5852000	0.39	0.68	NAT	C	2	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	low standard collector - may be so designated due to "numbering"
5852000	0.68	0.80	NAT	C	2	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	low standard collector - may be so designated due to "numbering"
5852000	0.80	0.80	NAT	C	2	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	low standard collector - may be so designated due to "numbering"
6000000	2.26	8.11	BIT	A	4	ANNUAL	1572	\$9,196	4	ANNUAL	1572	\$9,196	
6000000	8.11	11.82	AGG	A	3	ANNUAL	757	\$2,808	3	ANNUAL	757	\$2,808	
6000000	11.82	16.71	NAT	A	3	ANNUAL	462	\$2,259	3	ANNUAL	462	\$2,259	
6000000	16.71	21.09	NAT	A	3	ANNUAL	462	\$2,024	3	ANNUAL	462	\$2,024	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
6000180	0.00	1.04	BIT	A	4	ANNUAL	1307	\$1,359	4	ANNUAL	1307	\$1,359	
6000210	0.00	0.20	AGG	A	3	REGULAR	480	\$96	3	REGULAR	480	\$96	
6000220	0.00	0.46	AGG	A	3	REGULAR	480	\$221	3	REGULAR	480	\$221	
6000230	0.00	0.29	NAT	A	3	REGULAR	370	\$107	3	REGULAR	370	\$107	
6000250	0.00	0.22	IMP	A	3	REGULAR	382	\$84	3	REGULAR	382	\$84	
6000260	0.00	2.04	BIT	A	4	ANNUAL	1572	\$3,207	4	ANNUAL	1572	\$3,207	
6000280	0.00	1.30	NAT	A	3	REGULAR	370	\$480	3	REGULAR	370	\$480	
6000501	0.00	0.30	IMP	A	3	ANNUAL	474	\$142	3	ANNUAL	474	\$142	WINDIGO T.H.
6005000	0.15	2.00	BIT	A	4	ANNUAL	1572	\$2,908	4	ANNUAL	1572	\$2,908	
6005100	0.00	0.39	BIT	B	3	ANNUAL	1572	\$613	4	ANNUAL	1572	\$613	Crescent lake resort
6005100	0.39	0.40	AGG	A	3	AS NEEDED	277	\$3	3	AS NEEDED	277	\$3	
6010000	0.00	8.09	NAT	A	2	AS NEEDED	32	\$256	2	AS NEEDED	32	\$256	summit lake road
6015000	0.00	4.04	IMP	A	2	REGULAR	236	\$951	2	REGULAR	236	\$951	
6020000	0.00	2.22	IMP	A	3	ANNUAL	474	\$1,054	3	ANNUAL	474	\$1,054	
6020000	2.22	5.34	IMP	A	3	ANNUAL	474	\$1,477	3	ANNUAL	474	\$1,477	
6030000	0.00	2.40	NAT	A	2	AS NEEDED	63	\$152	2	AS NEEDED	63	\$152	big marsh, snowmobile route
6030000	2.40	4.00	NAT	B	1	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
6030000	4.00	4.70	NAT	A	1	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	
6100650	0.00	0.42	IMP	A	3	REGULAR	382	\$160	3	REGULAR	382	\$160	crescent creek CG road
6125000	0.00	0.87	NAT	A	2	AS NEEDED	63	\$55	2	AS NEEDED	63	\$55	Goolich Road - main route into subdivisions - plowed, but barely passable in winter months - no known easements
6125000	0.87	1.14	NAT	A	2	AS NEEDED	63	\$17	2	AS NEEDED	63	\$17	
6125000	2.64	3.34	NAT	A	2	AS NEEDED	63	\$44	2	AS NEEDED	63	\$44	
6125000	3.34	6.09	NAT	A	2	AS NEEDED	63	\$174	2	AS NEEDED	63	\$174	
6200000	0.00	0.60	BIT	A	4	ANNUAL	1572	\$943	4	ANNUAL	1572	\$943	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	0.60	0.62	BIT	A	4	ANNUAL	1572	\$27	4	ANNUAL	1572	\$27	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	0.62	1.30	BIT	A	4	ANNUAL	1572	\$1,071	4	ANNUAL	1572	\$1,071	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	1.30	2.13	BIT	A	4	ANNUAL	1572	\$1,308	4	ANNUAL	1572	\$1,308	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	2.13	3.80	AC	A	4	ANNUAL	1572	\$2,625	4	ANNUAL	1572	\$2,625	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
6200000	3.80	5.64	AC	A	4	ANNUAL	1572	\$2,891	4	ANNUAL	1572	\$2,891	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	5.64	5.76	AC	A	4	ANNUAL	1572	\$185	4	ANNUAL	1572	\$185	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	5.76	6.44	AC	A	4	ANNUAL	1572	\$1,071	4	ANNUAL	1572	\$1,071	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	6.44	10.91	AC	A	4	ANNUAL	1572	\$7,033	4	ANNUAL	1572	\$7,033	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	10.91	11.06	AC	A	4	ANNUAL	1572	\$233	4	ANNUAL	1572	\$233	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	11.06	13.40	IMP	A	3	ANNUAL	534	\$1,250	3	ANNUAL	534	\$1,250	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6200000	13.40	13.48	AC	A	4	ANNUAL	1572	\$126	4	ANNUAL	1572	\$126	ringo road - treated first five segments as a group - last segment is native and gravel surfaced and should be reconstructed if to be maintained to current prescription
6203000	0.10	0.80	NAT	A	2	AS NEEDED	63	\$44	2	AS NEEDED	63	\$44	short segment can't find - (Gilcrest Haul Route?) - E. side Wickiup, dump (?)
6210000	0.00	1.46	AGG	A	2	AS NEEDED	63	\$92	2	AS NEEDED	63	\$92	
6210000	3.00	6.12	AGG	A	2	AS NEEDED	63	\$197	2	AS NEEDED	63	\$197	
6212000	0.00	2.12	AGG	A	2	AS NEEDED	32	\$67	2	AS NEEDED	32	\$67	
6214000	0.38	1.56	IMP	A	2	AS NEEDED	32	\$37	2	AS NEEDED	32	\$37	
6220000	0.00	3.51	IMP	A	2	AS NEEDED	63	\$222	2	AS NEEDED	63	\$222	2ndary access
6220000	3.51	4.57	IMP	A	2	AS NEEDED	63	\$67	2	AS NEEDED	63	\$67	
6220000	4.57	5.91	IMP	A	2	AS NEEDED	63	\$85	2	AS NEEDED	63	\$85	
6222000	0.00	1.00	IMP	A	2	AS NEEDED	63	\$63	2	AS NEEDED	63	\$63	
6222000	1.00	4.00	IMP	A	2	AS NEEDED	63	\$190	2	AS NEEDED	63	\$190	
6224000	0.00	3.46	AGG	A	2	AS NEEDED	63	\$219	2	AS NEEDED	63	\$219	
6230000	0.00	3.10	IMP	A	2	AS NEEDED	63	\$196	2	AS NEEDED	63	\$196	
6230000	3.10	3.70	IMP	A	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	
6230000	3.70	10.00	IMP	A	2	AS NEEDED	63	\$398	2	AS NEEDED	63	\$398	
6240000	0.00	1.81	IMP	A	2	AS NEEDED	63	\$114	2	AS NEEDED	63	\$114	
6240000	1.81	2.41	IMP	A	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	
6240000	2.41	4.40	NAT	A	2	AS NEEDED	32	\$63	2	AS NEEDED	32	\$63	
6240000	4.40	6.10	IMP	A	2	AS NEEDED	63	\$107	2	AS NEEDED	63	\$107	
6245000	0.00	0.04	IMP	A	2	AS NEEDED	63	\$3	2	AS NEEDED	63	\$3	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
6245000	0.04	1.45	IMP	A	2	AS NEEDED	63	\$89	2	AS NEEDED	63	\$89	
6245000	1.45	1.63	IMP	A	2	AS NEEDED	63	\$11	2	AS NEEDED	63	\$11	
6245000	1.63	2.33	IMP	A	2	AS NEEDED	63	\$44	2	AS NEEDED	63	\$44	
6400600	0.00	0.59	BIT	A	3	ANNUAL	1307	\$771	3	ANNUAL	1307	\$771	lower Perry South campground
6400620	0.00	0.20	BIT	A	3	ANNUAL	1307	\$261	3	ANNUAL	1307	\$261	upper Perry South campground
6400700	0.00	0.20	NAT	A	3	AS NEEDED	314	\$63	3	AS NEEDED	314	\$63	Monte campground
9400000	0.29	0.60	AGG	A	3	AS NEEDED	277	\$86	3	AS NEEDED	277	\$86	
9402000	0.00	0.30	NAT	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	
9402000	0.30	3.31	NAT	A	2	AS NEEDED	63	\$190	2	AS NEEDED	63	\$190	
9402000	3.42	3.80	NAT	A	2	AS NEEDED	63	\$24	2	AS NEEDED	63	\$24	
9407000	14.20	14.80	NAT	A	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	Boundary Springs Road
9407000	15.10	15.70	NAT	A	2	AS NEEDED	63	\$38	2	AS NEEDED	63	\$38	Boundary Springs Road
9407000	15.90	16.20	NAT	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	Boundary Springs Road
9407000	16.40	16.50	NAT	A	2	AS NEEDED	63	\$6	2	AS NEEDED	63	\$6	Boundary Springs Road
9407000	17.10	17.40	NAT	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	Boundary Springs Road
9407000	18.00	18.20	NAT	A	2	AS NEEDED	63	\$13	2	AS NEEDED	63	\$13	Boundary Springs Road
9410000	0.00	2.20	NAT	A	2	AS NEEDED	63	\$139	2	AS NEEDED	63	\$139	all private on Deschutes - comes from 3115 on Winema - very important road to Winema
9450000	0.00	0.20	NAT	A	2	AS NEEDED	32	\$6	2	AS NEEDED	32	\$6	also all Winema road
9604000	0.00	0.30	AGG	A	2	ANNUAL	0	\$0	2	ANNUAL	0	\$0	WINEMA ROAD (SHOULD BE 8604)
9700100	0.00	0.20	BIT	C	5	ANNUAL	1572	\$314	4	ANNUAL	1572	\$314	Lava River Cave
9701000	0.00	5.51	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9702000	0.00	0.05	BIT	A	5	ANNUAL	1572	\$79	5	ANNUAL	1572	\$79	
9702000	0.05	3.87	AGG	B	3	AS NEEDED	277	\$1,058	4	AS NEEDED	277	\$1,058	
9702100	0.00	0.04	BIT	A	4	ANNUAL	1307	\$56	4	ANNUAL	1307	\$56	
9702100	0.00	0.04	BIT	A	4	ANNUAL	1307	\$56	4	ANNUAL	1307	\$56	
9702100	0.04	1.63	BIT	A	4	ANNUAL	1307	\$2,074	4	ANNUAL	1307	\$2,074	
9702101	0.00	0.10	BIT	B	3	ANNUAL	1307	\$131	4	ANNUAL	1307	\$131	
9710000	0.00	0.88	AGG	A	3	ANNUAL	877	\$772	3	ANNUAL	877	\$772	
9710000	0.88	8.38	IMP	A	3	ANNUAL	779	\$5,843	3	ANNUAL	779	\$5,843	
9710000	8.38	11.45	IMP	A	2	AS NEEDED	75	\$231	2	AS NEEDED	75	\$231	
9710000	11.45	13.08	NAT	A	2	AS NEEDED	63	\$103	2	AS NEEDED	63	\$103	
9710000	13.08	15.80	NAT	A	2	AS NEEDED	63	\$172	2	AS NEEDED	63	\$172	
9710000	15.80	20.67	NAT	A	2	AS NEEDED	63	\$308	2	AS NEEDED	63	\$308	
9710000	20.67	23.03	NAT	A	2	AS NEEDED	63	\$149	2	AS NEEDED	63	\$149	
9710000	23.03	24.50	NAT	A	2	AS NEEDED	75	\$110	2	AS NEEDED	75	\$110	
9710000	24.50	25.13	NAT	A	2	AS NEEDED	75	\$48	2	AS NEEDED	75	\$48	
9711000	0.00	5.15	NAT	A	2	AS NEEDED	63	\$325	2	AS NEEDED	63	\$325	
9714000	0.00	2.80	NAT	A	2	AS NEEDED	63	\$177	2	AS NEEDED	63	\$177	
9720000	0.00	0.26	BIT	A	4	ANNUAL	1572	\$409	4	ANNUAL	1572	\$409	
9720000	0.26	0.54	AGG	B	3	ANNUAL	1122	\$316	4	ANNUAL	1572	\$443	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
9720000	0.54	0.71	AGG	B	3	ANNUAL	1122	\$188	4	ANNUAL	1572	\$264	
9720000	0.71	0.77	IMP	B	3	ANNUAL	1024	\$59	4	ANNUAL	1572	\$91	
9720000	0.77	2.42	IMP	A	3	ANNUAL	1024	\$1,691	3	ANNUAL	1024	\$1,691	
9720000	2.42	3.16	IMP	A	3	ANNUAL	1024	\$761	3	ANNUAL	1024	\$761	
9720000	3.16	3.23	IMP	A	3	ANNUAL	1024	\$66	3	ANNUAL	1024	\$66	
9720000	3.23	3.35	IMP	A	3	ANNUAL	1024	\$128	3	ANNUAL	1024	\$128	
9720000	3.35	8.79	IMP	A	3	ANNUAL	1024	\$5,570	3	ANNUAL	1024	\$5,570	
9720000	8.79	10.74	NAT	A	2	ANNUAL	0	\$0	2	ANNUAL	0	\$0	
9720950	0.00	0.00	IMP	A	3	ANNUAL	844	\$1	3	ANNUAL	844	\$1	
9721000	0.00	3.21	NAT	A	2	AS NEEDED	63	\$203	2	AS NEEDED	63	\$203	
9723000	0.00	0.02	IMP	A	2	AS NEEDED	63	\$1	2	AS NEEDED	63	\$1	
9723000	0.00	0.02	IMP	A	2	AS NEEDED	63	\$1	2	AS NEEDED	63	\$1	
9723000	0.02	3.53	IMP	A	2	AS NEEDED	63	\$222	2	AS NEEDED	63	\$222	
9724000	0.00	1.56	IMP	A	2	AS NEEDED	63	\$99	2	AS NEEDED	63	\$99	
9724000	1.56	4.48	NAT	A	2	AS NEEDED	63	\$185	2	AS NEEDED	63	\$185	
9725000	0.00	6.55	IMP	A	2	AS NEEDED	63	\$414	2	AS NEEDED	63	\$414	
9725000	6.55	8.62	NAT	A	2	AS NEEDED	63	\$131	2	AS NEEDED	63	\$131	
9725000	8.62	8.94	NAT	A	2	AS NEEDED	63	\$20	2	AS NEEDED	63	\$20	
9730000	0.00	5.80	IMP	A	2	AS NEEDED	63	\$367	2	AS NEEDED	63	\$367	
9730000	5.80	7.11	NAT	A	2	AS NEEDED	63	\$83	2	AS NEEDED	63	\$83	
9735000	0.00	4.05	AGG	A	2	ANNUAL	731	\$2,961	2	ANNUAL	731	\$2,961	
9735000	4.05	9.26	IMP	A	2	ANNUAL	513	\$2,673	2	ANNUAL	513	\$2,673	
9735000	9.26	10.92	IMP	A	2	ANNUAL	513	\$852	2	ANNUAL	513	\$852	
9735000	10.92	13.06	IMP	A	2	ANNUAL	513	\$1,098	2	ANNUAL	513	\$1,098	
9736000	0.00	3.98	NAT	A	2	ANNUAL	316	\$1,258	2	REGULAR	224	\$892	9735 to McKay Crossing
9736000	3.98	4.17	NAT	A	2	AS NEEDED	63	\$12	2	AS NEEDED	63	\$12	
9736000	4.17	6.11	IMP	A	2	AS NEEDED	63	\$123	2	AS NEEDED	63	\$123	
9736000	6.11	6.72	IMP	A	2	AS NEEDED	63	\$39	2	AS NEEDED	63	\$39	
9736000	6.72	7.11	IMP	A	2	AS NEEDED	63	\$25	2	AS NEEDED	63	\$25	
9736000	7.11	11.36	IMP	A	2	AS NEEDED	63	\$268	2	AS NEEDED	63	\$268	
9736000	11.36	13.71	IMP	A	2	AS NEEDED	63	\$149	2	AS NEEDED	63	\$149	wooden pipe line.
9745000	2.13	2.67	IMP	A	2	AS NEEDED	63	\$34	2	AS NEEDED	63	\$34	
9745000	2.67	4.09	IMP	A	2	AS NEEDED	63	\$90	2	AS NEEDED	63	\$90	
9750000	0.00	0.03	NAT	A	2	AS NEEDED	63	\$2	2	AS NEEDED	63	\$2	
9750000	0.00	0.03	NAT	A	2	AS NEEDED	63	\$2	2	AS NEEDED	63	\$2	
9750000	0.03	0.19	NAT	A	2	AS NEEDED	63	\$10	2	AS NEEDED	63	\$10	
9750000	0.03	0.19	NAT	A	2	AS NEEDED	63	\$10	2	AS NEEDED	63	\$10	
9750000	0.19	0.47	NAT	A	2	AS NEEDED	63	\$18	2	AS NEEDED	63	\$18	
9750000	0.47	3.30	NAT	A	2	AS NEEDED	63	\$179	2	AS NEEDED	63	\$179	
9750000	3.30	3.31	IMP	A	2	AS NEEDED	63	\$0	2	AS NEEDED	63	\$0	
9750000	3.31	4.20	IMP	A	2	AS NEEDED	63	\$57	2	AS NEEDED	63	\$57	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
9751000	0.00	0.50	AGG	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9751000	0.50	2.50	AGG	C	2	AS NEEDED	0	\$0	1	AS NEEDED	0	\$0	
9751000	2.50	4.97	AGG	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9753000	0.00	5.00	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9755000	0.00	5.10	NAT	A	2	AS NEEDED	63	\$322	2	AS NEEDED	63	\$322	
9755000	5.10	7.50	AGG	A	2	AS NEEDED	63	\$152	2	AS NEEDED	63	\$152	only good rock
9756000	0.00	1.40	NAT	A	2	AS NEEDED	63	\$88	2	AS NEEDED	63	\$88	
9758000	0.00	4.12	IMP	A	2	AS NEEDED	63	\$260	2	AS NEEDED	63	\$260	2ndary access
9758000	4.12	5.20	IMP	A	2	AS NEEDED	63	\$68	2	AS NEEDED	63	\$68	
9760000	0.00	4.00	NAT	A	2	AS NEEDED	63	\$253	2	AS NEEDED	63	\$253	same as9410 but even more so
9760000	4.00	10.00	NAT	A	2	AS NEEDED	63	\$379	2	AS NEEDED	63	\$379	
9760000	11.60	12.80	NAT	A	2	AS NEEDED	63	\$76	2	AS NEEDED	63	\$76	
9760000	14.10	14.90	NAT	A	2	AS NEEDED	63	\$51	2	AS NEEDED	63	\$51	
9762000	0.00	2.18	NAT	A	2	AS NEEDED	63	\$138	2	AS NEEDED	63	\$138	not on FS
9765000	0.00	1.40	NAT	A	2	REGULAR	224	\$313	2	REGULAR	224	\$313	2ndary tie to cresent and Gilcrest
9765000	2.00	3.00	NAT	A	2	REGULAR	224	\$224	2	REGULAR	224	\$224	
9765000	3.30	4.40	NAT	A	2	REGULAR	224	\$246	2	REGULAR	224	\$246	
9765000	5.40	6.50	NAT	A	2	REGULAR	224	\$246	2	REGULAR	224	\$246	
9765000	6.80	6.88	NAT	A	2	REGULAR	224	\$18	2	REGULAR	224	\$18	
9765000	6.88	7.10	NAT	A	2	REGULAR	224	\$49	2	REGULAR	224	\$49	
9768000	0.00	0.58	AGG	A	2	REGULAR	364	\$212	2	REGULAR	364	\$212	access to boundary springs CG (RR and private access)
9768000	0.58	1.00	AGG	A	2	REGULAR	364	\$152	2	REGULAR	364	\$152	
9768000	1.30	3.30	AGG	A	2	REGULAR	364	\$727	2	REGULAR	364	\$727	
9768000	3.55	3.90	AGG	A	2	REGULAR	364	\$127	2	REGULAR	364	\$127	
9768000	3.90	4.30	NAT	A	2	AS NEEDED	63	\$25	2	AS NEEDED	63	\$25	
9768000	4.60	4.90	NAT	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	
9768000	5.20	6.10	NAT	A	2	AS NEEDED	63	\$57	2	AS NEEDED	63	\$57	
9768000	6.30	7.20	NAT	A	2	AS NEEDED	63	\$57	2	AS NEEDED	63	\$57	
9768000	7.20	8.10	NAT	A	2	AS NEEDED	63	\$57	2	AS NEEDED	63	\$57	
9768000	8.10	8.20	NAT	A	2	AS NEEDED	63	\$6	2	AS NEEDED	63	\$6	
9768058	0.00	0.30	BIT	A	4	ANNUAL	1307	\$392	4	ANNUAL	1307	\$392	ROSEDALE / CRESCENT HOUSING
9770000	0.00	0.30	AGG	A	2	REGULAR	364	\$109	2	REGULAR	364	\$109	sole access to newly aquired land - accesses Schoonover Subdivision
9770000	0.30	0.40	NAT	A	2	REGULAR	224	\$22	2	REGULAR	224	\$22	
9770000	3.20	4.20	NAT	A	2	AS NEEDED	63	\$63	2	AS NEEDED	63	\$63	
9772000	4.00	4.05	NAT	A	2	AS NEEDED	63	\$3	2	AS NEEDED	63	\$3	
9772000	4.00	4.05	NAT	A	2	AS NEEDED	63	\$3	2	AS NEEDED	63	\$3	
9772000	4.05	6.60	NAT	A	2	AS NEEDED	63	\$161	2	AS NEEDED	63	\$161	
9772000	7.60	7.90	NAT	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	
9772000	9.00	10.45	NAT	A	2	AS NEEDED	63	\$92	2	AS NEEDED	63	\$92	
9772000	10.45	10.50	NAT	A	2	AS NEEDED	63	\$3	2	AS NEEDED	63	\$3	

ROAD	BMP	EMP	SURF	Mgmt Strategy	Current Maintenance				Proposed Maintenance				REMARKS
					Maint Level	Maint Frequency	cost /mile	Segment COST	Maint Level	Maint Frequency	cost / mile	Segment COST	
9774000	0.00	0.50	NAT	A	2	ANNUAL	0	\$0	2	ANNUAL	0	\$0	CB 10 / ALL PRIVATE / NO INTEREST TO US
9775000	0.00	1.16	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	mostly private, goes to mill
9775000	1.16	2.03	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	2.03	2.17	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	2.17	2.18	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	2.17	2.18	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	2.18	2.34	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	2.34	3.27	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	3.27	3.95	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	Sheviln-Hixon camp and RR tresile
9775000	3.95	5.30	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	5.30	7.00	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	7.00	7.50	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	7.50	8.50	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	8.50	9.48	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	9.48	11.00	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	Sheviln-Hixon Summit Line and Station
9775000	11.00	12.64	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	12.64	14.40	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	14.40	14.91	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	14.91	16.00	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	16.00	17.00	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	17.00	18.50	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9775000	18.50	18.90	NAT	A	2	AS NEEDED	0	\$0	2	AS NEEDED	0	\$0	
9780000	0.00	1.93	NAT	A	2	AS NEEDED	63	\$122	2	AS NEEDED	63	\$122	
9780000	1.93	4.00	NAT	A	2	AS NEEDED	63	\$131	2	AS NEEDED	63	\$131	
9785000	0.00	0.30	NAT	A	2	AS NEEDED	63	\$19	2	AS NEEDED	63	\$19	
9785000	2.60	2.75	NAT	A	2	AS NEEDED	63	\$10	2	AS NEEDED	63	\$10	
9785000	2.75	3.10	NAT	A	2	AS NEEDED	63	\$22	2	AS NEEDED	63	\$22	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
Badlands	1800000	6.12	0	0	5	M	No special habitats mapped within 200 ft. of road.	Some surveys done. Low probability of isolated <i>Botrychium pumicola</i> population.	No weeds currently. High fire probability but no weeds on segment nor high infestations close by.		
	1840000	6.08	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Risk of fire with potential for weeds to spread using roads as a vehicle. Medium traffic flow.		
	1845000	6.75	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Same as 1840.		
	1849000	4.69	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Same notes as 1840.		
	1850000	1.25	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Some bull thistle in area.		
	2017000	3.91	3	6	6	M	Mid-late seral sage and bitterbrush (<i>Castilleja</i> habitat). Mt. Mahogany on ridgeline. Last .5 mi. flat, south side Pine Mt. - low sage and pumice with BOPU (soil change). Inlow sage flat at bottom, potential for resource damage from road access. Hunters and OHV's use area.	CACH; up by observatory, will rank out higher because known spotted knapweed population. BOPU in flat at bottom of slope. CACH at top of slope close to knapweed, which came in along the road. Just past observatory - moderate use.	Spotted knapweed; not concerned about bull thistle. Population relatively stable unless fire, high fuel loading in area. If fire, high risk of spread - knapweed came in because of road.	6110024	
	2017500	0.10	0	3	3	L	No special habitats mapped within 200 ft. of road.	No TES plants within 200 ft. of road, but road accesses CACH population at the end of it. Road allows access to the plant population. Seasonally high use, but most of year not high use.	No weeds currently. The road is allowing access for paragliders. Less than 5 knapweed plants at paraglider takeoff point, which had been pulled and may be eradicated. Need to check.		At campground.
	2100000	3.21	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Same notes as 1840. Accesses east side Newberry Crater.		
	2200000	8.52	0	0	3	L	No special habitats mapped within 200 ft. of road.	BOPU in area but not right along the road.	Bull thistle. Always threat of fire.	6110025	
	2239000	0.55			L	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2269000	1.69	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle	6110048	
	2270000	3.15	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2300000	17.80	6	6	3	M	Buckwheat flats/rhyolite pumice; huge pumice plain bisected by road. Fragile habitat. Former WWII landing strip; lodgepole encroaching. Potential off-roading risk.	BOPU. BOPU in buckwheat flats? High potential to occur around edges of pumice plain. Road probably not big threat except for potential OHV use' site sensitive to even minimal off-roading.	No weeds currently. Pretty clean area, but OHV's on trailers being pulled out to Sand Spring; hunting use in fall.		
	2310000	6.69	0	2	3	L	No special habitats mapped within 200 ft. of road.	Road allows access to some BOPU populations; possibility of isolated BOPU plants along road.	No weeds currently. Primarily lodgepole. Always risk of fire going through, and any weeds would take off along the road. Not as well used as 1840, so a 3 instead of a 4 rating. Bit farther out, not right next to China Hat road like 1840.		
	2312000	3.59	6	4	3	M	Buckwheat flats/rhyolite pumice. Risk of off-roading into fragile habitat. Less traffic than Rd. 23, but still OHV's and other 4 wheel use in the area.	Rhyolite flat potential BOPU habitat. Not surveyed. Off-road recreation risk.	No weeds currently. Not sure about fire risk, but assume some level of risk, with always the potential to then get weeds that will travel down road.		
2313000	3.50	0	2	3	L	No special habitats mapped within 200 ft. of road.	Pumice openings potential BOPU habitat; some isolated BOPU plants.	No weeds currently. Not sure about fire risk, but assume some level of risk, with always the potential to then get weeds that will travel down road.			
2315000	2.61	0	0	4	L	No special habitats mapped within 200 ft. of road.	No TES plants within 200 ft. of road. More in ponderosa and out of pumice.	No weeds currently, but similar threats mentioned above.			

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	2316000	4.60	0	0	4	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle. Weed risk same as above.	6110045	
	2510000	10.99	0	6	4	M	No special habitats mapped within 200 ft. of road.	BOPU; Historic woodcutting through population; risk of off-roading (open area). High traffic.	No weeds currently, but fair amount of use.		
	9710000	3.83	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Fire risk for weeds. Not a main road.		Narrow road, with trees closing in.
Badlands Total		99.61									
Crescent	4600000	3.30	2	0	8	1H	Wetland on the road above Dell Springs with <i>Tritomaria exsectiformis</i> . Road itself may not impact Dell Springs but weed risk. Couple small wet areas also, both uphill from road.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweed, Canada & bull thistle, St. Johnswort; tansy. High weed risk because high traffic & recreation; known weed sites; recent high disturbance along road. Reveg with fescue very successful in 3rd and 4th years after planting.	61200047; 6120032; 6120031.	Paved, about 3 miles in watershed; does not cross any streams. Reconstructed in 1995-1996 and there were a lot of concerns about weeds.
	4660000	0.04	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	diffuse; bull thistle. High recreation summer & winter.	6120030	Gravel, only about 1/10 mi. in watershed. Goes around Royce Mt.; gravel; on relatively steep side of butte, so south side butte may have some interception runoff.
	4672000	6.32	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Does go onto Rd. 46.		
	4674000	2.72	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse; bull; St. Johnswort. Isolated from other roads and guessing it's a bull thistle site in old timber sale.	6120030 but Signe says it's 6120033 on our map.	Native surface rd.; connects to 6210 rd.; no stream crossings; skirts the southwest portion of Hamner Butte.
	4676000	1.25	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Gravel, same notes, same rating 4674. West side of Hamner Butte.
	4678000	2.42	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		SE side Hamner Butte; Improved native surface; no stream crossings; may affect flow and fine sediment bec. Native surface and on steeper slope.
	4680000	4.70	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle. Open harvest areas.	6120033	Same exact notes & rating as 4678. Down the slope 1/2 mi. from 4678.
	4682000	4.60	0	0	1	L	No Special habitats within 200 ft. of road. Just mixed conifer dry; no wetlands.	Both ALVI and MIJE site but not on TES list.	No weeds currently.		Same notes & rating as 4672; 1/4 mi. below 4672. Goes around south base of Royce Mt.
	5800000	4.87	6	0	9	1H	Lodgepole wetland; series of small wet areas along road. Cinder build-up is problem/sedimentation.	No TES plants known within 200 ft. of road.	Spotted; Canada Thistle; Bull thistle; St. Johnswort; Dalmation toadflax; Butter & Eggs.; Lot of private land and highway maintenance; cinder distribution and removal a problem. Repeated disturbance with existing weed populations.	6120061	Crosses Crescent Creek within this watershed plus at least 3 other intermittent tributaries. Paved, state hwy. 1 fine sed bec. Of sanding practices of ODOT (sanding & plowing contributes some fine sediment to stream system, and also will contribute to noxious weed threat. In Crescent watershed, road is rel. flat. Localized floodplain fnct. Crosses bridge so impacts to wetland rel low because allows wetland to continue to function properly as opposed to roadfill with culvert over stream -- then lose function of wetland bec. channeling water thru wetland.
	5814000	2.72	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Leads to mushroom camp, which could be a weed vector.		2 segments; one is aggregate crushed & one is native surface - but both same ratings; no creek crossings, no wetlands; Connects to 6020 from 58.
	5815000	3.84	5	0	5	M	Alder drainage north side of butte. Very steep; likely impacted by road. Sedimentation into creek. Lot past timber harvest.	No TES plants known within 200 ft. of road.	Bull thistle. 6120004 is not on this road -- it's at the base of it. Seven Buttes and Seven Buttes Return areas -- lot of harvest.	6120004	Up to top of Odell Butte; crosses 4 intermittent tribs to Crescent Ck on north side in lower 2 miles; native surfaced (dirt or rock or whatever; did not bring in gravel); 3 for fine sed because steepness and 4 intermittent tributaries; prob. intercepts surface water; prob. pretty high risk for overland flow, but geology - landslide pushed up flow effects rating.
5825000	4.48	1	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Main Rd. to Big Marsh; no stream crossings; native surface; far enough away from Big Marsh to not affect wetland.	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	5826000	4.09	6	0	2	M	Engelmann spruce/sedge; lodgepole wetland; south end of marsh; lot rec use & dispersed sites. Native surface, poor shape (?), close to high water table. Road might restrict flow at Otter & Fly Creeks.	No TES plants known within 200 ft. of road.	No weeds currently. Far from any roads that have known weeds.		Crosses Big Marsh, Otter, Dublin and Fly Creeks, and parallels Big Marsh for approx. 3/4 mi. Native surface; for fine sed - 2ish range bec. Road is flat. Appears close to Big Marsh; bec. Crosses 2 perennial streams and 2 intermittent streams - prob. some impact there. Small culverts, small creeks. Some dispersed camping, pullouts for canoeing. Low risk but in 3 end of things. Fish - unknown culvert situations at Big Marsh & Otter Creek. 4 wetland range - likely getting some sediment delivery to that part of marsh that it parallels; prob. somewhat limited the volume, timing & distribution of water.
	6000000	21.09	3 (5 for upper gravelled).	0	6	M	Lodgepole wetland, spruce bottomland, wet meadow. Road crosses several creeks, paved to gravel; connects to Hwy 58, goes up to Windigo Pass. Small intermittent drainages may be impacted by steep road. Moderate risk in upper portions (steep drainages) where gravelled/native surface.	No TES plants known within 200 ft. of road.	Canada thistle, bull thistle. Dalmation toadflax. Knapweed pulled at entrance to Spring Creek campground, not found since. Boy scout camp in area, lot possibility for weed introduction; lot ground disturbance.	6120008	Around Crescent Lake, then goes south to Windigo Pass. Paved portion around CRE lake; paved portion crosses Cold and Whitefish Creeks. Gravelled. 5 segments (change in surface). Lump into 2 segments - paved and gravel; Gravel portion crosses Refrigerator Creek & 10 intermittent tribs. Crosses at least one major wetland on Cold Creek.
	6000180	1.04	2	0	5	M	No Special habitats within 200 ft. of road according to botany glob. However, area contains numerous springs and seeps.	No TES plants known within 200 ft. of road.	Canada & bull thistles. Recreation risk.	6120008	Either campground or boat ramp road. Paved or gravel.
	6000210	0.20	2	0	5	M	No Special habitats within 200 ft. of road according to botany glob. However, area contains numerous springs and seeps.	No TES plants known within 200 ft. of road.	Canada & bull thistles. Recreation risk.	6120008	Either campground or boat ramp road. Paved or gravel.
	6000220	0.46	3	0	5	M	Engelmann spruce bottomland (Spring Creek?).	No TES plants known within 200 ft. of road.	Canada & bull thistles. Recreation risk.	6120008	Either campground or boat ramp road. Paved or gravel.
	6000230	0.29	2	0	5	M	Numerous springs and seeps.	No TES plants known within 200 ft. of road.	Canada & bull thistles. Recreation risk.	6120008	Either campground or boat ramp road. Paved or gravel.
	6000250	0.22	2	0	5	M	Numerous springs and seeps.	No TES plants known within 200 ft. of road.	Canada & bull thistles. Recreation risk.	6120008	Either campground or boat ramp road. Paved or gravel.
	6000260	2.04	2	0	5	M	Numerous springs and seeps.	No TES plants known within 200 ft. of road.	Canada & bull thistles. Recreation risk.		Either campground or boat ramp road. Paved or gravel.
	6000280	1.30	2	0	5	M	Numerous springs and seeps.	No TES plants known within 200 ft. of road.	Canada & bull thistles. Recreation risk.		Either campground or boat ramp road. Paved or gravel.
	6005000	2.00	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Canada; Bull; toadflax. Up in north end. High rec, high traffic.	6120009	Might be road to resort at north end of Crescent Lake?
	6005100	0.40	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Assuming same condition and problems as 6005.		
	6010000	8.09	8	0	2	1H	Lodgepole wetland, impacted by road. Heavy sedimentation in some areas. Road in bad shape - gullied and water carrying road into wetlands. Parallels Summit Creek part of way.	No TES plants known within 200 ft. of road.	Low risk		Goes up to Summit Lake. Native surface, crosses Summit Creek & 2 intermittent tributaries and 4 wetlands. Steep, big ruts. Visible erosion.
	6015000	4.04	0	0	5	1H; M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Canada thistle on lake side and not seen since flooded for 1 1/2 years long. Upper portion has higher weed risk (where comes off Rd. 60; north end of lake; campgrounds and resort there). Bull thistle.	6120008; 6120009	Crosses Crescent Creek twice. Located on east side Crescent Lake, midslope, no other stream crossings.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	6020000	2.22	7			1H	Lodgepole wetland, spruce bottomland. Wet areas created by railroad along this road; wet complex on both sides of road (Big Marsh Creek area), culvert may impact wetlands. Road completely bisects stream. Weed risk from railroad and road.	No TES plants known within 200 ft. of road.	No weeds currently.		Crosses Refrigerator and Big Marsh Creeks and associated wetlands. About 1 1/2 miles in Crescent Watershed; native surface. Crosses 2 intermittent tributaries and 3 wetlands. Culverts restricting floodplain function??
	6030000	4.70	9	0	1	1H	Numerous springs flow from hillside into Big Marsh. Road crosses them with culverts. Some culverts have highly impacted those drainages to point of probably disrupting amphibian migration patterns. Culverts must be dealt with. Very steep slope on uphill side of road.	No TES plants known within 200 ft. of road.	No weeds currently.		West side of Big Marsh. 4 intermittent stream crossings; midslope; follows contour; native surface. Closed part of road.
	6100000	5.98	5	0	8	1H	Lodgepole wetland; willow/sedge. Might be sediment build-up due to high cinder distribution in winter; likely impacting wetlands. Probably healthiest aspen stand on private land where Rd. 61 crosses Crescent Creek; multi-age stand.	No TES plants known within 200 ft. of road.	Spotted; Canada & bull thistles. Regraded road base in 1995-1996; revegetated. Mostly bull thistle. Knapweed controlled by pulling. Canada thistle plants close to creek, pulled, unknown status. High traffic & recreation; connects to Cascade Lakes Hwy from Hwy 58 (known weed corridor).	6120004	Crosses Crescent Creek; paved; Crescent Creek narrows where crosses, so 1 not 0 on fine sed.
	6100650	0.42	2	0	6	M	Willow/sedge. Crescent Creek.	No TES plants known within 200 ft. of road.	Spotted, Canada & bull thistles.	6120004	Campground road to Crescent Creek campground. Gravelled.
	6200000	5.02	6	0	6	M	Willow/sedge. Road impacts Crescent Creek (bridge abutments restrict flow).	No TES plants known within 200 ft. of road.	Diffuse & Spotted. Intermittent high traffic, depending on where Crown logging. Traffic comes from mill, where high weed problem.	6120012	4 segments (in/out watershed); crosses Crescent Creek and one wetland assoc. with Crescent Creek and maybe 2 intermittents. Crescent Creek portion on Crown Pacific land.
	6210000	6.12	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Gravel; 3 segments; crosses 4 intermittent tributaries; Goes by base Ringo Butte. Connects 62 to 46.
	6212000	2.12	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle (in large timber harvest area). Area not been disturbed for 17-20 years, but bull thistle sustaining and not disappearing. High ground disturbance.	6120019	Gravel; crosses 1 intermittent tributaries;
	6214000	1.56	0	0	1	L	No Special habitats within 200 ft. of road. Mixed conifer, old timber harvest areas, .s. side Ringo Butte.	No TES plants known within 200 ft. of road.	No weeds currently.		Gravel; 2 segments; crosses no intermittent tributaries; goes up Ringo Butte.
Crescent Total		114.65									
Crooked River Grasslands	US-97	2.09	0	0	7	1H			Weed risk.		Anywhere crosses grasslands on Hwy 97 - no streams.
Crooked River Grasslands Total		2.09									
Devils Garden	1800000	10.58	0	3	4	M	No special habitats mapped within 200 ft. of road.	BOPU in cattle waterline by China Hat Guard Station. Small population, off & not impacted by road.	Spotted knapweed actually up from Rd. 18 on Rd. 210. About 1/2 mile away from BOPU, down another road. Pretty clean area (as far as weeds). 4 because weeds aren't on road segment but high risk species on road feeding into this road.	6110047	
	1849000	1.71	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. No weeds, and doesn't get ton of use.		On top of China Hat.
	1850000	2.32	0	0	3	L	No special habitats mapped within 200 ft. of road.	Scattered BOPU populations immediately to south but not within this road buffer.	No weeds currently, but probably gets little more use than 1849.		Border south base of China Hat; defines the southern base.
	2100000	4.62	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. No big populations around there.		
	2125000	0.97	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle. Not really on this road, but on spur road off this road.	6110069	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	2127000	8.02	0	3	2	L	No special habitats mapped within 200 ft. of road.	BOPU adjacent to road on BFR map - probably 10 year old sighting and probably small (< 5 plants) and probably within 200 ft. of road.	No weeds currently.		
	2200000	7.76	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2200550	0.10	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Couldn't find on map; gave same rating as 22 rd.
	2230000	7.00	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. More of main road; logging haul route.		Main road.
	2235000	0.21	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2236000	4.32	0	0	2	L	No special habitats mapped within 200 ft. of road.	BOPU population (beyond 200 ft.); probably not impacted by road. Woodcutting concerns possibly that may be less concern because designated areas now.	No weeds currently.		
	2238000	3.79	0	0	2	L	No special habitats mapped within 200 ft. of road.	BOPU but not being affected by the road. In a basin, lower elevation below the road and probably beyond 200 ft. buffer.	No weeds currently.		
	2239000	5.32	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2248000	3.24	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. Potential quackgrass population off this road along a spur road.		
	2259000	6.84	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2268000	3.37	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed; bull thistle. High infestation, right along the road (Opal Mine).	6110012	
	2269000	4.34	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2270000	2.72	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2274000	2.73	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2300000	12.47	0	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Some Canada thistle. Suspect road not playing big factor, but high risk species. Seasonally high use with hunting.		
	2315000	3.77	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2320000	3.14	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2325000	5.30	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Different species out there (Antennaria dimorpha), Mt. Mahogany zone.
	2350000	4.98	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	9710000	0.63	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	LAK-5-12	0.95	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Off Forest.
	LAK-5-12B	0.96	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Off Forest.
	LAK-6159	9.00	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Off Forest.
Devils Garden Total		121.14									No special habitats within 200 ft. roads.
Fall	4000000	11.91	3	3	7	1H	Wet meadow.	CACH. Plants are protected by shrubs.	Spotted knapweed.	6110109	Crosses wet meadow on private land? Paved, crosses 2 intermittent tribs and a small wetland. Where it crosses Deschutes River, it's in Pilot Butte watershed.
	4030000	5.40	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4032000	2.65	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	4040000	8.69	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4050000	3.90	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4100000	1.21	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Crosses 1 intermittent.
	4100200	0.90	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Crosses 1 intermittent.
	4140000	4.26	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.
	4180000	5.50	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.
	4188000	2.80	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.
	4200000	17.63	3	0	7	1H	Lodgepole wetland; Senecio wetland; willow/sedge.	No TES plants known within 200 ft. of road.	Spotted knapweed, dalmation toadflax.	6110117	Crosses Deschutes River; paved; Crosses small wetland associated with Indian creek. Wetlands where crosses Deschutes River; one at Fall River.
	4200210	1.10	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110106	Little spur that goes to campsite or ?
	4200290	0.30	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110117	Little spur that goes to campsite or ?
	4200300	0.15	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110117	Little spur that goes to campsite or ?
	4200350	0.30	3	0	4	M	Senecio wetland.	No TES plants known within 200 ft. of road.	No weeds currently.		Little spur that goes to campsite or ?
	4200355	0.10	3	0	4	M	Senecio wetland.	No TES plants known within 200 ft. of road.	No weeds currently.		Little spur that goes to campsite or ?
	4205000	3.75	3	0	4	M	Lodgepole wetland.	No TES plants known within 200 ft. of road.	No weeds currently.		
	4220000	3.10	0	3	4	M	No special habitats mapped within 200 ft. of road.	CACH. Plants are protected by shrubs.	No documented weeds.	6110106	No streams.
	4230000	2.30	0	3	4	M	No special habitats mapped within 200 ft. of road.	CACH. Plants are protected by shrubs.	No documented weeds.	6110109; 6110117	No streams.
	4240000	5.32	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.
	4245000	4.42	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams. Goes up butte.
	4250000	3.68	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.
	4251000	4.80	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.
	4256000	1.14	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams. Goes up butte.
	4258000	2.10	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110111	No streams.
	4260000	0.19	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Goes across the top of the dam; most not in watershed.
	4300000	6.39	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed.	6110111	Crosses Deschutes River; paved. Pringle Falls private land -- high risk for weeds.
	4330000	1.46	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.
	4350000	2.10	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110111	Cross 1 intermittent.
	4358000	5.12	3	0	4	M	Senecio wetland; willow/sedge.	No TES plants known within 200 ft. of road.	No weeds currently.		Follows east side Fall River. One intermittent trib; 2 wetland hits in botany glob; wetlands must be assoc. with Fall River Floodplain.
	4360000	6.40	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110117	Appears to cross Fall River; native surface.
	4370000	6.30	3	0	7	1H	Lodgepole wetland; sedge moist meadow; willow/sedge.	No TES plants known within 200 ft. of road.	Spotted knapweed.	6110111; 6110172	Native surface, parallels west side Deschutes River below Wickiup. Mostly up high, occasionally dips down, so 0 on floodplain.
	4380000	3.34	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed by Wickiup Dam.	6110111	One intermittent stream; straight road.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes	
DES-LAPINE STATE REC	4400000	6.93	3	0	7	1H	Willow/sedge.	No TES plants known within 200 ft. of road.	Spotted knapweed by Pringle Butte.	6110177	East side of Deschutes River; native surface.	
	4410000	3.51	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Circles Pringle Butte.	
	4420000	1.66	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.	
	4500000	11.55	0	3	4	M	No special habitats mapped within 200 ft. of road.	CACH. Plants are protected by shrubs.	No documented weeds.	6110104; 6110109	Links Rd. 40 and 46. Follows Dutchman Creek (intermittent).	
	4525000	5.15	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.	
	4526000	2.81	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.	
	4600000	4.46	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	No streams.	
	4613000	3.43	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.	
	4614000	2.58	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		No streams.	
	LAP-1ST ST	0.30	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Weed status unknown.		Paved.	
	LAP-5TH ST	0.05	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Weed status unknown.			
	LAP-PARK D	0.68	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Weed status unknown.			
	Fall Total		174.28									
	Hampton	US-20	15.48	0	0	7	1H			Weed risk.		
Hampton Total		15.48										
Headwaters	4000000	6.22	3	0	7	1H	Spruce/sedge; lodgepole wetland	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110109	Paved; crosses Snow Creek and Upper Deschutes River; flat, so in low area for flow effects; Probably 2 wetlands and essentially being blocked.	
	4000970	1.76	3	0	4	M	Lodgepole wetland.	No TES plants known within 200 ft. of road.	Spotted knapweed	6110109	Road to cow camp. 3 on wetlands because skirts doesn't cross.	
	4070000	4.70	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110109	No streams.	
	4200000	0.12	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed; Ccanada thistle; Bull thistle; Scotch thistle; St. Johnswort	6120005	No streams.	
	4240000	0.08	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed	6110109	No streams.	
	4245000	0.48	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.	
	4250000	2.72	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.	
	4255000	1.86	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.	
	4256000	1.16	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.	
	4270000	9.78	3	0	4	M	Spruce/bog blueberry/sedge; Senecio wetland; sedge meadow.	No TES plants known within 200 ft. of road.	No documented weeds.	6110104	Skirts around side Crane Prairie Reservoir. Also crosses Snow Creek and Upper Deschutes River (2nd gravelled section).	
	4270478	2.50	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground rd?	
	4270990	0.46	3	0	4	M	Spruce/bog blueberry/sedge	No TES plants known within 200 ft. of road.	No documented weeds.		Campground rd? Has wetland.	
	4273000	2.57	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.	
	4278000	0.10	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.	
	4285000	2.05	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed; Canada thistle; Bull thistle; Scotch broom; St.Johnswort; LINVUL; scotch thistle.	6120005	Crosses 1 intermittent trib; parallels south shore Crane Prairie.	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	4286000	1.42	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed; Canada thistle; Bull thistle; Scotch broom; St.Johnswort; LINVUL; scotch thistle.	6120005	No streams.
	4290000	5.91	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed; Canada thistle; Bull thistle; Scotch broom; St.Johnswort; LINVUL; scotch thistle.	6120005	Charlton Lake Rd. Crosses 2 intermittent streams.
	4291000	5.80	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed; Canada thistle; Bull thistle; Scotch broom; St.Johnswort; LINVUL; scotch thistle.	6120005	Once around the butte. Crosses the same intermittent stream 2 times.
	4292000	0.31	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4293000	2.58	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		2 segments; crosses one intermittent stream.
	4296000	1.43	3	0	4	M	Sedge moist meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		Wetland; comes close to Charlton Creek;
	4525000	5.65	3	0	4	M	Spruce/bog blueberry/sedge	No TES plants known within 200 ft. of road.	No documented weeds.		Wetland; 2 segments. No streams.
	4528000	4.50	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams; switchbacks up side butte, so prob. Some fine sediment.
	4529000	2.80	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4600000	31.80	7	0	8	2H	Alpine sedge; spruce/sedge; lodgepole wetland; Engelmann spruce bottomland; tufted hairgrass/sedge; sedge subalpine meadow; sedge meadow; willow sedge; Mt. Alder, bog blueberry.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed; Canada thistle; Bull thistle; Scotch broom; St.Johnswort; LINVUL; scotch thistle; LINDAL.	6120005	From Mt. Bachelor to south of Crane Prairie. Paved.
	4600319	0.30	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	For 46 spurs -- campground or trailhead roads.
	4600400	1.65	3	0	7	1H	Willow/sedge.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	Wetland
	4600420	0.20	3	0	7	1H	Tufted hairgrass/sedge; willow/sedge.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	Wetland
	4600430	0.35	3	0	7	1H	Willow/sedge.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	Wetland
	4600450	0.80	3	0	7	1H	Senecio wetland; tufted hairgrass/sedge	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	Wetland
	4600472	0.23	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	
	4600480	0.10	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	
	4600482	0.20	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	
	4600500	1.03	3	0	7	1H	Engelmann spruce bottomland.	No TES plants known within 200 ft. of road.	Spotted knapweed; Dalmation toadflax.	6110104	Wetland
	4600520	0.59	3	0	4	M	Engelmann spruce bottomland; sedge meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		Wetland
	4600530	0.34	3	0	4	M	Sedge moist meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		Wetland
	4600655	0.85	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed; Canada thistle; Bull thistle; Scotch broom; St.Johnswort; LINVUL; scotch thistle.	6120005	
	4600659	0.40	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed; Canada thistle; Bull thistle; Scotch broom; St.Johnswort; LINVUL; scotch thistle.	6120005	
	4625000	3.85	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110104	Hosmer Lake Loop; paved and gravel (2 segments); 1 intermittent stream crossing; 1 fine sediment for portion that gravelled that goes around Elk Lake and crosses Intermittent trib.
	4625100	0.30	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110104	Elk Lake Resort Rd.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	4625300	0.15	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Rd. down to beach at Elk Lake.
	4625500	0.90	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Goes to Elk Lake.
	4625605	0.40	3	0	4	M	Sedge meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground Rds. In Hosmer.
	4625607	0.20	3	0	4	M	Sedge meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground Rds. in Hosmer
	4628000	2.70	3	0	4	M	Spruce/vaccinium sedge.	No TES plants known within 200 ft. of road.	No documented weeds.	6110104	Wetland - check in ArcView.
	4630000	7.40	3	0	4	M	Spruce/bog blueberry/sedge; Engelmann spruce bottomlands; wet meadow; alder.	No TES plants known within 200 ft. of road.	No documented weeds on BFR.	6120005	Crushed gravel. Crosses Cultus River, Cultus Creek, Deer Creek (?), and one intermittent trib. Four wetland areas. Goes towards Lemish Lake. Hot spot for floodplain function is Cultus River. Adjacent to 2 wetlands and prob. Crosses other 2 wetlands.
	4631000	1.93	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Crosses intermittent section of Cultus River. 2nd segment does not cross the River.
	4632000	5.30	3	0	4	M	Engelmann spruce bottomlands.	No TES plants known within 200 ft. of road.	No documented weeds.	6110104	Crosses intermittent section of Culture River. Wetland adjacent.
	4635000	2.42	3	0	4	M	Alder.	No TES plants known within 200 ft. of road.	No documented weeds on BFR.	6120005	Road into Cultus Lake. Gravelled.
	4635110	0.40	3	0	4	M	Alder.	No TES plants known within 200 ft. of road.	No documented weeds.		Road to Cultus Lake Resort.
	4635120	0.83	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground road. 4 segments.
4636000	7.10	3	2	4	M	Engelmann spruce bottomland; sedge moist meadow.	SCHPAU. Not near road.	No documented weeds.		Road past Taylor and Irish Lakes?? Can't find on Dan's map.	
Headwaters Total		139.68									From Little Cultus to Irish Taylor Lakes. Crosses wetlands.
Irrigation Canals	NOLD MAR	0.09	0	1	8	1H	No special habitats mapped within 200 ft. of road.	Unknown.	Very high weed potential.		
	DES-BILLADEA	0.28	0	1	8	1H	No special habitats mapped within 200 ft. of road.	Unknown.	Very high weed potential.		
	DES-GOSNEY	3.38	0	1	8	1H	No special habitats mapped within 200 ft. of road.	Unknown.	Very high weed potential.		
	DES-RICKARD	1.06	0	1	8	1H	No special habitats mapped within 200 ft. of road.	Unknown.	Very high weed potential.		
	US-20	2.73	0	1	8	1H	No special habitats mapped within 200 ft. of road.	Unknown.	Very high weed potential.		
Irrigation Canals Total		7.54									
Lake Billy Chinook	1100000	1.44	2	5	6	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Intermittent tribs don't go anywhere.
	1126000	2.77	2	3	6	M	Wet meadow	No TES plants known within 200 ft. of road.			Wetland.
	1129000	5.78					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			2 segments; 1 intermittent stream crossing.
	2050000	5.80	3	3	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			2 segments.
	2055000	5.77	7	7	8	3H	Scablands. Weed risk and off-road use.	PEPE in area. Weed risk.	Goes to Fly Lake. High weed risk.		Crosses 3 intermittent tribs that don't connect to anything.
Lake Billy Chinook Total		21.55									
Little Deschutes	2100000	1.51	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds in this segment.	6110006	Rd. to Paulina Lake. Paved. Only part of it in Little Deschutes watershed, that's why all zeros.
	2100400	0.08	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110006	Campground road?
	2100500	0.67	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground road?
	2121000	2.28	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	2200000	0.61	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		.5 mi. paved road by LaPine
	2205000	2.87	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	2215000	4.69	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle.	6110065	No streams.
	4300000	8.53	0	0	7	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed likely but not documented.	6110001; 6110111	Wickiup Junction/Pringle Falls Rd. Crosses Little Deschutes River closer to 97. Floodplain can't function normally because of road; hot spot is Little Deschutes, but 1/4 mi. stretch on 8 mile long road. Wetlands on private land.
	4320000	10.84	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110111	Lots segments. All zeros. Lots segments bec. In and out private land. One tiny intermittent.
	4330000	2.24	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110111	One intermittent.
	4410000	2.22	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Once around the butte.
	4420000	0.88	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4678000	0.18	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Same road notes, different watershed.
	4680000	1.50	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle.	6120038	Already looked at in Crescent watershed; same notes as above.
	4685000	1.20	0	0			No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			No stream crossing.
	6200000	5.21	0	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweeds; bull thistle.	6120006; 6120038	Paved; 2 small intermittent streams don't go anywhere.
	6220000	3.51	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Crosses 4 intermittents.
	6224000	3.46	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		One intermittent.
	6230000	3.10	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle.	6120038	One intermittent.
	6245000	1.41	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No intermittent streams.
	9736000	4.64	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams. Follows slope contour.
	9745000	2.67	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110001	No streams.
	9750000	3.33	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	9775000	1.27	0	0			No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	9785000	2.75	0	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweeds.	6120006	
DES-LAPINE STATE REC	0.94	0	0	4	M		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Weed status unknown.		
LAP-5TH ST	0.25	0	0	4	M		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Weed status unknown.		
LAP-PARK D	0.42	0	0	4	M		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Weed status unknown.		
US-97	5.95	0	0	9	1H		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweeds.	6110001; 6120006	
Little Deschutes Total		79.20									
Long Prairie	2100500	1.76	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2121000	5.85	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2125000	3.43	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2200000	16.79	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2205000	0.44	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2210000	12.80	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2215000	1.56	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	2220000	12.81	0	3	4	M	No special habitats mapped within 200 ft. of road.	BOPU	No documented weeds.	6110011	
	2222000	5.67	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2225000	14.35	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2227000	1.82	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2235000	1.13	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2400000	2.25	0	5	4	M	No special habitats mapped within 200 ft. of road.	BOPU	No documented weeds.	6110011	
	2415000	2.50	1	0	4	M	Aspen stand (probably not impacted by road but stand is uncommon for Crescen). Aspen is on lava ridge with <i>Holodiscus dumosus</i> and <i>Prunus virginiana</i> (so moisture in the rock). Road is above lava; not much impact.	No TES plants known within 200 ft. of road.	Spotted knapweed. On Crescent, no spotted knapweed, but potential there because connects to Rd. 31.	6110011	
	2420000	3.91		0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2422000	1.67		0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	2430000	10.86	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	3100000	13.35	0	3	7	1H	No Special habitats within 200 ft. of road. Showcase ponderosa stand (near end of rim) on BFR and CRE (especially Crescent) near intersection of 31/3115 (along 31).	BOPU on BFR side.	Spotted knapweed. Biggest problems are weeds on private lands. Both BFR and Crescent treating weeds where find them. Population reduced but still problem. Needs to be pulled every year. High risk because high traffic, existing high risk species, and private land that isn't being treated.	6110011	Divider road between BFR and Crescent. Road between Summer Lake and LaPine. Same as Hwy 97.
	3115000	2.84	0	4	4	M	No special habitats mapped within 200 ft. of road.	BOPU; road vector for weeds. BOPU plot close to road (within 1/4 mi.). Small closed road leads to BOPU plot; reduced risk because of road closure.	Spotted knapweed. Contractor found and pulled knapweed on Crescent District along this road. Potential is there for weeds because of knapweed on Rd. 31.	6110011	Becomes 3117 on BFR. Knapweed on BFR section in a fire area. Road used quite a bit, especially by hunters, but less use than 9775.
	3117000	5.80	0	3	4	M	No special habitats mapped within 200 ft. of road.	BOPU	No documented weeds.	6110011	
	3118000	3.37	0	3	4	M	No special habitats mapped within 200 ft. of road.	BOPU	No documented weeds.		
	9736000	2.35	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	9750000	0.90	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	9775000	4.66	0	3	4	M	No special habitats mapped within 200 ft. of road.	Historic BOPU site might have been along this road.	Ask Charmane for BFR opinion on this. Give same ratings for now as 9775 in Sellers watershed.		
	9780000	2.07	0	3	4	M	No special habitats mapped within 200 ft. of road.	BOPU?	Due to private lands and off 9775, there is a weed risk.		Little piece of road on Crescent. Goes to private land (which is not Crown Pacific).
	9785000	0.65					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	US-97	6.52	5	?	7	1H	Wet meadow just south of LaPine.	TES plant status unknown.	Diffuse & spotted knapweeds	6110001; 6120006	
Long Prairie Total		142.08									
Lower Dry River	1800000	9.99	0	0	4		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1800200	1.60	0	0	4		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1814000	3.28	0	0	4		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1815000	1.80	0	0	7		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweeds	6110034; 6110087	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	1815800	0.24	0	0	4		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1818000	2.76	0	0	4		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1819000	2.96	0	0	4		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1820000	10.88	0	0	4		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1825000	9.49	0	3	4		No special habitats mapped within 200 ft. of road.	CACH. Plants are protected by shrubs.			
	2015000	1.80	0	3	4		No special habitats mapped within 200 ft. of road.	CACH. Plants are protected by shrubs.			
	9710000	2.73	0	0	4		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
DES-ARNOLD MAR	0.97	0	0	7	1H	Special habitat status unknown.	TES plant status unknown.	Weed status unknown; high potential.			
DES-GOSNEY	0.72	0	0	7	1H	Special habitat status unknown.	TES plant status unknown.	Weed status unknown; high potential.			
DES-RICKARD	1.52	0	0	7	1H	Special habitat status unknown.	TES plant status unknown.	Weed status unknown; high potential.			
US-20	3.72	0	0	7	1H	Special habitat status unknown.	TES plant status unknown.	Weed status unknown; high potential.			
Lower Dry River Total		54.45									
Lower Metolius	1100000	12.17	4	4	6	M	Riparian, intermittent channels, meadows. Risk is probably hydrologic and weeds.	Unknown. High potential.	Connects to populations. High potential. High use.		Parallels Fly Creek, crosses Meadow Creek, Six Creek, and Prairie Farm Creek. Crosses 5 other intermittent tribs to Fly Creek. It's right at creek bottom, so water that would normally push into the creek - doesn't affect timing and quantity of water (flow effects).
	1129000	1.02	3	6	7	1H	Unknown.	Potential for PEPE. Weed risk is high.	High weed risk in this area.		Crosses Fly Creek once.
	1130000	1.49	2	2	4	M	Unknown.	Potential for PEPE. Weed risk is high.	High weed risk in this area.		Top of Green Ridge, no streams.
	1140000	10.59	4	4	5	M	Creeks, riparian. Risk is hydrologic interference and weeds.	Unknown. Potential for AGEL. Weed risk.	Connects to known populations on Rd. 11. Not surveyed.		Top Green Ridge, 4 segments, crosses Meadow Creek and headwaters of 3 intermittent tribs.
	1149000	7.70	2	3	5	M	Unknown.	Potential for AGEL. Weed risk.	Connects to known populations on Rd. 11. Not surveyed.		Top Green Ridge, crosses 2 intermittent tribs.
	1150000	14.05	3	5	5	M	Intermittent streams, riparian drainages.	Potential PEPE and AGEL. Weed risk.	Not surveyed. Connects to weed sites.		Midslope on Eastside Green Ridge, crosses numerous intermittent tribs to Metolius and Fly Creek. More of risk relative to geology? Gravel most, part native surface.
	1152000	1.50					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			No streams.
	1158000	2.70	3	3	4	M	Crosses north fork Street Creek. Riparian. Intermittent channels.	Potential for PEPE and AGEL. Weed risk.	Not surveyed. Connects to weedy areas.		Midslope, eastside Green Ridge, crosses 5 intermittent tributaries, actually on fairly flat part of slope where comes across.
	1160000	4.20	2	3	5	M	Unknown.	Potential for AGEL. Weed risk.	Connects to weedy areas. Not surveyed. High recreation use.		Crosses 1 intermittent stream.
	1170000	4.90	2	3	7	1H	Unknown.	Potential for PEPE and AGEL. Weed risk.	Diffuse knapweed; Connects to Rd. 64 (weeds). High use.	6150022	Crosses 1 intermittent stream.
	1180000	3.50	2	3	7	1H	Unknown.	PEPE; Weed risk.	Connects to Rd. 64 (weeds). High use.		PEPE; No streams.
	1190000	13.30	4	5	7	1H	Intermittent streams, riparian. Risks are hydrologic interference and weeds.	Potential habitat for PEPE and AGEL. Weed risk.	Not surveyed. Connects to weed areas.		Midslope, eastside Green Ridge, crosses 8 intermittent streams.
	1193000	3.60	4	5	7	1H	Intermittent streams, riparian. Risks are hydrologic interference and weeds.	Potential habitat for PEPE and AGEL. Weed risk.	Not surveyed. Connects to weed areas.		Crosses N. Fork of Spring Creek (intermittent).
1490000	2.26	3	4	4	M	Hydrologic interference.	PEPE potential. Weed risk.	High use.		PEPE; 1st section is the worst - switchback -- crosses 4 tribs 2X each.	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	1499000	8.09	6	5	7	1H	Weed risk.	Cypridium montanum in area?. Unknown TES. Weed risk, erosion. Potential habitat for PEPE and AGEL.	Diffuse and spotted knapweed, scotch broom. Weeds difficult to treat because inaccessible; lack of monitoring; erosion probably creating new sites.		Rating entire road in this watershed even though road is closed -- check, though. Native surface; 31 intermittent streams on map. Located in confined valley (v-shaped as opposed to broad); road not adjacent to river, up above river. In significant watershed for at risk fish species (Bull Trout).
	2055000	1.34					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Goes past Fly Lake; flat, crosses 1 intermittent trib and Fly Creek.
	6400000	20.50	5	4	9	1H	Wet meadow; weed risk and off-road use.	Potential habitat; not surveyed.	Diffuse knapweed; goes to Fly Lake. Bad weed populations. Not completely surveyed; recently found huge populations. High rec use, high traffic.	6150022; 6150055	Wet meadow; Follows Metolius, crosses Spring and Street Creeks; 18 intermittent tribs. Paved in portions; pretty well used, well maintained road. Pretty good surface and prob. Not much surface erosion. Because crosses so many streams - bumps up floodplain function; follows contour and pretty well down on slope. Has potential to be at risk and should get money to maintain it, but prob. not high risk road right now. Wetland associated with creek.
	6400600	0.59					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Campground road?
	6400620	0.20					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Campground road?
	6400700	0.20					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Campground road?
Lower Metolius Total		113.90									
Newberry	2100000	18.27	5	3	7	1H	Moist meadow; sedge meadow.	BOPU	Spotted knapweed at info kiosk near jct. with 97 (BLM jurisdiction)	6110005	Crosses Paulina Creek, goes to Newberry Crater; Paved except for about mile at very end.
	2100050	0.74	8	0	7	2H	Adjacent to Paulina Creek. Weed & recreation issues.	No TES plants known within 200 ft. of road.	Spotted knapweed, bull thistle	6110005; 6110088	Campground, boat ramp, or trailhead road.
	2100060	0.34	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Campground, boat ramp, or trailhead road.
	2100200	0.20	can't find	0	?		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Campground, boat ramp, or trailhead road.
	2100400	0.16	can't find	0	?		No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed.	6110006	Campground, boat ramp, or trailhead road.
	2100500	1.59	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Road to Paulina Peak; Gravelled or native surface; pretty steep; big cut banks;
	2100505	0.18	5	0	4	M	Sedge meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		Sedge meadow.
	2100530	0.81	5	0	4	M	Sedge meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		Sedge meadow.
	2100565	0.31	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground, boat ramp, or trailhead road.
	2100570	1.08	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground, boat ramp, or trailhead road.
	2100580	0.13	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground, boat ramp, or trailhead road.
	2100660	0.51	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground, boat ramp, or trailhead road.
	2100680	0.42	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground, boat ramp, or trailhead road.
	2100690	0.04	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground, boat ramp, or trailhead road.
	2100700	1.92	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground, boat ramp, or trailhead road.
	2100710	0.10	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campground, boat ramp, or trailhead road.
	2120000	2.63	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams. South side Paulina Creek.
	2121000	0.39	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
DES-LAPINE STATE REC	4200000	3.22	3	0	7	1H	Moist meadow.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweed.	6110001	Moist meadow. Crosses Little Deschutes. Restricts floodplain some. Paved.
	9720000	1.09	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	9724000	4.48	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110001	No streams.
	9725000	8.62	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110001	No streams.
	9730000	7.11	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	9735000	10.92	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110001	No streams.
	9736000	6.72	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Crosses Paulina Creek.
	9745000	1.60	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	9750000	0.16	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	US-97 (blank)	7.07 0.09	3	1	4	M	Crosses Little Deschutes.	TES plant status unknown.	Weed status unknown.		No streams.
Newberry Total		83.60									
Pilot Butte	1800000	6.96	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Dalmatian toadflax & sp. Knapweed	6110022	China Hat Rd.
	1801000	2.14	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	1810000	10.57	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	1814000	2.96	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	1815000	1.76	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110087	No streams.
	1815800	0.23	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	1816000	3.17	5	0	4	M	Wet meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams, but goes to wet meadow.
	1818000	1.34	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4000000	3.35	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweed, bull thistle	6110001; 6110135	Crosses Deschutes; paved
	4001000	4.03	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Connects into Cottonwood Rd. Maybe powerline road.
	4100000	10.10	3	0	7	1H	Spruce bottomland.	No TES plants known within 200 ft. of road.	Spotted knapweed	6110104; 6110183; 6110194; 6110195; 6110196	Crosses 9 intermittent tribs; no wetland mapped on hydrology map; couple springs mapped and spruce bottomland is prob. Assoc. with one of those springs.
	4100200	3.27	3	0	7	1H	Sedge moist meadow.	No TES plants known within 200 ft. of road.	Spotted knapweed, bull thistle	6110105	Heads towards Besson Day Use Area. Native surface.
	4100220	0.50	3	0	4	M	Willow/sedge.	No TES plants known within 200 ft. of road.	No documented weeds		From 4100200 down to Besson Day Use Area.
	4100400	2.30	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Crosses intermittent trib.
	4110000	3.35	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		One intermittent trib.
	4120150	0.20	can't find	0	can't find rd.		Sedge meadow.	No TES plants known within 200 ft. of road.	Spotted knapweed, dalmation toadflax	6110124	Off 4120, must be in a different watershed?
	4120200	0.50	3	0	7	1H	Willow/sedge.	No TES plants known within 200 ft. of road.	Spotted knapweed, bull thistle	6110125	
	4120700	0.20	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds		
	4130000	4.80	3	0	7	1H	Engelmann spruce bottomland.	No TES plants known within 200 ft. of road.	Canada thistle, Scotch broom	6110104; 6110126; 6110167	Appears to cross 6 intermittent tribs; runs adjacent to 4 springs.
	4133000	3.47	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	4140000	2.24	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4180000	3.23	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110183	No streams.
	4600000	16.73	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, dalmation toadflax	6110013, 6110104, 6110174	Crosses 4 intermittent tribs.
	4600100	0.82	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, Canada and bull thistle, Dalmation toadflax	6110104, 6110113, 6110174	
	4600160	0.20	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, dalmation toadflax	6110104	
	4600210	0.40	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, dalmation toadflax	6110104	
	4600225	0.30	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, dalmation toadflax	6110104	
	4601000	4.22	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweeds, dalmation toadflax	6110102	Tumalo Road (Skyliner). In this watershed, is 1st part going out of Bend.
	4606000	1.36	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweeds, dalmation toadflax	6110102	Off of 4106 Rd. Appears to make a triangle.
	4610000	3.51	0	3	4	M	No special habitats mapped within 200 ft. of road.	CACH site is protected by shrubs.	No documented weeds.		Tie road between 46 and Skyliner Road. Highly erosive road, but fine sed not really going anywhere.
	4612000	3.20	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds	6110104	Occasionally cross intermittent tribs.
	4613000	3.87	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds	6110104	Occasionally cross intermittent tribs.
	4614000	3.58	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110104	Occasionally cross intermittent tribs.
	4615000	8.94	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110104	Occasionally cross intermittent tribs.
	9700100	0.20	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Goes up Lava Butte.
	9701000	5.51	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110090	
	9702000	3.87	3	0	7	1H	Willow/sedge.	No TES plants known within 200 ft. of road.	Knapweed & bull thistle.	6110131	To Benham Falls. Paved. Down by Deschutes River, willow sedge.
	9702100	1.67	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campgrounds?
	9702101	0.10	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	9710000	13.08	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Sp. Knapweed at beginning only (at west end)	6110090	
	9711000	5.15	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	9714000	2.80	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	9720000	9.65	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110001	
	9720950	0.00	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Might be road to Lava Cast Forest??
	9721000	3.21	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	9723000	3.55	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	9725000	0.32	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	9735000	2.14	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
BEN-14TH S		1.00	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	City of Bend.		
DES-27TH STR		5.20	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Big-time knapweed. Not USFS.		
DES-ARNOLD MAR		2.34	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Big-time knapweed. Not USFS.		
DES-BILADEA		0.72	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Big-time knapweed. Not USFS.		

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
DES-COTTONWOOD		2.43	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	knapweed.		
		4.30	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	knapweed.		
		0.72	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	knapweed.		
	US-20	3.29	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	knapweed		
	US-97	11.48	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse and spotted knapweed, Scotch thistle (?)	6110001	
	(blank)	0.43									
Pilot Butte Total		200.94									
Pine	1800000	6.63	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2200000	7.53	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Major road. Haul route.		
	2222000	1.74	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2227000	3.62	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2230000	3.94	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently. More of a major thoroughfare.		
	2233000	4.38	1	0	3	L	Sugar pine - Not defined as special habitat but unique for this area.	No TES plants known within 200 ft. of road.	Bull thistle	6110020	Up and over Sugar Pine Ridge.
	2235000	3.85	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2240000	5.63	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2248000	0.71	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2259000	0.60	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2350000	3.62	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2400000	12.98	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2420000	0.66	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2422000	3.22	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	2424000	6.44	0	5	2	M	No special habitats mapped within 200 ft. of road.	BOPU; lots along road. Potential for off-roading into habitat and population.	Spotted knapweed		
	2428000	5.10	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	2430000	5.13	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	2435000	9.43	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Out by flat top.
	2438000	4.35	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	2440000	3.40	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	2451000	6.52	0	5	2	M	No special habitats mapped within 200 ft. of road.	BOPU; Potential for off-roading.	Spotted knapweed; sporadic in Rd. 31 corridor and GIS map does not reflect true population size. Dave L. keeping knapweed out and not much, if any knapweed there.	6110011	South of road 31.
	2524000	0.14	0	5	2	M	No special habitats mapped within 200 ft. of road.	BOPU	Spotted knapweed; sporadic in Rd. 31 corridor and GIS map does not reflect true population size. Dave L. keeping knapweed out and not much, if any knapweed there.	6110011	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	3100000	4.30	0	5	3	M	No special habitats mapped within 200 ft. of road.	BOPU	Spotted knapweed; sporadic in Rd. 31 corridor and GIS map does not reflect true population size. Dave L. keeping knapweed out and not much, if any knapweed there. Main Rd. so 3 instead of 2.	6110011	
	3125000	5.13	0	5	2	M	No special habitats mapped within 200 ft. of road.	BOPU	Spotted knapweed; sporadic in Rd. 31 corridor and GIS map does not reflect true population size. Dave L. keeping knapweed out and not much, if any knapweed there.		
	3130000	0.83	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	3145000	5.39	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Goes past E. side Hole in the Ground.
Pine Total		115.26									
Sellers	3115000	0.46	2	2	4	M	Small wetland in lodgepole forest (on this road?); holds water year round.	Low possibility of TES plants; weed/road concerns.	Possibility for weeds because highly travelled and main haul road for Crown Pacific. Could be major weed distribution road. Moderate because no known weed sites but private land, high traffic, and knapweed habitat.		Sellers essentially a closed basin, but numerous intermittent streams come off Walker Ridge and can hold water into June; north facing slopes. Just dealing with northern Deschutes part. Rest Winema. Road changes to 9775 in Sellers Watershed; 3115 ends at private.
	9407000	3.15	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Probably not much of a weed problem because of distance from 9775 and other vectors. But heavy fall use due to mushrooming and where they are coming from to get to this area.		Landform: this road follows from flat land, starts to follow up above Walker Rim. Lot of this road on the Winema. Big-time mushroom road. Up on top mostly lodgepole. Follows intermittent drainage.
	9410000	2.20	1	0	2	L	Road in drainage, could be riparian veg.	No TES plants known within 200 ft. of road.	Low risk. Coming off 9775 and mushroomers.		Goes behind a few buttes; pretty flat; probably not much risk of anything. Mushroomers use road but not many other people (fall use).
	9450000	0.20					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	9772000	2.98	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants within 200 ft. of road. In this watershed not a problem.	High use and haul road, comes from Hwy 97 and Crescent. Plus private land concerns.		High use -- probably mostly by Crown Pacific; goes through private and public land. Hunting use.
	9775000	5.43	2	2	4	M	Small wetland in lodgepole forest; holds water year round (here or on 3115).	Low possibility of TES plants. Weed/road concerns.	Possibility for weeds because highly travelled and main haul road for Crown Pacific. Could be major weed distribution road. Moderate because no known weed sites but private land, high traffic, and knapweed habitat.		
	9780000	1.93	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Right off 9775.		Borders private land and area has lot of historic ground disturbance on both private and federal lands.
Sellers Total		16.35									
Soldier Cap	US-20	3.70						No TES plants known within 200 ft. of road.			
Soldier Cap Total		3.70									
Steelhead	2610000	0.12	0				No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	4605000	2.62	0				No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Crosses 2 intermittent tribs.
	4606000	1.44	0				No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Crosses 2 intermittent tribs.
	OR-126	14.51	0				No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	US-20	5.24	0		7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	US-97	14.03	0		8	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
Steelhead Total		37.96									
Swamp Creek	US-20	1.01			7	1H		No TES plants known within 200 ft. of road.			

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
Swamp Creek Total		1.01									
Three Creeks	1600000	8.49	5	6	5	M	Senecio wetland; sedge subalpine wet meadow; willow/sedge. High use area, mudbogging occurs.	GENE; Important populations. Recreation risk and off road use. Weed risk.	Connected to knapweed sites on lower portion. Reduced winter use may lower risk compared to other areas.		Paved about 3/4 way; rest 4 mi. is washboard. Three Creeks stream doesn't go anywhere. Crosses 3 Creek and adjacent assoc. wet meadows. Recreation probably biggest factor affecting wetlands, but road provides access and crosses. Road flat as opposed to heading down into lake.
	1600550	1.22					Engelmann spruce bottomland.	No TES plants known within 200 ft. of road.			Campgrounds and what not roads.
	1600800	0.40					Senecio wetland; tufted hairgrass/sedge; sedge subalpine wet meadow; willow/sedge.	GENE			Campgrounds and what not roads.
	1600820	0.12					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Campgrounds and what not roads.
	1600900	0.60					Sedge subalpine wet meadow.	GENE			Campgrounds and what not roads.
	1608000	1.73					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1610000	6.99					Swale. (Habitat for PEPE?).	Peck's penstemon.	Knapweeds.		Crosses 3 Ck. And Melvin Creek. From Rd. 16.
	1612000	2.85					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Crosses a ditch.
	1620000	5.49					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1622000	0.60					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Crosses Melvin Creek.
	1624000	1.40					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Can't find it.
	1628000	4.36					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Switchbacks, prob. On steeper ground. No tribs across it.
	4602000	4.00	0	0	4	M	No special habitats mapped within 200 ft. of road.	No surveys. Potential habitat exists in area for GENE, but not sure along this road.	None known.		Crosses Bull Ck.
	4605000	5.48	0	0	4	M	No special habitats mapped within 200 ft. of road.	1 mile has been surveyed.	None known.		Crosses Bull Ck.
4606000	14.76	0	3	8	1H	Weed risk.	No surveys; probably not high potential habitat.	Knapweed, toadflax, and leafy spurge. Leafy spurge in area traded away to Crown Pacific, near Bull Spring Creek.	6110101; 6110149	Crosses Bull Spring Creek. Old haul route from Sisters to Bend. Used to go to Suttle Lake. Crosses 5 intermittent tribs and 3 ditches.	
4607000	1.80	0	0	8	1H	No special habitats mapped within 200 ft. of road.	No surveys; probably not high potential habitat.	Dalmation toadflax and leafy spurge at jct. With 4606.	6110101	Crosses one intermittent stream.	
OR-126	1.62					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.				
US-20	5.41					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.				
Three Creeks Total		67.33									
Tumalo	4601000	14.48	3	0	7	1H	Senecio wetland; Mt. Alder/spirea.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweed and Dalmation toadflax	6110102	Skyliner Rd., crosses Tumalo Creek and goes up to ridge. 3 segments. Restricted at bridge.
	4602000	0.60	3	0	4	M	Wet meadow.	No TES plants known within 200 ft. of road.	No documented weeds.		Length of segment greater than 4601, so wetland gets higher in this one.
	4603000	2.60	4	0	7	1H	Engelmann spruce bottomland; aspen/shrub wetland; sedge moist meadow; willow/sedge; Mt. Alder/spirea.	GENE does not occur within 200' of road (is on south side of Tumalo Creek)	Diffuse & spotted knapweed and Dalmation toadflax, bull thistle	6110102	Rd. to Tumalo Falls. Couple of springs on uphill side, so may be some flow effects. Rated 4 wetlands bec. Biseects small wetlands.
	4606000	5.71	3	0	7	1H	Mt. Alder/spirea.	No TES plants known within 200 ft. of road.	Spotted knapweed	6110184, 6110185, 6110186	Crosses Tumalo Creek.
	4610000	0.89	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		One intermittent trib.
Tumalo Total		24.28									
Upper Deschutes	4040000	2.81	0	0	4	M		No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4200000	7.11	3	0	7	1H	Spruce/vaccinium/sedge; lodgepole wetland; willow/sedge.	No TES plants known within 200 ft. of road.	Spotted knapweed, bull thistle, St. Johnswort	6110111, 6110140	Crosses Deschutes River at Brown's Crossing; Fall River Rd.;

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	4255000	1.24	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams. .1 mi. on top butte.
	4256000	0.10	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4260000	9.79	0	0	9	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, St. Johnswort	6110112	Rd. around North and South Twin Lakes, crosses dam at Wickiup Reservoir. Comes close to some arms of Wickiup Reservoir.
	4260040	0.20	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campgrounds.
	4260070	1.80	3	0	4	M	Willow/sedge.	No TES plants known within 200 ft. of road.	No documented weeds.		Campgrounds.
	4260130	0.10	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campgrounds.
	4260200	1.20	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Campgrounds.
	4262000	2.50	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.	6110111	
	4270000	1.52	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	4273000	1.13	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		
	4280000	3.80	3	0	4	M	Lodgepole wetland.	No TES plants known within 200 ft. of road.	Diffuse, spotted, Canada thistle, bull thistle, Scotch broom, St. Johnswort, Scotch thistle, LINVUL	6120005	Crosses Brown's Creek and crosses wetland.
	4285000	2.15	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, bull thistle, St. Johnswort	6110143, 151, 153	Around Brown's Mt. Around Crane Prairie.
	4286000	1.74	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4290000	1.36	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4292000	4.19	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		Crosses 2 intermittent streams.
	4296000	0.17	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No documented weeds.		No streams.
	4370000	0.28	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, St. Johnswort	6110112	
	4380000	0.25	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Spotted knapweed, St. Johnswort	6110112	
	4400000	9.66	3	0	7	1H	Wet meadow.	No TES plants known within 200 ft. of road.	Spotted knapweed.	6110133	Wet meadow. Goes around Wickiup Reservoir on south side. Crosses one wetland.
	4600000	14.12	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Occasional spotted knapweed.	6110128	Paved; Appears to cross 2 arms of Wickiup Reservoir, on downstream side of lava plug for Davis Lake.
	4600850	3.15					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6120005	Campground Rd.
	4600855	2.60					Willow/sedge.	No TES plants known within 200 ft. of road.		6120005	willow/sedge campground rd.
	4650000	5.82					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6120005	Rd. to nowhere.
	4652000	10.61	1	0	3	L	Aspen off of this road (bet. 4652 and 4654). Road not impacting.	No TES plants known within 200 ft. of road.	Bull thistle.	6120001, 6120005	Unclaimed Lavas area.
	4654000	2.49	1	0	3	L	Same aspen potential as above.	No TES plants known within 200 ft. of road.	Comes off 46.		No streams.
	4660000	11.50	9	0	6	1H	Lodgepole wetland; willow/sedge. Wetlands at both Odell and Ranger Creeks, both impacted by road, especially Odell Creek. Need major reconstruction of culverts and bridges.	No TES plants known within 200 ft. of road.	Bull and Canada thistles at least. Lots recreation traffic.	6120030 and 6120051	wetlands; to west, around Davis Lake; crosses Ranger Creek and Odell Creek. Crossing at Odell Ck. Restricts floodplain, so gets 3. Wetland prob. At Ranger Creek.
	4662000	2.10	0	0	8	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Tansy ragwort in harvest units off of this road. Mixed conifer dry.		No streams.
	4664000	5.06					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			No streams.
	4665000	1.80					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	4666000	4.60	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Around steep side of Makiaks Mt., so flow effects = 2.
	4668000	5.30	5	0	2	M	Spruce/sedge; spruce/vaccinium/sedge; Engelmann spruce bottomland. Unnamed spring comes out below steep road.	No TES plants known within 200 ft. of road.	No weeds currently.		wetlands; crosses Makiaks Creek; parallels it.
	4669000	2.29	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Has reed canary grass around Davis Lake.	6120028	W. Davis Campground.
	4670000	2.35					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6120030	Crosses Odell Creek.
	4672000	2.11					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6120030	No streams.
	4676000	1.75					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			No streams.
	5800000	5.58	9	0	8	2H	Spruce/vaccinium/sedge. Many small creeks highly impacted by road. Road restricting floodplain; cinder sedimentation from winter road maintenance.	No TES plants known within 200 ft. of road.	Lots of weeds; high risk. Houndstongue pulled on roadside.	6120002, 6120003, 6120017, 6120027	Wetlands; Cross Odell Creek and 13 tribs to Odell Lake; crosses through a wetland. Sanding and plowing will affect fine sediments. Culvert might be restricting the floodplain.
	5800680	0.71		L			No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6120027	Campground Roads.
	5800700	0.10		L			No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Campground Roads.
	5800800	0.10					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6120002	Campground Roads.
	5810000	2.30	8	0	7	2H	Engelmann spruce bottomland. Bridge impacts creeks, especially Trappe. Floodplain restricted by road.	No TES plants known within 200 ft. of road.	St. Johnswort. Pretty shady.	6120002 (on botany glob, but not according to our weed map); 6120050	Wetlands; Trapper Creek Shelter Cove Resort? Floodplain prob. At Trapper Ck. Wetland where crosses Trapper or West By Ck??
	5810210	0.30					Engelmann spruce bottomland.	No TES plants known within 200 ft. of road.			Wetlands; campground.
	6200000	2.57					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6120005	
	6203000	0.70					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	6220000	2.40	2	0	3	L	Intermittent drainages.	No TES plants known within 200 ft. of road.	Close to known weed sites. 6120017 may not be right on this road.	6120017	Crosses 1 intermittent. Logging road.
	6222000	4.00					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6120017	Crosses 3 intermittent.
	6230000	6.90	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		Circles around Davis Mt.
	6240000	6.10	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Couple bull thistle sites off of it?	6120038	Goes to west side Davis Mt.
	6245000	0.92					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
Upper Deschutes Total		163.40									
Upper Dry River	1800000	8.42	0	0	3	L	No special habitats mapped within 200 ft. of road.		No weeds currently.		
	1800010	1.60		0			No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	1825000	1.70	0	3	2	L	No special habitats mapped within 200 ft. of road.		No weeds currently.		
	1829000	4.02	0	3	2	L	No special habitats mapped within 200 ft. of road.	CACH; not degraded or directly impacted by road.	No weeds currently.		
	1830000	5.10	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	1835000	5.90	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Bull thistle.	6110061	
	1840000	0.47	0	0	2	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	2015000	5.47	0	4	2	L	No special habitats mapped within 200 ft. of road.	CACH?	No weeds on our maps.		In watershed but on BLM and private; only about .5 mi. in next watershed actually on Forest.
	2016000	6.65		4		M	No special habitats mapped within 200 ft. of road.	CACH	No weeds currently.		
	2017000	8.60			4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6110037, 6110038, 6110044, 6110085	
	2017500	0.13			4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6110085	
	2017501	0.10		4	4	M	No special habitats mapped within 200 ft. of road.	CACH		6110085	
	2300000	12.38		4	3	M	No special habitats mapped within 200 ft. of road.	CACH	No weeds currently.		
	2500000	4.75		4	3	M	No special habitats mapped within 200 ft. of road.	CACH	No weeds currently.		
	2510000	2.77		4	3	M	No special habitats mapped within 200 ft. of road.	CACH	No weeds currently.		
	9710000	4.87			4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
	US-20	18.27			7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently.		
Upper Dry River Total		91.18					No special habitats mapped within 200 ft. of road.				
Upper Little Deschutes	5800000	6.42	6	0	6	M	Lodgepole wetland; willow/sedge. Scotch broom above wetlands (weed risk).	No TES plants known within 200 ft. of road.	Continuation of 6120034, which crosses wetland area on Crown. No weeds mapped at Little Deschutes crossing. Dispersed camping along river that could introduce weeds.	6120034	Fine sediment because snow removal activities. Wetland areas partly along Little Deschutes and part on Crown Land on north side 58.
	5814000	0.17					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	5815000	4.20	0	0	4	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds but might be some along 58. High use as a pullout spot.		Rd. to Odell Butte; part of rd. in Crescent watershed.
	5820000	1.45	0	0	3	M	Wet meadow downhill from road but not adjacent to it. Probably highly impacted by harvest activity.	No TES plants known within 200 ft. of road.	No weeds currently. Pilot test area for smothering weeds with dust. Does connect over to Hwy 58.		No streams, flat. Dust is thick. Crown Pacific haul road and tremendous amount of ground disturbance in area.
	5825000	10.58	5 (3)	0	5 (4)	M	Engelmann spruce bottomland; willow/sedge. Spruce Creek on lower southern portion of 5825. Culvert would need to be maintained. Southern portion = 5; northern portion = 3.	No TES plants known within 200 ft. of road.	Weed site at junction of 5825/58 and on 58. Spotted knapweed, St. Johnswort, and Dalmation toadflax. 5825 has moderate traffic. Lot shade on road except for railroad. Monitor railroad for weeds. Southern portion lot more traffic. Weed ratings: Northern = 5; southern = 4.	6120034	Wetlands - not on hydro map. 4 segments; crosses 1 intermittent stream. Rd. to Big Marsh. There are north and south segments in this watershed. Crosses railroad.
	5828000	2.22	0	0	1	L	No Special habitats mapped within 200 ft. of road, but could be some within drainages that aren't mapped?	No TES plants known within 200 ft. of road.	Far from other weed sites.		Crosses trib to Rabbit Ck. Goes to edge of OCRA, SE of Big Marsh. On top side of big ridge along Big Marsh.
	5830000	9.42	5	0	4	M	Lodgepole wetland; willow/sedge; Mt. Alder/spirea, aspen stand about .5 mi. east of Swamp Creek crossing (above road; like a hanging swam). Rd. goes through Two Rivers (private land).	No TES plants known within 200 ft. of road.	Not great weed risk but road comes off 58 and then goes through heavily used residential private lands. ATV recreation.		Wetlands; crosses Spruce, Hemlock & Basin Creeks and Swamp Creek. Not paved, but only gets 2 for fine sediment because flat.
	5834000	2.85	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Parallels railroad. Used during mushroom season because close to mushroom camp by Little Odell Butte. Otherwise, not heavily used road.		5 intermittent streams. Goes from 5825 northern part to southern part of 5825. Parallels railroad.
	5835000	2.74	0	0	5	M	Willow/sedge.	No TES plants known within 200 ft. of road.			Crosses Little Deschutes River. Crosses wetlands. Overall scope of road is minimal.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	5840000	0.82	0	0	1	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Far from any known weed sites.		No streams. Road barely on Forest. Also in Walker Mt. Watershed. Comes off 5835, which comes off 97 (skirts bottom edge Forest). Goes to OCRA and Mt. Thielsen Wilderness Area.
	5852000	0.29	0	0			No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			can't find
	6020000	3.12	7	0	5	1H	Follows Little Odell Creek. Main route to the mushroom camp and crosses the railroad; high weed vector risk.	No TES plants known within 200 ft. of road.	6020 does not have weeds currently mapped. High recreation use. Comes off 58. Probably moderate risk.		Major road, goes to Boy Scout Camp and around Crescent Lake. Southern approach to Crescent Lake. Goes around base of Little Odell Butte.
	6100000	6.27	2	0	6	M	Lodgepole wetland (on private land?). Healthy aspen stand on Crescent Creek on private land. Culverts and bridges (county road) seems to be functioning and not impacting floodplain.		Knapweed on private land is problem. Also have recorded Canada thistle, St. Johnswort, dalmation toadflax. Not sure about Canada thistle. High traffic, private land weed problems, should roadside maintenance. Hooks bet. 97 and 58, which both have plenty of weeds.	6120004, 6120043, 6120046	Pico wetland. Crosses Little Deschutes River-cutoff Rd.
	6125000	6.09	1	0	5	M	Close to riparian at some point.	No TES plants known within 200 ft. of road.	No weeds currently present. However, because of proximity to river and private land residences, this road serves as vector from 58 down to river. High priority for yearly monitoring for weeds.		one intermittent trib; Gulick Ranch Road. Lot goes through Crown Pacific lands and parallels Little Deschutes for quite aways. Some private land holdings along Little Deschutes. Dust problem.
	6200000	0.68	3	0	5	M	Willow/sedge. Little Deschutes River. Fairly broad floodplain. Cement bridge that constricts river flow.	No TES plants known within 200 ft. of road.	Weeds at junction w/ 97, about .75 mile from river. Plus Crown land. Recreational use along river.	6120012	Crosses Little Deschutes River; same as Rd. 61. Tiny portion that is on Crown land.
	9758000	1.08	0	0	4	M	Crosses some riparian that are intermittent drainages.	No TES plants known within 200 ft. of road.	Road not used very much. Connects to railroad.		One intermittent stream.
	9765000	3.72	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently present, but very close to 97 in some spots.		No streams. Road mostly on Crown land and it connects 9768 and 9775, parallels Hwy 97 on east side. Heavy use by Crown for portion of it at least. High dust.
	9768000	0.58	0	0	6	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Pretty high weed risk. Adjacent to 97.		No streams.
	9770000	4.20		0	3	L	Willow/sedge; wetlands where 9770 meets Little Deschutes River?	No TES plants known within 200 ft. of road. Old ASPE site?	High road density on Crown Pacific lands. No weeds currently mapped. Not very high traffic.		Willow/sedge. No streams until get to wetlands = 1. Lot little intermittent channels that it crosses. Most of road on private land.
	9772000	0.05	0	0			No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	In Walker Mt. Also - give same rating.		No streams.
	9775000	2.03		0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Close to 97, so high rating for weeds. Main haul road.	6120006	No streams.
	US-97	5.58	0	0	9	1H	Willow/sedge. (Mill pond in Crescent?)	No TES plants known within 200 ft. of road.	Knapweeds and dalmation toadflax. Pulled for years by YCC, but herbicide spraying finally contained population. High risk because of use levels and goes through Crescent and Gilchrist (private lands not treated).	6120006, 6120046	Willow/sedge.
Upper Little Deschutes Total		74.56					No special habitats mapped within 200 ft. of road.				
Upper Metolius	1014000	1.48	2	4	5	M	Engelmann spruce bottomland; willow/sedge; Dry Creek Swamp is the special habitat that's being referred to, but 1014 is below it and probably not a problem. Cottonwood bog and spruce.	Intersects Dry Creek, which has huge PEPE population. If 1014 gets big weed population, could carry this into lower reaches of dry creek. In flood years, connects with Metolius.	This road is in an area where there's been extensive amounts of logging on private lands. Multiple sections have been logged. No inventory, yet extensive amounts of ground disturbance. Road passes through private lands.		Crosses Dry Creek; might be old haul route.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	1028000	3.16		5	5		Aspen/shrubfield. 1028 intersects Dry Creek Swamp; may hydrologically impact swamp.	Survey & Manage species occurs in area (white chanterelle). Intersects with both Dry and Cache Creeks, which both have large PEPE populations in lower reaches, so if weeds become established could wash down into those populations. Bit higher risk than 1014 because more major road and crosses both drainages.	Private land population of knapweed at Little Butte (1030 rd. which intersects w/ 1028 - about .5 mi. away is population.) Passes through area of mixed ownership that has had extensive amounts of ground disturbance. Some surveys.		Crosses Dry Creek; bigger wetland than 1014. 1 2067 turns into 1028.
	1030000	2.24	1	4	6	M	No special habitats mapped within 200 ft. of road. Old Growth LSR.	1031 has a PEPE population on private land outside of watershed in the Whychus watershed (S31). Because weeds on this road, risk of spreading weeds and impacting TES plants. Connects to 1028 road, which can have similar impacts as discussed above for 1028.	Knapweed population on this road on private land in T14S, R9, S31. Not being controlled.	0	No streams.
	1105000	2.90	1		6	M	No Special habitats within 200 ft. of road. Old Growth pine stands.	PEPE within 1/4 of mile. Protected populations associated with Black Butte Ranch (called Lower Black Butte) and populations in Cache Creek.	High risk species on road feeding into this road. High amt. Groudn disturbance (Rx fire and mowing from Hwy 20 project).		Goes around western side Black Butte. No stream crossings. 1 for flow because contours slope.
	1110000	4.45	1	4	5	M	No Special habitats within 200 ft. of road. Old Growth.	No TES plants within 200 ft. of road. If weeds got established could have cumulative effect with Rd. 1120. 4 because of amount of use and PEPE on Rd. 1120.	No known weed populations. Extremely high use road and connected to Hwy 20 and Rd. 11, which have weeds.		Goes up toward Black Butte top. Black Butte Road. Gravel. Steep so 2 for fine sed.
	1120000	4.73	5	5	6	M	Vernal pool (probably right outside the watershed?), off Rd. 1120, aspen.	PEPE; quite lot along this road. Some protected populations. Weeds put it at risk (tied into roads). Quite few shelterwoods, so fair bit past logging in the area.	Tied to Rds. 11 and 14. Populations of weeds along both of those roads. Lot traffic.	6150008	No streams. Starts off 11 road. Ties into Rd. 14 weed sites.
	1200000	13.06	7	8	7	3H	Mt. Alder/spirea. Direct interaction of road with multiple tribs to Metolius; Weed risk.	Small Peck's penstemon populations; recently found new populations. Real risk on this road is non-native grasses (Agropyron intermedium). Lot historic sheep grazing, which may have suppressed AGIN. But, with no sheep grazing, Maret has observed areas with PEPE & Agoseris elata that have decreased in 10 years, with marked increase in Agropyron. Protected populations with impacts from recreation and non-native species, weed risk also. Habitat degradation exists.	Has weeds on it. Scattered knapweed that is not mapped. Very high use road. Lot people with hay and horse trailers. Major arterial road.	6150008, 6150010, 6150012, 6150024	Crosses Lake Creek, First Creek, Jack Creek, Canyon Creek, Brush Creek, Abbott Creek, Candle Creek, Jefferson Creek (then hits Warm Springs and out of this watershed. Substantial stream crossing. Gravel but in good shape. Because road flat and not steep, don't get lot of erosion off this road. Small, localized wetlands (riparian) so 3 for wetlands.
	1200900	0.40	3	3	5	M	Mt. Alder/spirea.	PEPE			Campgrounds, etc.
	1200980	1.60	3	1	5	M	Mt. Alder/spirea.	No TES plants known within 200 ft. of road.			Campgrounds, etc.
	1210000	11.00	3	5	6	M	Black cottonwood/alder/sedge, mt. Alder/spirea, cottonwood swamps w/ high degree lichen diversity (<i>Lobaria hallii</i>).	No TES plants within 200 ft. of road. Concern would be connections with downstream areas, particularly First Creek, which has a strong PEPE population on it - weed risk.	In Santiam Restoration timber sale, high timber mortality, will be logging, ground disturbance. Private land on the eastern end of it. High recreation route. HYPPER. Connects to Rd. 12.	6150046	Crosses and parallels First Creek, and loops up to Round Lake. Native surface on part of it. Small creek. Don't know if confines floodplain; steep, confined?
	1210600	0.60	3	5	6	M	Mt. Alder/spirea.	No TES plants within 200 ft. of road. But, extension of 1210 road; has been S&M species white chanterelle.	Same notes for 1210.		Road into Round Lake Christian Camp.
	1216000	3.28	1	6	5	M	No Special habitats within 200 ft. of road. LSR.	Historic populations of PEPE on private lands; AGEL occurs. On southern boundary - most significant populations of PEPE in the Metolius Basin. Weed-road risk and AGEL right there along the road.	HYPPER - lot. Scattered populations of knapweed & scotch broom. Goes through private land, which has been extensively logged. Moderate because high use road, existing weed populations.	6150011, 6150012	Crosses the Metolius but paved, by Allingham Bridge.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	1217000	3.50	2	7	5	1H	Mt. Alder/spirea. Riparian.	Bisects significant population of PEPE - historic population that was re-mapped this year. Also Agoseris elata. Right in the middle of one of the largest PEPE in the Metolius.	Fairly high use road. Feeds into Rd. 1420 and Rd. 12, which both have weeds. Entire area historic disturbance.		Crosses the Metolius, but paved where crosses. Bridges, too. Next crossing down from 1216.
	1220000	6.96	1	6	7	1H	No special habitats mapped within 200 ft. of road. In LSR.	PEPE; to the north. Risk of introducing weeds.	In area of scattered shelterwoods and clearcuts. Ground disturbance. Also quite bit Rx fire and other activities. Below the road that goes to Jack Lake. Woodcutting in area. Gets moderate amount of use. Existing populations, use, and previous disturbance.	6150026, 6150029	Crosses 2 intermittent streams. Because of steepness, 2 for fine sed.
	1230000	8.60	4	7	6	1H	Mt. Alder/spirea. Multiple riparian zones at each creek crossing.	PEPE; Quite a bit in area. 6 populations that are fragmented probably by past harvest. Small, fragmented - populations vulnerable to weed invasion. High road density in this area.	In area of dispersed use and horse use. 6 because of existing populations and potential for introduction. Knapweed and lot of bull thistle in area.	6150034	Crosses Canyon Creek, Jack Creek, Roaring Creek, Brush Creek, and 11 intermittent tribs. Steep (Katie thinks).
	1232000	3.30	2	7	7	2H	Mt. Alder/spirea. Riparian.	PEPE; Recent Rx fire, thinning, high mortality, weeds. 7 because protected population, important populations downstream and high OHV use that is actually impacting populations. OHV's creating new road network around it.	Knapweed and bull thistle. 7 because of existing population, high use, and high use of OHV's in this area.	6150048	No streams. Goes just past of Head of Jack Creek.
	1232200	0.90	1	6	5	M	Mt. Alder/spirea. Riparian.	PEPE; Protected. Weeds in area, high rec use, high OHV use, Rx fire and thinning (recent).	Weeds in area.		Crosses intermittent trib to Jack Creek.
	1232400	0.60	6	6	6	M	Head of Jack Creek. Highly significant special habitat; very sensitive. Road to it closed and rehabbed. Main risk - OHV's..	No TES plants within 200 ft. of road. Connected to roads which lead into PEPE populations.	Weed populations nearby, high recreation, high traffic, OHV's, high risk weed species. One of most popular sites in Metolius Basin.		No streams.
	1234000	5.90	1	5	6	M	No Special habitats within 200 ft. of road. Old Growth LSR.	PEPE; Roadside. Connects with important populations. Very high use to Canyon Creek Meadows.	Tansy ragwort. Recent logging in high mortality. Historic logging, too.	6150015	Crosses 2 intermittent tribs, switchbacks up to Jack Lake.
	1235000	3.80	5	4	4	M	Englemann spruce/sedge; Mt. Alder/spirea. Bear Valley - wetlands, huckleberry picking. Riparian influence.	No known TES plants within 200 ft. of road. Connects to other areas where TES plants.	No known weed populations.		Crosses Canyon Creek and Bear Valley Creek (trib to Canyon Ck.); Road to Bear Valley. Hiking trails.
	1237000	3.70	2	5	4	M	Mt. Alder/spirea. Riparian.	No TES plants within 200 ft. of road. Connects to important downstream PEPE sites.	No known weed populations.		Crosses 3 intermittent tribs. Switchbacks to nowhere. Goes up towards Two Springs.
	1260000	3.00	5	7	6	1H	Mt. Alder/spirea. Floodplain for Canyon & Roaring Cks (wetlands, riparian).	PEPE; road runs right through middle of population; weed risk.	Scattered weeds in area, surveys unknown, high traffic, stock animals.		Crosses Roaring Creek.
	1260200	1.90					Mt. Alder/spirea.	No TES plants known within 200 ft. of road.			Campgrounds, etc.
	1270000	4.50	5	6	6	M	Mt. Alder/spirea. Riparian. Rest unknown, low probability. Weed risk.	Habitat for PEPE and AGEL. Weed risk.	High traffic. High recreation use.		Crosses 3 intermittent tribs.
	1280000	3.80	4	6	6	M	Mt. Alder/spirea. Riparian, channels.	PEPE; weed risk, in vicinity of "Little Montana" site. Not surveyed much.	Needs weed surveys; high potential.		Crosses Abbot Creek and 4 intermittent tribs.
	1290000	0.93					Mt. Alder/spirea.	No TES plants known within 200 ft. of road.			
	1292000	2.30	5	5	5	M	Mt. Alder/spirea. Unknown but fairly high probability. Risk would be hydrological.	Surveys unknown, moderate probability. Weed risk.	Unsurveyed. Large population nearby. High traffic to trailhead.		Parallels Candle Creek and crosses 3 intermittent tributaries. Close to Candle Creek? But doesn't cross it.
	1298000	2.40	5	6	6	M	Sedge/moist meadow	PEPE population and potential habitat for AGEL.	Tansy ragwort.	6150024	Crosses 5 intermittent tribs, on west side Metolius,
	1400000	13.22	5	6	7	1H	Mt. Alder/spirea, riparian. Major access road to Metolius Basin and campgrounds. Runs along river, crosses intermittent channels and seeps. Hydrological interference and weed risks.	PEPE; AGEL. Weed risk.	Known populations, high traffic. Scattered populations so hard to find and treat.	6150008, 6150010, 6150011	Main paved road down the Metolius. Does not actually cross the Metolius. On east side Metolius. Crosses 17 intermittent tribs off of Green Ridge. In bottom, not really affecting flow that much.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	1400029	0.10	0	3	6	M	No special habitats mapped within 200 ft. of road.	PEPE		6150011	None of these little roads have impacted floodplain, most (all?) of them paved and go short distances into campgrounds. Not sure which road crosses Metolius into fish hatchery, but paved and bridge.
	1400140	0.30	0	3	6	M	No special habitats mapped within 200 ft. of road.	PEPE		6150008	
	1400640	0.30	2	1	6	M	Mt. Alder/spirea.	No TES plants known within 200 ft. of road.		6150008	
	1400700	0.08	2	3	6	M	Mt. Alder/spirea.	PEPE		6150008	
	1400800	0.40	2	1	6	M	Mt. Alder/spirea.	No TES plants known within 200 ft. of road.		6150008	
	1400900	0.10	2	1	6	M	Mt. Alder/spirea.	No TES plants known within 200 ft. of road.		6150008	
	1419000	3.05	5	6	7	1H	Mt. Alder/spirea. Perennial streams (Lake Ck.), meadows. Road crosses streams. Weed risk.	PEPE; Weed risk.	Main access road to Camp Sherman. High traffic. Private lands. Grazing. Lot weeds interspersed on private lands not being treated.	6150008, 6150011	Comes into Camp Sherman from west. Crosses Lake Creek and Metolius. Parallels the Metolius for 2 miles. Paved.
	1419700	1.53	5	6	7	1H	Mt. Alder/spirea.	PEPE			
	1419900	2.30	5	6	7	1H	Mt. Alder/spirea.	PEPE		6150008	
	1420000	3.65	6	7	7	2H	Willow/sedge; mt. alder/spirea. Crosses several creeks, wetlands, riparian, meadows. Weed risk. Interference with hydrology.	PEPE; AGEL populations nearby and potential habitat. Weed risk. High traffic.	Known populations, high traffic.	6150011	Crosses First, Jack, and Canyon Creeks; appears to be paved. Floodplain 3 bec. Of how crosses the slope. Lot water moves off slope - intermittent tribs that during high flows get blocked up.
	1420400	0.80	6	7	7	2H	Mt. Alder/spirea.	No TES plants known within 200 ft. of road.			Campgrounds, etc.?
	1425000	1.60					No special habitats mapped within 200 ft. of road.	PEPE			Can't find on map.
	1430000	3.30	4	3	4	M	Switchbacks intersect drainages with diverse plant communities. Hydrologic interference and weed risks.	PEPE habitat.	Connects to Rd. 14. Known populations, vectors.	6150008	Lot switchbacks that go through drainages with Douglas maple.
	1490000	3.58	3	4	4	M	Hydrologic interference.	PEPE at bottom. Weed risk.	High use.	6150008	Road to top of Green Ridge. Crosses 18 intermittent tribs. Same ratings as 1490 in different watershed - high segments.
	1499000	1.51	6	5	7	1H	Mt. Alder/spirea. Accesses lower Metolius. Seeps adjacent to Metolius River. Lot erosion, lack road maintenance. Large landslide occurred along road. Erosion. Weed risk.	Cypripedium montanum. Unknown TES. Weed risk, erosion. Potential habitat for PEPE and AGEL.	Diffuse and spotted knapweed, scotch broom. Weeds difficult to treat because inaccessible; lack of monitoring; erosion probably creating new sites.	6150008	Parallels Metolius and crosses 8 intermittent tribs. Same rating as 1499 in Lower Metolius??
	2060000	0.12	3	5	6	M	No special habitats mapped within 200 ft. of road.	PEPE		6150010	No streams.
	2061000	3.83	5	5	5	M	Aspen/shrub wetland; Intermittent channels, TES plants, known weeds, private lands not being treated.	PEPE	Diffuse knapweed.	6150013	Crosses Dry Creek and appears to bump into the wetland.
	2064000	2.60	2	4	5	M	Mt. Alder/spirea. intermittent drainages. Low risk.	Known PEPE site near one end of road. High probability for AGEL. Weed risk.	Knapweeds.	6150010	No streams.
	2066000	3.00	1	1	6	M	Spring near here but not right on this road? Unknown.	Unknown, low probability.	High traffic.	6150010, 6150018, 6150031	Appears to go to Scout Lake.
	2066700	0.40	1	3	5	M	Not surveyed, low probability.	Connects to Cache Ck. Which has PEPE, leads to top Cache Ck. Watershed and weed risk.	Private lands, next to HWY 20, high traffic.	6150031	Scout Lake Campground Rd.?
	2066705	0.20					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Scout Lake Campground Rd.?
	2067000	5.35					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Crosses Cache Creek,
	2068000	4.00	4	3	6	M	Connects to Meadow Lakes Basin. Seeps are along there.	SULP	Spotted knapweed. Weeds present, high traffic, OHV's.	6150018	Goes toward Cache Lake. No stream crossings.
	2070000	2.50	4	4	8	1H	Mt. Alder/spirea. Road around Suttle Lake; adjacent to lakes. Wetlands, streams.	TES habitat for Agoseris elata, sulp.	High traffic, known knapweed populations are expanding and lot St. Johnswort.	6150010, 6150031	Road on southern side Suttle Lake. Paved.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	2070450	0.11					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150031	
	2070500	0.30					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150031	
	2070700	0.20					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	2070800	0.50					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	2076000	3.01	8	7	7	3H	Willow/sedge. Meadow Lakes area. Small meadows, seeps, wetlands, small lakes. Highly impacted by recreational traffic along roads (provide OHV access).	High probability AGEL; surveys unknown. Because of OHV's, dispersed camping, high impact to vegetation by public.	High traffic, OHV's, lot vegetation management recently. Corbett Snow Park is known site and leads into this area.	6150010, 6150036	Road to Meadow Lakes Basin. Heads off Hwy 20 by Corbett Snow Park. Road segment providing motorized access and degrading riparian habitat.
	US-20	6.65	5	7	8	2H	Willow/sedge, mt. Alder/spirea, seeps. Hydrologic interference, cinders from highway.	PEPE; AGEL habitat. Weed risk.	Knapweed, St. Johnswort. High Traffic. Difficult to control because scattered and dangerous safety concerns.	6150010	Hwy 20 -- because of amt. Sanding -- 4 for fine sed. Not bad for flow effects because runs along flat and follows contours, but as goes past Suttle Lake will get a 3 rating because high sed delivery in Suttle Lake when rains hard. Instant delivery when rains hard into streams instead soak into ground and sponge release.. In rain on snow zone, steep, wide - so rain and snow melt instant delivery.
Upper Metolius Total		173.58									
Upper South Fork Crooke	US-20	5.82	1	1	7	M		No TES plants known within 200 ft. of road.			
Upper South Fork Crooked Total		5.82									
Walker Mountain	5800000	2.72	0	0	8	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	St. Johnswort (.4 mi.). Pulled by YCC for 3 years and, due to persistence, reduced population. Use roadside as chain up area and Hwy Dept. cinder pile nearby. Hwy Dept. does lot of shoulder work in area. High traffic, lots maintenance, comes off Hwy 97, brings species from westside at upper end.	6120014	Crosses 3 intermittent streams.
	5835000	4.45	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Weed treatment analysis area for 2nd EA. Probably high traffic due to Baja 58 harvest areas. Two Rivers area -- private land, OHV's -- probably high weed potential. High traffic in portion near private land (at least 1.5 mile of it high potential for weeds).		Crosses 3 intermittent streams. Baja 58 area. Comes off 58 rd. Major route -- gets lot traffic; goes to private residences.
	5840000	4.22					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Crosses 1 intermittent trib. Does not go past any private land, but comes off 5835 and heads west.
	5850000	1.40					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Not on map?
	5852000	0.51					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Not on map?
	9400000	0.31	0	0	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Potential is there, heavily used road, comes off 97.	6120041	Crosses 1 intermittent trib. Comes off Hwy 97 and is about .3 mile on Deschutes, then goes onto Winema, then back on DES for .5 mile. Switchbacks up Walker Rim onto top in Sellers watershed. Main road, goes to Silver Lake (back road).
	9402000	3.69	5	0	1	M	No Special habitats mapped within 200 ft. of road. Top of Walker Mt. might be subalpine fir. Steep mountain road. Road affects landscape. Subalpine fire ?? (not common east Deschutes habitat, so kind of unique - like Odell Butte).	No TES plants within 200 ft. of road. Interesting place to look for bryophytes.	Not lot traffic but still has connectors to 97; slight risk.		Road up to top Walker Mt. Any road going to top of mountain must affect flows. Old harvest areas choked with tall Ceanothus and manzanita, on lower shoulders of Walker Mt. Highly impacting road.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	9407000	1.75					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Not on map?
	9751000	4.97	0	0	7	1H	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Diffuse & Spotted knapweeds, Canada thistle, St. John's wort. According to weed map, weeds might cover bet. .5-1 mile of this road, close to its junction with 97. High potential to spread. Lot of road maintenance -- could spread weeds. In Baja 58 harvest area.	6120041, 6120059	Crosses 1 intermittent trib. Comes off Hwy 97. Good road, well-maintained. Drainages on it. Follows one intermittent at junction w/ 97.
	9753000	5.00	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	Comes off Rd. 94, which is about 1 mile with it's intersection w/ 97. Don't know weed status of Rd. 94, but weeds on 97.		Crosses 2 intermittent tribs. Goes around base of Little Walker Mt. This road stays at just about same elevation all the way -- unlike other roads in area that traverse topography.
	9755000	7.50	0	0	3	L	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.	No weeds currently, but risk because comes off Hwy 97 (at both beginning and end of road). Lotof use by hunters and mushroomers.		Goes down the gut of a gully, highly eroding. Closed system, though. Goes up hill and around Little Walker Mt.
	9756000	1.40	0	2	3	L	No special habitats mapped within 200 ft. of road.	No TES plants within 200 ft. of road, but possibility of BOPU in adjacent lands. Ask Carolyn if site down by railroad. High road density could impact BOPU.	Hooks to road that is only about 1.5 mi. from Hwy 97 (9755 -- which is heavily used). Probably moderate road use.		Connection between 9765 and 9755. Not on map. Base of Walker Rim, goes along north edge of base of Walker Mt.
	9758000	4.12	0	0	6	M	Crosses some riparian intermittent drainages.	No TES plants known within 200 ft. of road.	Diffuse & spotted knapweeds, Canada thistle, St. Johnswort. High potential for spread. High traffic. Private land off of it. Goes right to Crown Pacific land.	6120041	Crosses 2 intermittent tribs; appears to run adjacent to a wetland.
	9760000	15.40	0	4	3	M	No special habitats mapped within 200 ft. of road.	BOPU; powerline intersection concerns like on other roads in this watershed. Same concerns as far as weeds and traffic use.	No weeds currently, but risk because of traffic from known weed sites (like Hwy 97).		Crosses 1 intermittent trib.
	9762000	2.18					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Can't find on map.
	9765000	6.88	0	4	3	M	No special habitats mapped within 200 ft. of road.	BOPU; Powerline population again.	Comes off 9768, but not as much traffic as some roads in this watershed.		No streams.
	9768000	7.62	6	0	4	M	Aspen toward Walker Rim (on unnamed creek); Boundary Spring. Sugarpine up Walker Rim. Road density and high traffic (Crown Pacific logging and hunters) combined with high ground disturbance from past harvest is likely restricting floodplain and water table. Aspen has enclosure and on-going rehab work.	No TES plants known within 200 ft. of road.	No weeds currently present but potential and unusual habitat (aspen and associated plants), and high traffic, high ground disturbance in area.		No streams.
	9772000	8.24	0	4	4	M	No special habitats mapped within 200 ft. of road.	BOPU; Powerline intersects this road; BOPU found along powerline, not on this road, but on powerline road that comes off of it. Same concerns as 9775: weeds, traffic.	No weeds currently present but potential because comes from epicenter of weed infestation. Well-travelled, but not the main haul road like 9775 (not as much traffic).		No streams. Also covered this road in Sellers Watershed.
	9775000	5.53		4	5	M	Wetland on Crown Land (see notes in Sellers Watershed).	BOPU; Powerline population but not federal land. BPA access for Crown. Weeds due to road could be a threat to TES plants. ASPE there, too. Higher rating than in Sellers Watershed because higher road use (BPA patrols daily), closer to infestations.	No weeds known to be present. Private land. But road originates in weed infested area on private land.		No streams.

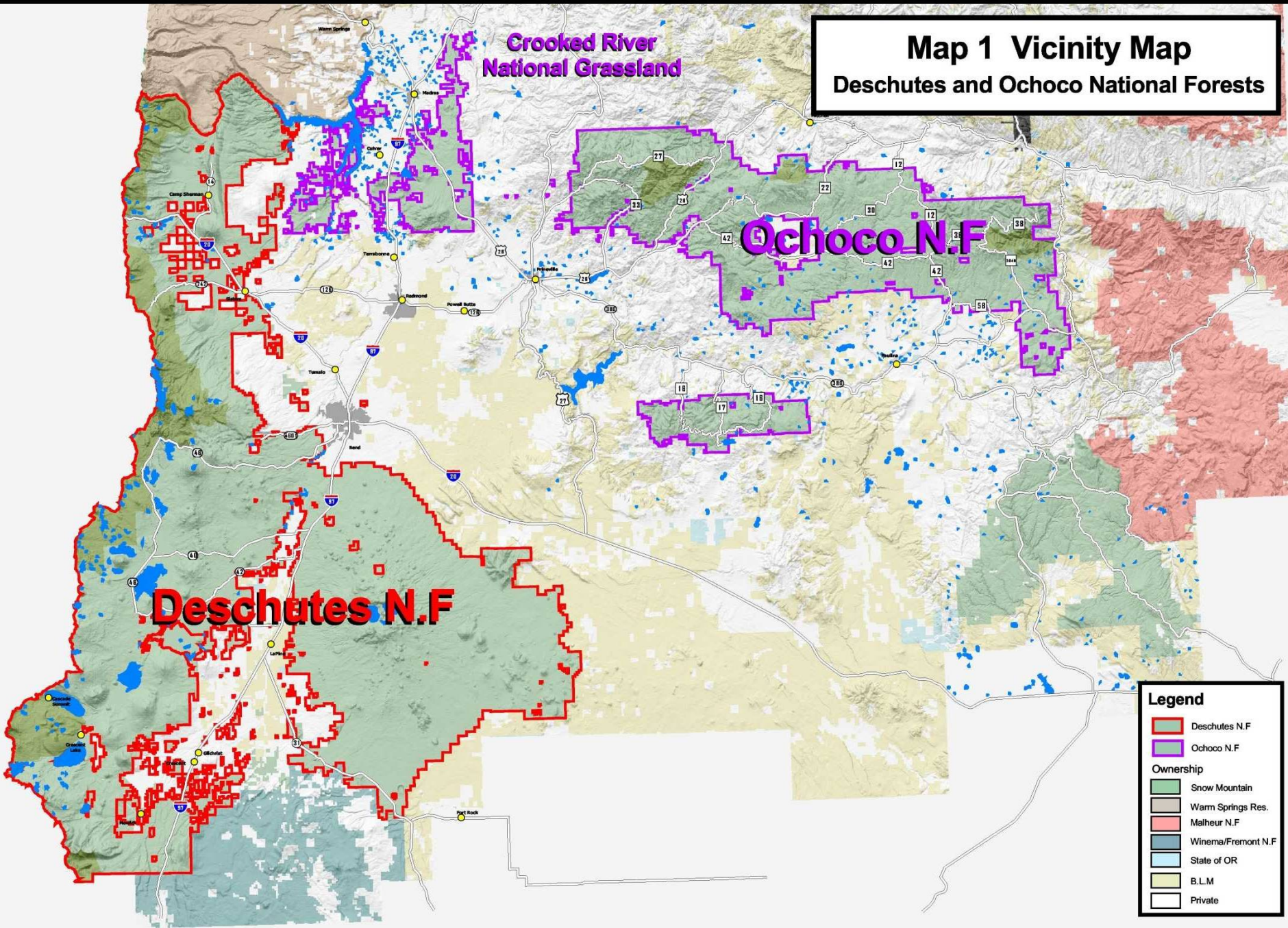
WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	US-97	9.13	People = 1; Deer = 9.	0	6		Nice ponderosa pine stands. 5 mile draw -- wildlife migration route for deer and elk (east and west) -- has some wet areas but not right along 97. Major draw is not impeded by the road though we're sure deer have a different opinion. Sedges and other water loving plants in area.	No TES plants known within 200 ft. of road.	Spotted & diffuse knapweeds, Canada thistle (?), St. Johnswort. Same site that's been showing up in this area. Scattered plants. Low density. But high traffic, high maintenance, and existing seed bank.	6120041	No streams.
Walker Mountain Total		97.02									
Whychus	1000250	0.30					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150004	Campgrounds, etc.
	1000390	0.60					0.4 Aspen.	PEPE		6150004	Aspen stand.
	1000900	0.57					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150004	
	1008000	6.44	2	5	6	M	Unknown.	PEPE; Weed risk.	Links to private lands and other weed sites.	6150005, 6150051	No streams.
	1012000	3.03	6	6	7	1H	Aspen grove with wetland. Mudbogging occurs.	PEPE; Weed risk.	Links known sites, high use. Coldsprings cutoff.	6150004, 6150010	No streams.
	1012300	3.80	1	4	7	1H	No special habitats mapped within 200 ft. of road.	Unknown - private land. PEPE potential. Extensive logging on private lands and private development. Risk is moderate.	Private lands have weeds; extensive ground disturbance.		Goes to Graham corral horse camp.
	1012340	0.88	1	4	7	1H	No special habitats mapped within 200 ft. of road.	PEPE	Private lands have weeds; extensive ground disturbance.		No streams.
	1014000	2.42	3	3	6	M	Very intact old growth stands in high mortality area. Rest unknown.	ALVI. Low probability of TES plants.	Lot private lands that have been clearcut. High weed risk. Some known weeds nearby leading to this road. Moderately high traffic.		No streams.
	1018000	8.45	3	4	4	M	Spruce/sedge; spruce bottomland; willow/sedge; Mt. Alder shrubfield; bog blueberry.	Unknown. Some potential habitat. Weed risk.	High use, private land logging extensive.	6150004, 6150020	Road up above Trout Creek Swamp. Crosses Trout Creek. Allows access to Trout Creek swamp - ohv's.
	1024000	1.70	3	2	4	M	Spruce bottomland; Mt. Alder shrubfield. Weed risk and horse use.	Unknown. Weed risk.	Vectors in area. Known sites.		No streams. Wetland to east and road goes to west - so no affect on wetland.
	1026000	1.10	2	2	4	M	Nearby special habitats. Risk is weeds. Lot horse use.	Unknown. Weed risk.	Vectors in area. Known sites.		Gets close to Alder Creek.
	1028000	2.81		5	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150004, 6150005	No streams.
	1030000	3.16	1	4	6	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150005	No streams. Appears to cross through middle of spring, but botany glob does not show wetland.
	1040000	4.96	2	3	4	M	Unknown. Weed risk.	Unknown. Connects to TES sites (PEPE).	Private lands, logged (clearcut).	6150004	5 segments; No streams. Steep in places; could potentially funnel runoff close to Trout Creek, so gave fine sed rating.
	1100000	7.14	2	5	6	M	Unknown.	PEPE in area. Probably populations along this road. Weed risk.	Known populations; high traffic.	6150006, 6150007	Paved, crosses no streams. Road to Black Butte, Green Ridge.
	1100021	0.65					Aspen.	No TES plants known within 200 ft. of road.		6150007	Aspen. Indian ford campground road??
	1102000	4.03	2	4	6	M	Unknown.	PEPE; Weed risk.	Goes to private land. Known weeds. Infested private lands in some areas.	6150006	No streams.
	1105000	3.10	2	3	3	L	Unknown. Might be riparian seeps.	PEPE potential habitat. Maybe known populations. Weed risk.	Mt. Bike trail.	6150007	Road goes around Black Butte.
	1110000	0.80	1	4	5	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			Same as Upper Metolius - see that rating.
	1120000	0.30	5	5	6	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			No streams.
1126000	1.53	2	3	6	M	No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			No streams.	
1130000	3.01	2	2	4	M	Unknown.	Unknown. PEPE potential. Intermittent stream.	Connects to Rd. 11. Weed potential.		No streams.	
1500000	10.80	5	5	6	M	Spruce/sedge; spruce bottomland; Senecio wetland. Major road; weed risk.	Probably some potential habitat. Unknown. Weed risk.	High use, high traffic.	6150004	Crosses N. Pole Creek. Parallels Pole Creek.	

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	1505000	8.33	3	4	3	M	Aspen/wildrye. Intermittent channels to Squaw Creek, Pole Creek.	High probability habitat for PEPE.			
	1510000	3.10	3	5	5	M	Mt. Alder shrubfield. Riparian. Weed risk and hydrologic interference.	PEPE; Weed risk, horses, vectors.	Horses, vectors, residential area, traffic.		Crosses Trout Ck. In intermittent section.
	1512000	2.40	2	3	4	M	Unknown.	Potential habitat for PEPE. Weed risk.	Goes into private lands that have been extensively logged, connects to known sites.		No streams.
	1513000	3.88	3	3	4	M	Unknown.	Unknown.	Unknown. Connects to Rd. 15. High traffic.		No streams.
	1514000	8.25	3	3	4	M	Spruce bottomland; spikerush; mt. Alder shrubfield. Crosses riparian areas. Weed risk; dispersed use.	Unknown. Weed risk.	Connects to Rd. 16. Known populations.	6150003	Wetlands. Crosses Pole and Squaw Creeks and Snow Creek.
	1516000	3.70	3	3	4	M	Spruce bottomland	PEPE			1 intermittent streams.
	1520000	4.00	4	3	4	M	Spruce/sedge. Weed risk from horse camp and Rd. 15.	No TES plants within 200 ft. of road. Connects to Trout Ck. Swamp.	Connects to roads with known weeds; horse use.	6150020	Crosses Trout Creek below Trout Creek Swamp. 1/4 mi. road in a 3 mile stretch. That segment by the swamp will get high; other segments won't.
	1526000	3.40	4	3	5	M	Spruce/sedge; spruce bottomland; Senecio wetland; spikerush; mt. alder shrubfield. Hydrologic interference risk and weed risk.	Unknown. Weed risk.			Crosses Pole Creek and parallels a trib to Squaw Creek. Floodplain - don't know how close really gets.
	1600000	8.11	5	6	7	1H	Cottonwood/sedge; Mt. Alder/spirea. Weed risk.	Known populations and high probability habitat for PEPE. Weed Risk.	Knapweed. High traffic.	6150003	Paved Rd. from Sisters to Three Creek Lake. Partially within Squaw Creek floodplain.
	1600550	0.02					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	1605000	1.20					Mt. Alder/spirea.	PEPE		6150003	No streams.
	1608000	1.64					Mt. Alder/spirea.	No TES plants known within 200 ft. of road.		6150003	Don't find on map, but based on other close roads - 0 ratings.
	1610000	0.51	2	2	3	L	Unknown.	Unknown. Probably potential habitat.	Private lands.	6150003	No streams.
	1620000	0.31	2	2	4	M	Unknown.	Unknown.	Known.	6150003	No streams.
	2000015	0.10					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150001, 6150010	Don't know -
	2000115	0.36					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150010	Don't know -
	2000357	0.10					No special habitats mapped within 200 ft. of road.	PEPE		6150010	Don't know -
	2050000	6.00	3	3	3	L	Wet meadow; willow/sedge. Weed risk.	PEPE. Weed risk.		6150002, 6150006	
	2052000	4.15	2	3	3	L	Unknown.	PEPE potential. Weed risk.	Connects to Indian Ford known weed populations.		No streams.
	2058000	4.20	4	6	7	1H	Willow/sedge. Hydrologic interference, runoff. Dispersed use.	PEPE; affects hydrology of populations, bisects them. Weed risk.	High risk. High use. County maintenance (blading and drainage ditches).	6150001, 6150002	Crosses Indian Ford Ck. And associated wetlands.
	2058080	0.20					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.		6150002, 6150010	
	2059000	3.40	2	3	6	M	Unknown.	PEPE potential habitat. Weed risk.	Known sites at Cascade Meadows Ranch spreading onto FS lands. Fuel reduction project in area.		No streams.
	2060000	4.10	2	5	6	M	Unknown.	PEPE; Weed risk.	Known weeds; private lands.		No streams.
	2061000	0.87	4	5	6	M	Multiple springs. Lot private land. Weed risk & hydrologic interference.	PEPE	High use. All private - not good weed control. Residential. Grazing.		Camp Polk Road.
	2610000	3.58					Meadow.	No TES plants known within 200 ft. of road.			Poa meadow. Crosses Squaw Creek. Appears to have numerous springs on private ground. Paved.
	4606000	2.45	5	5	6	M	Aspen, riparian. Weeds and dispersed use.	PEPE habitat, probably known sites. Weed risk, dispersed use.	Known sites. High use.	6150032	Crosses Squaw Ck. Old haul route past Sisters.
	OR-126	2.69					No special habitats mapped within 200 ft. of road.	No TES plants known within 200 ft. of road.			
	OR-242	10.96	5	5	7	1H	Aspen. Goes by Cold Springs (riparian aspen), small meadows, lava fields. Weed risk and hydrologic interference.	PEPE; Weed risk. Extremely high traffic (scenic byway).	Weeds, logging disturbance.	6150004	Aspen.

WATERSHED	ROAD	Length (mi)	Special Habitats	TES Plants	Noxious Weeds	Summary Ratings	Special Habitat Notes	TES Notes	Weeds Notes	Weed Site #	General Notes
	US-20	8.97	3	4	6	M	Willow/sedge; aspen/shrub wetland; aspen near Indian Ford campground. Road intersects special habitats. Risk is hydrologic interference, weeds.	PEPE; Weed risk & maybe dispersed use.	Weeds. High traffic. Lot fuel reduction projects that have created weed habitat.	6150002, 6150010	Wetlands. Crosses Indian Ford and Squaw Creeks. By Black Butte Ranch aspen.
Whychus Total		172.57									



Map 1 Vicinity Map Deschutes and Ochoco National Forests

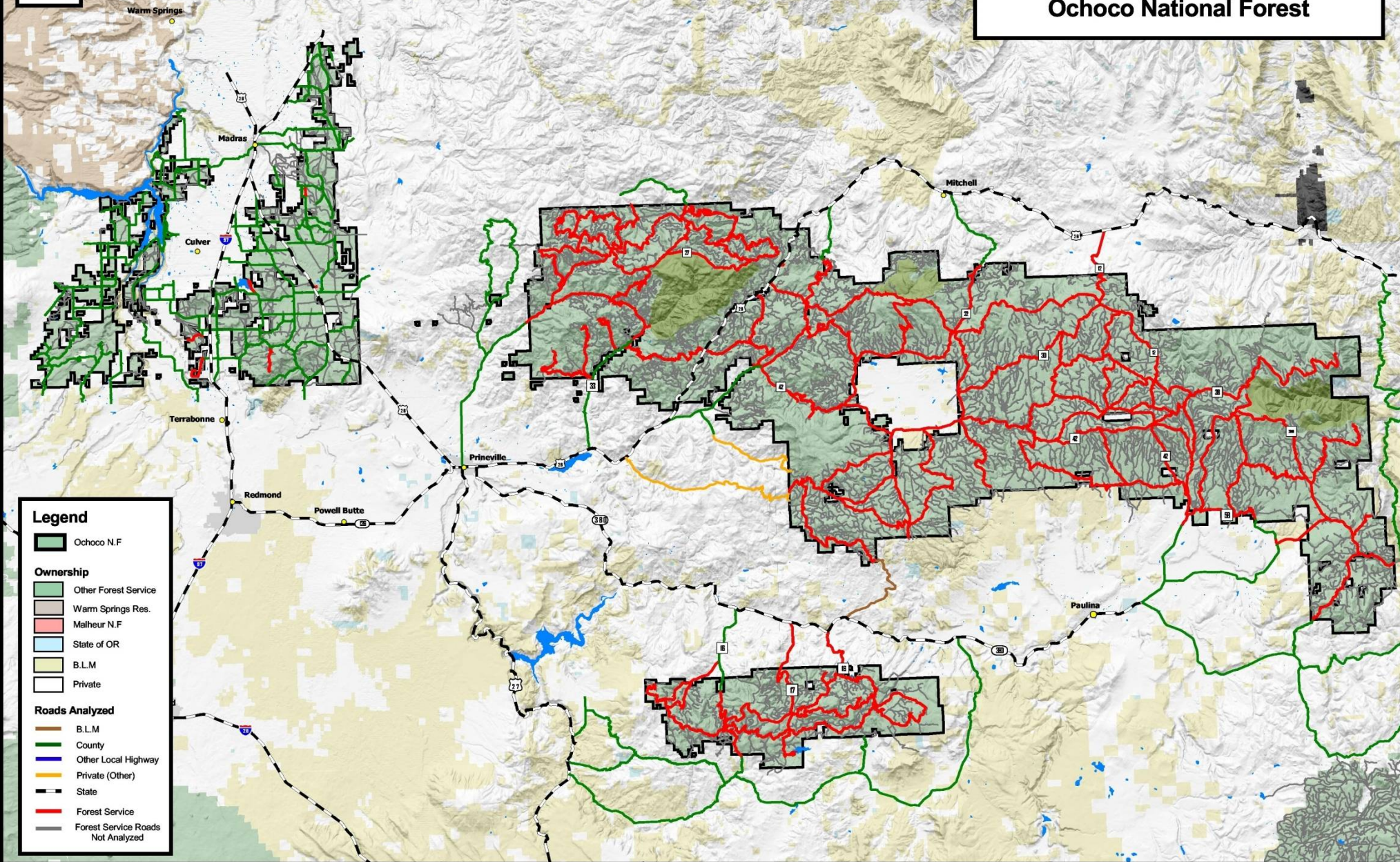


Legend

- █ Deschutes N.F.
- █ Ochoco N.F.
- Ownership**
- █ Snow Mountain
- █ Warm Springs Res.
- █ Malheur N.F.
- █ Winema/Fremont N.F.
- █ State of OR
- █ B.L.M.
- █ Private



Map 2 Roads Analyzed Ochoco National Forest



Legend

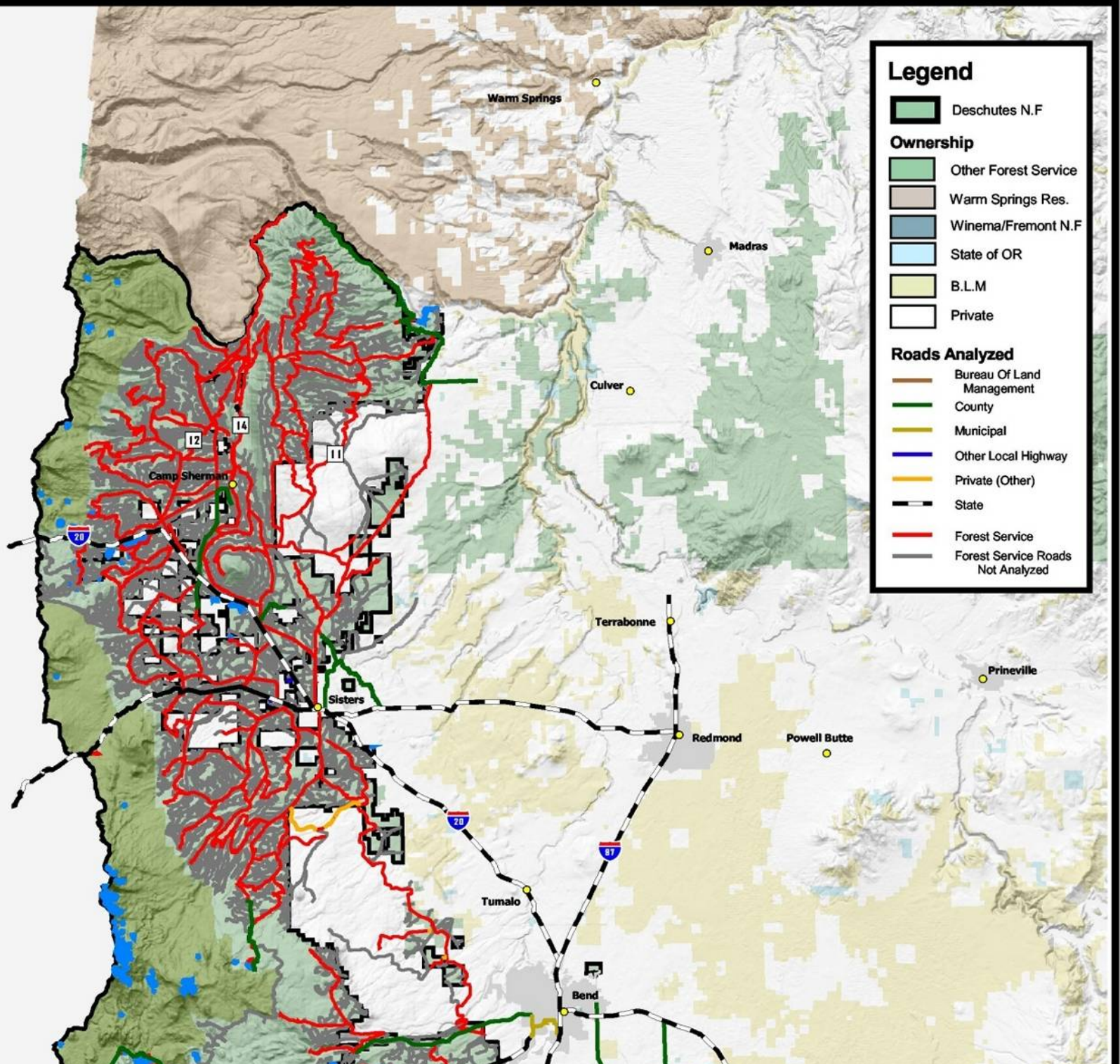
- Ochoco N.F.

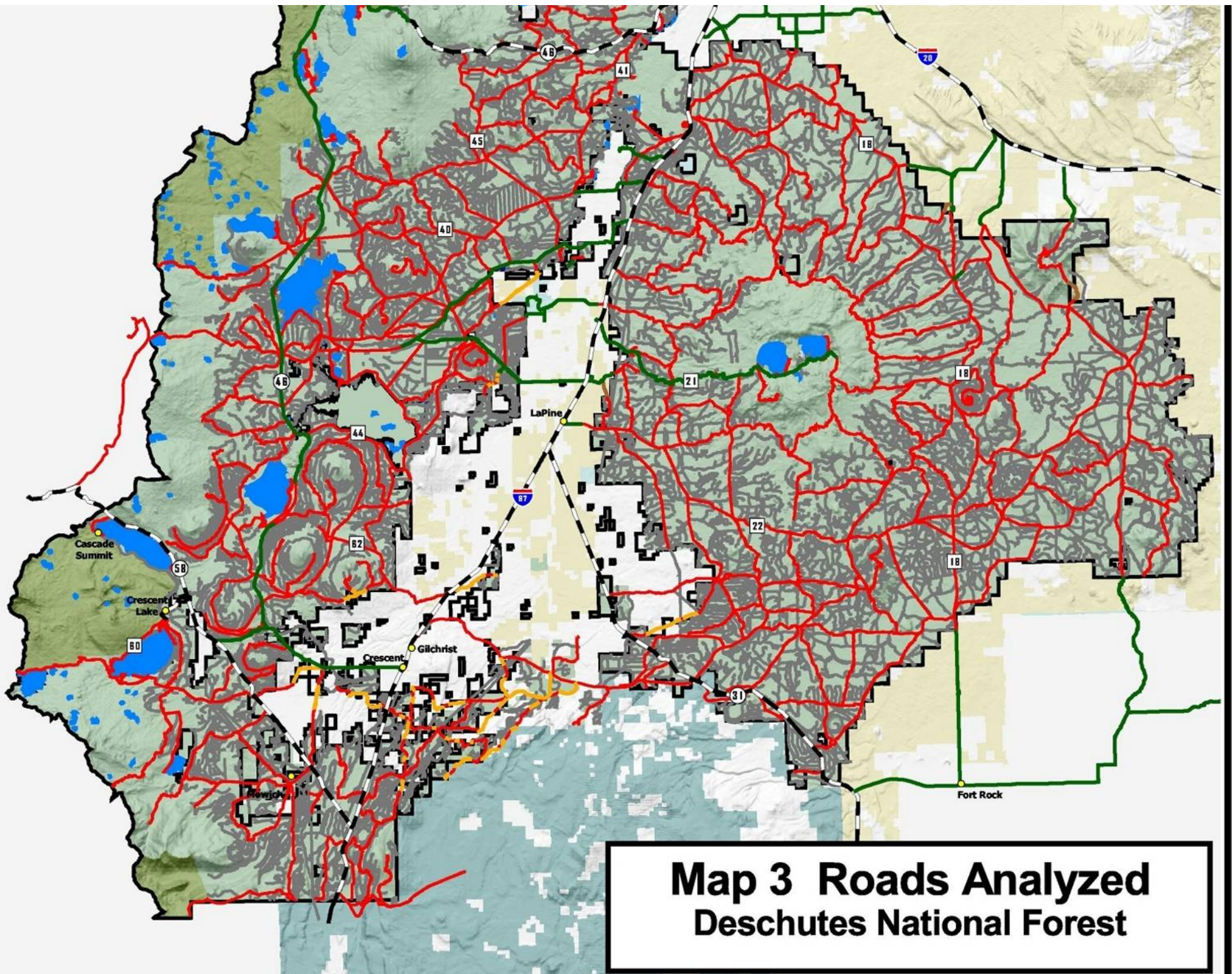
Ownership

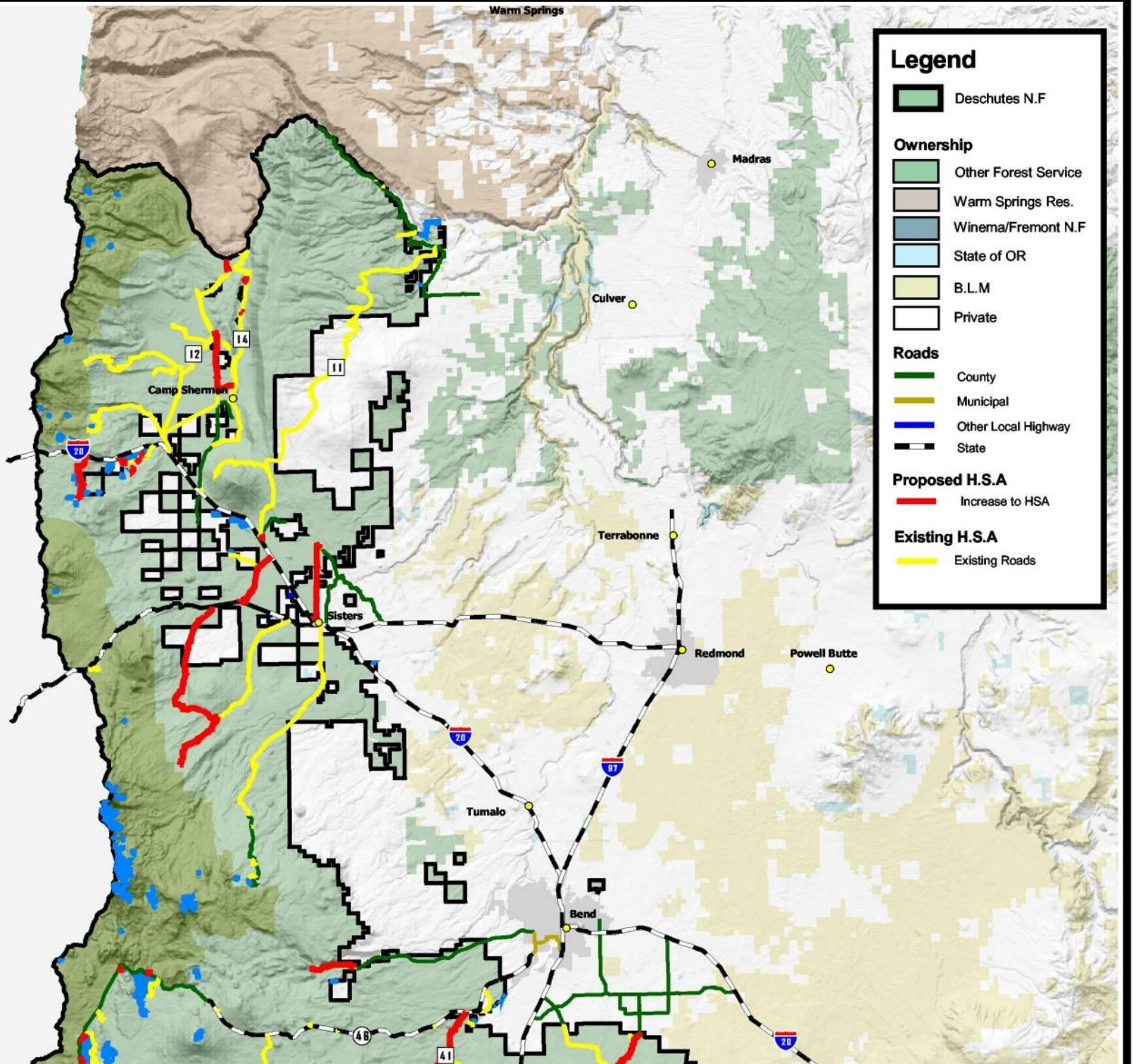
- Other Forest Service
- Warm Springs Res.
- Malheur N.F.
- State of OR
- B.L.M.
- Private

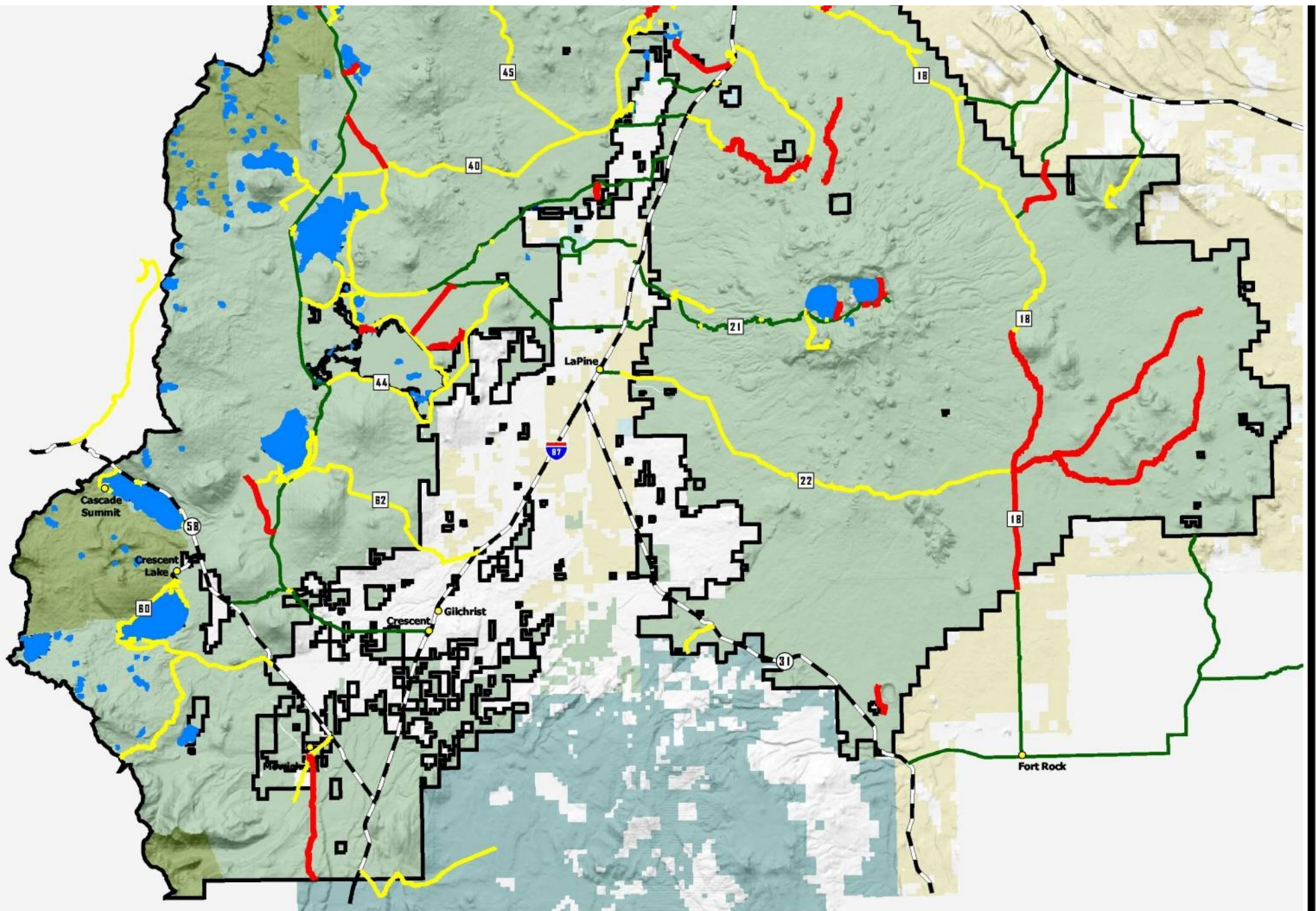
Roads Analyzed

- B.L.M.
- County
- Other Local Highway
- Private (Other)
- State
- Forest Service
- Forest Service Roads Not Analyzed

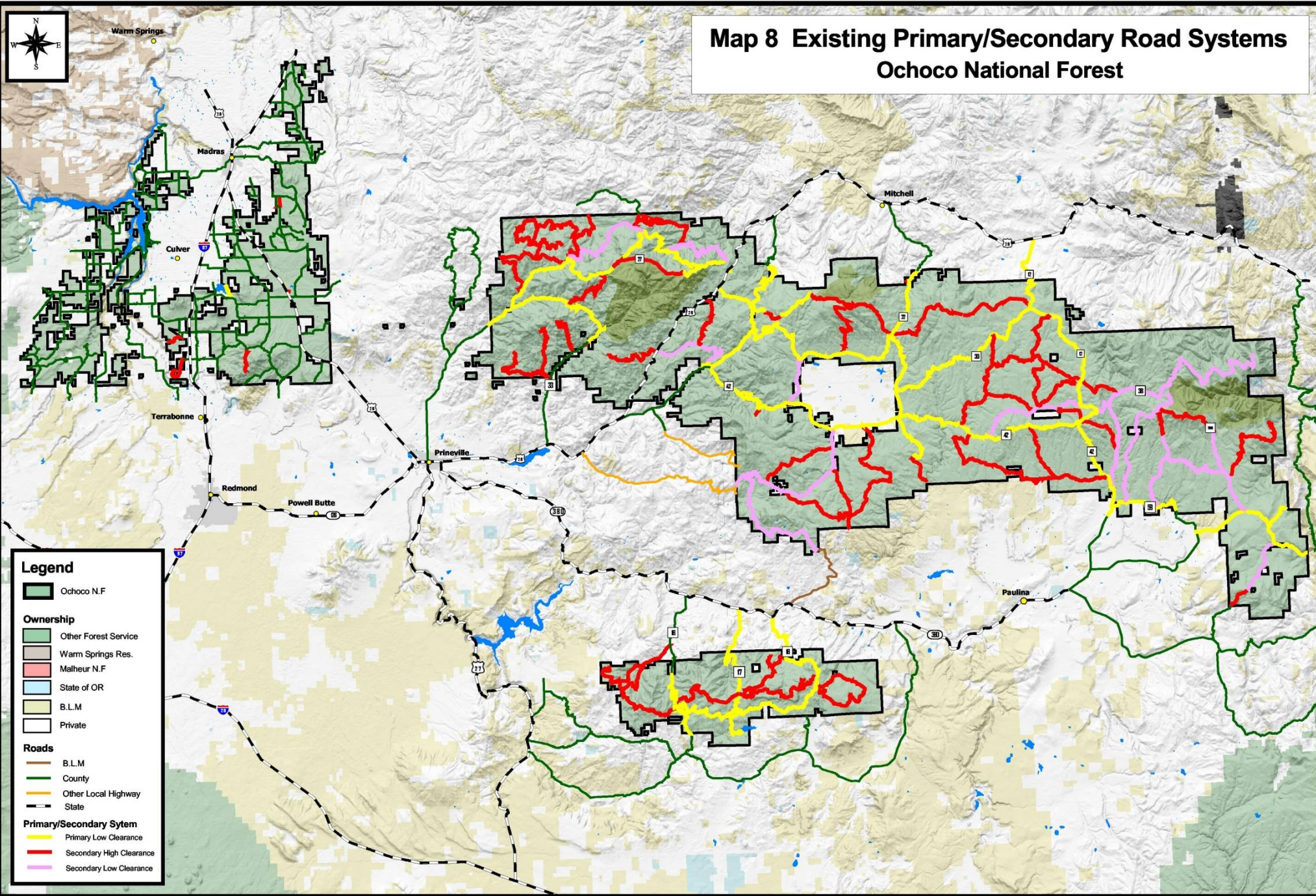






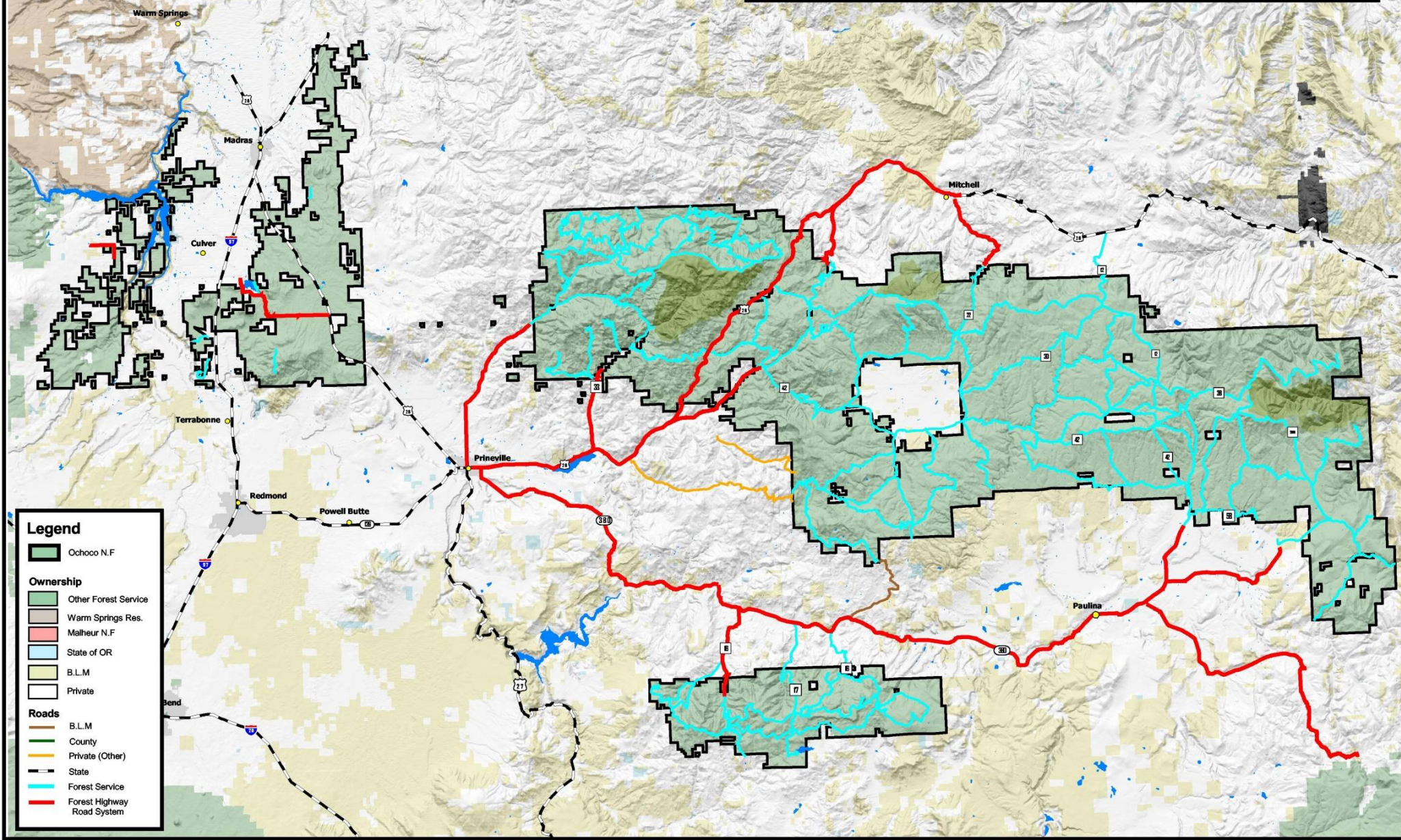


**Map 7 Proposed Highway Safety Act Road System
Deschutes National Forest**





Map 12 Ochoco Forest Highway System Ochoco National Forest

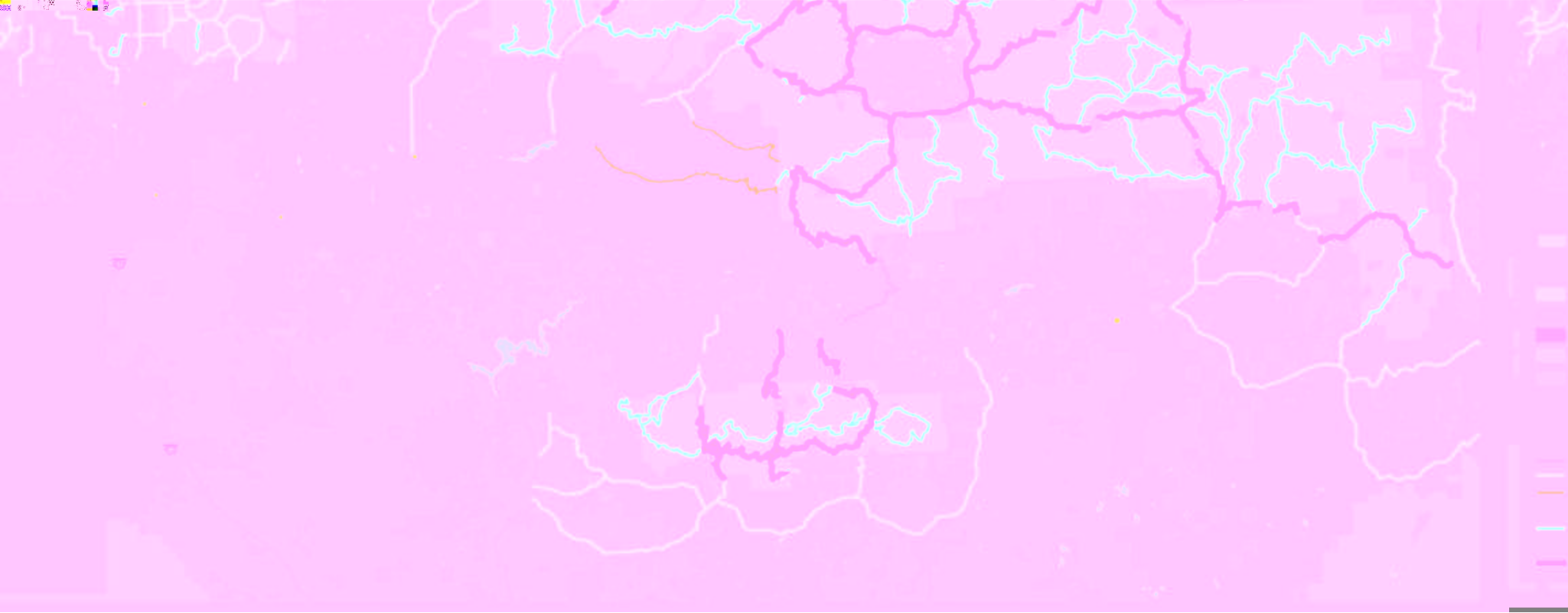
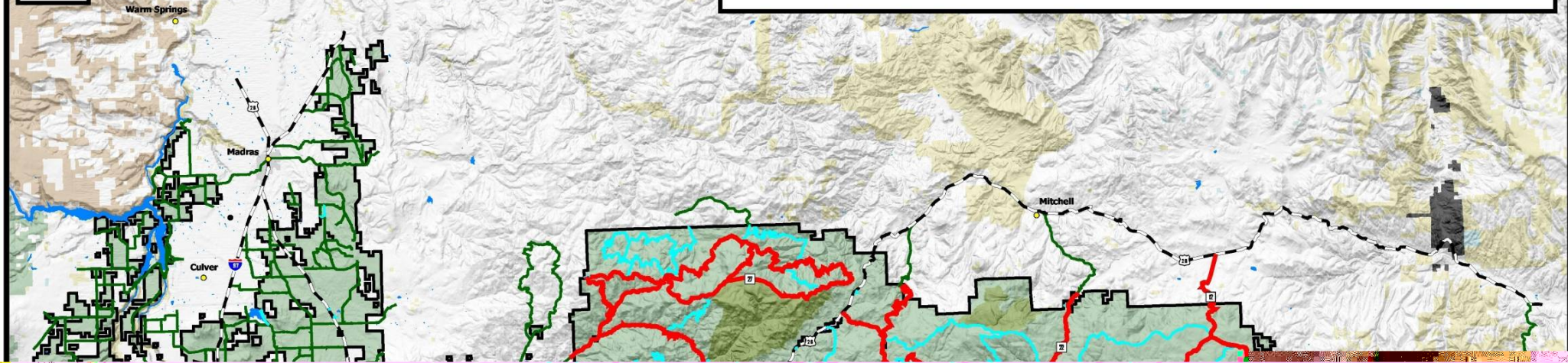


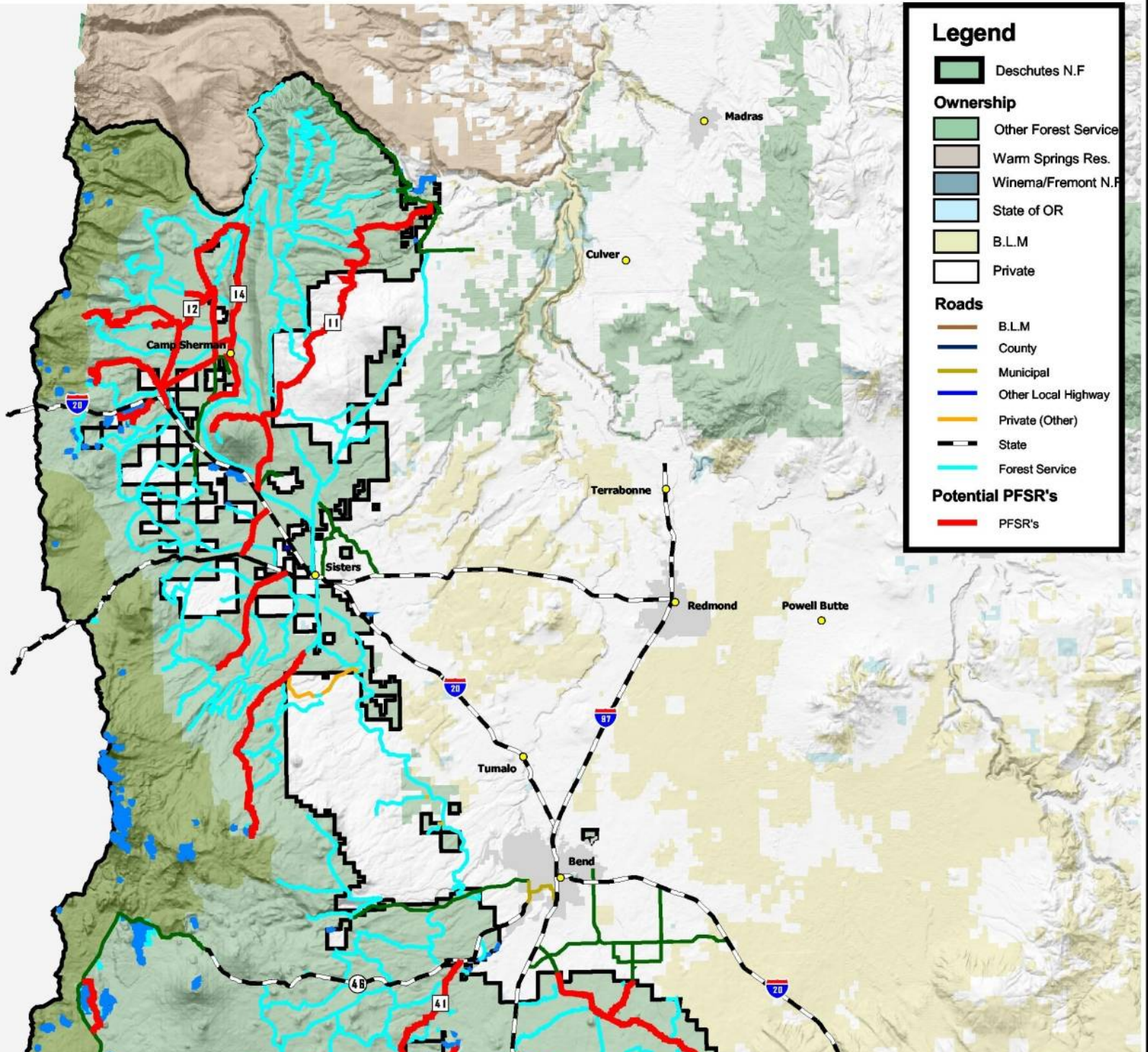
Legend

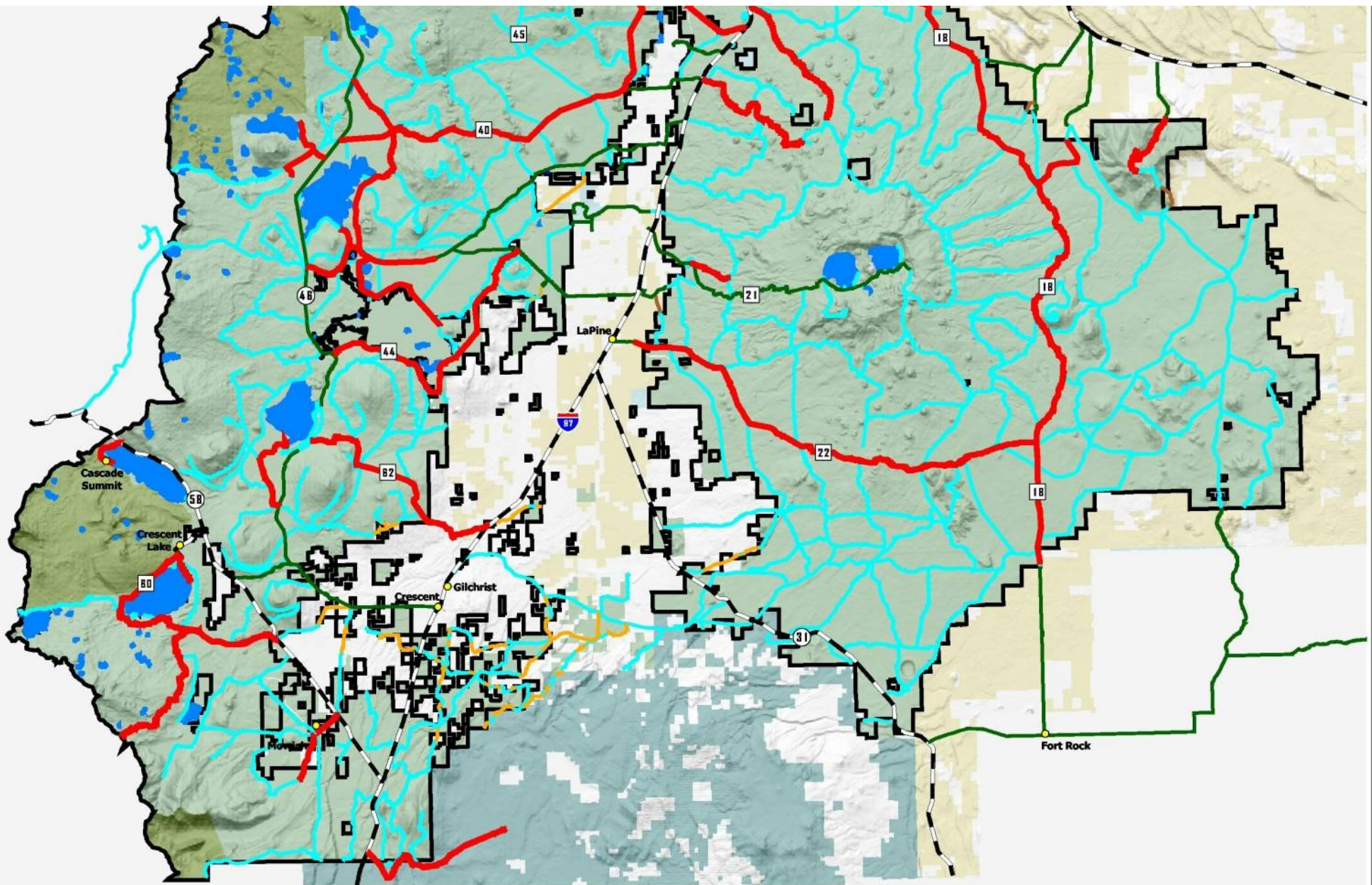
- Ochoco N.F.
- Ownership**
 - Other Forest Service
 - Warm Springs Res.
 - Malheur N.F.
 - State of OR
 - B.L.M.
 - Private
- Roads**
 - B.L.M.
 - County
 - Private (Other)
 - State
 - Forest Service
 - Forest Highway Road System



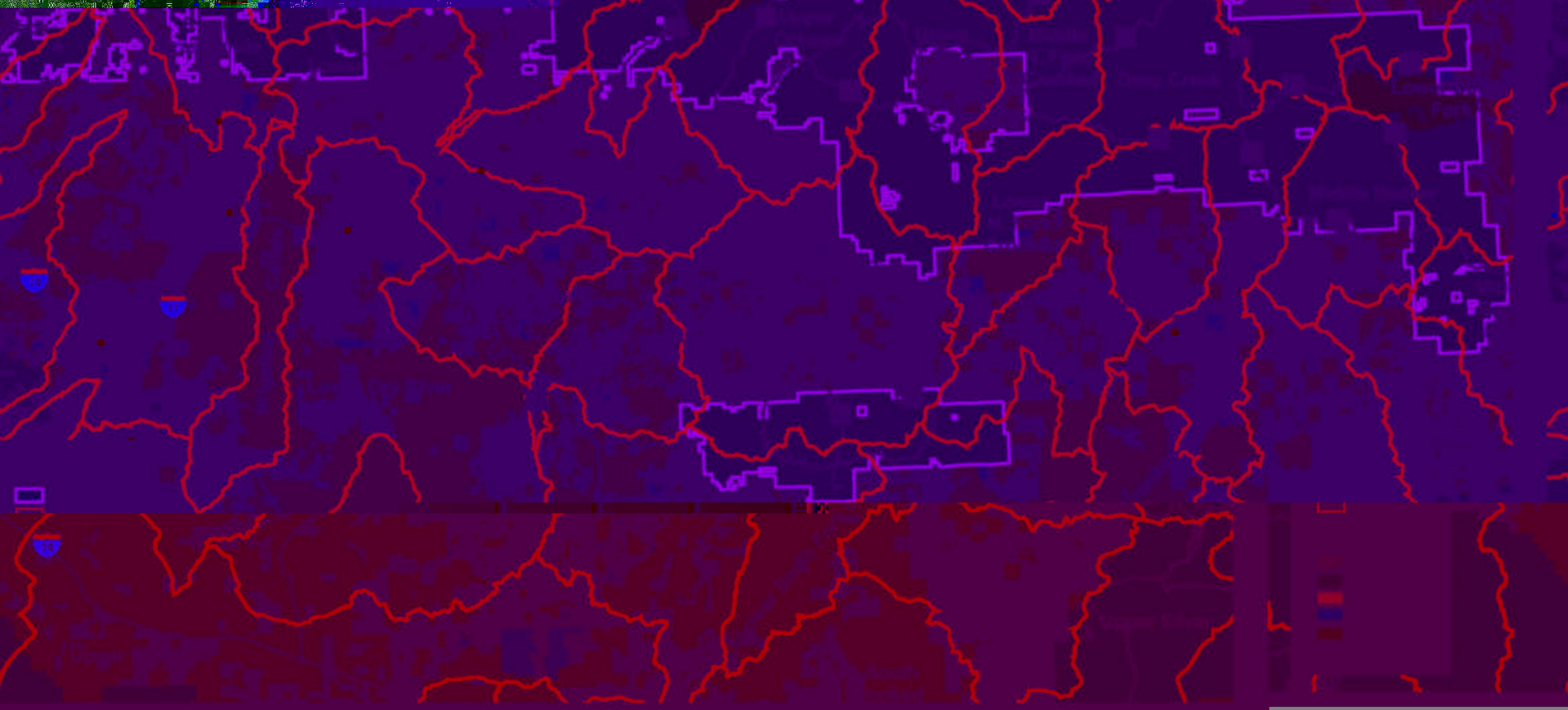
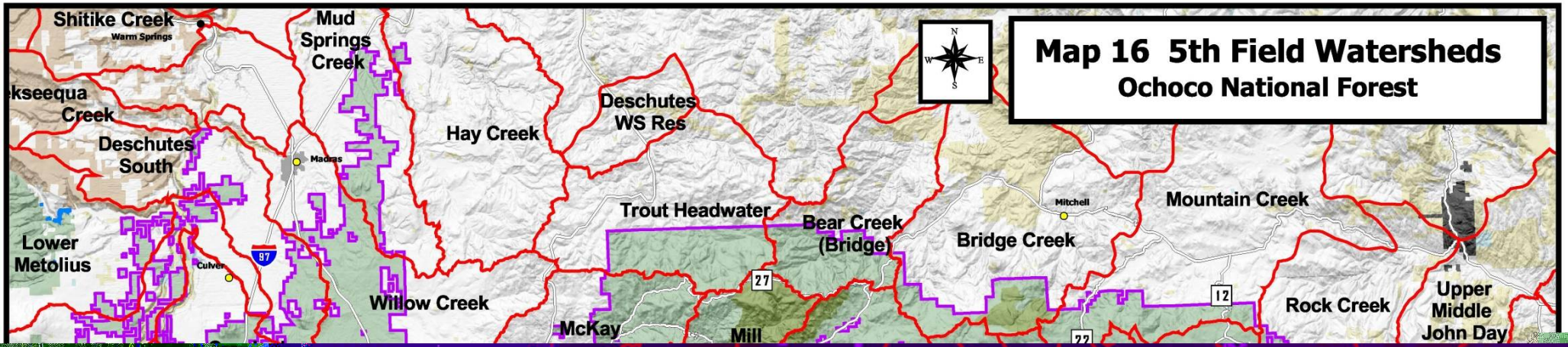
Map 14 Ochoco Potential Public Forest Service Roads System Ochoco National Forest

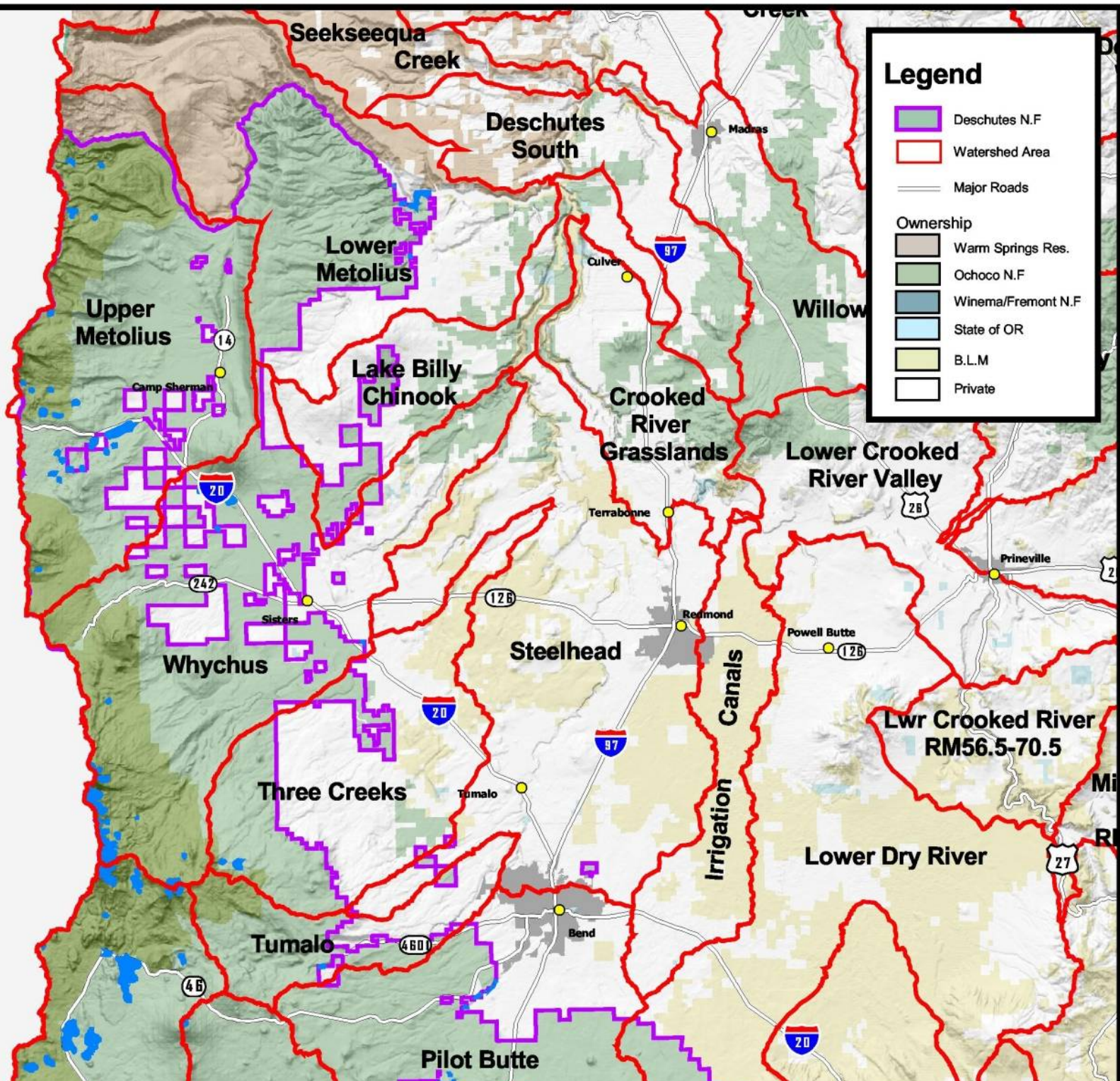


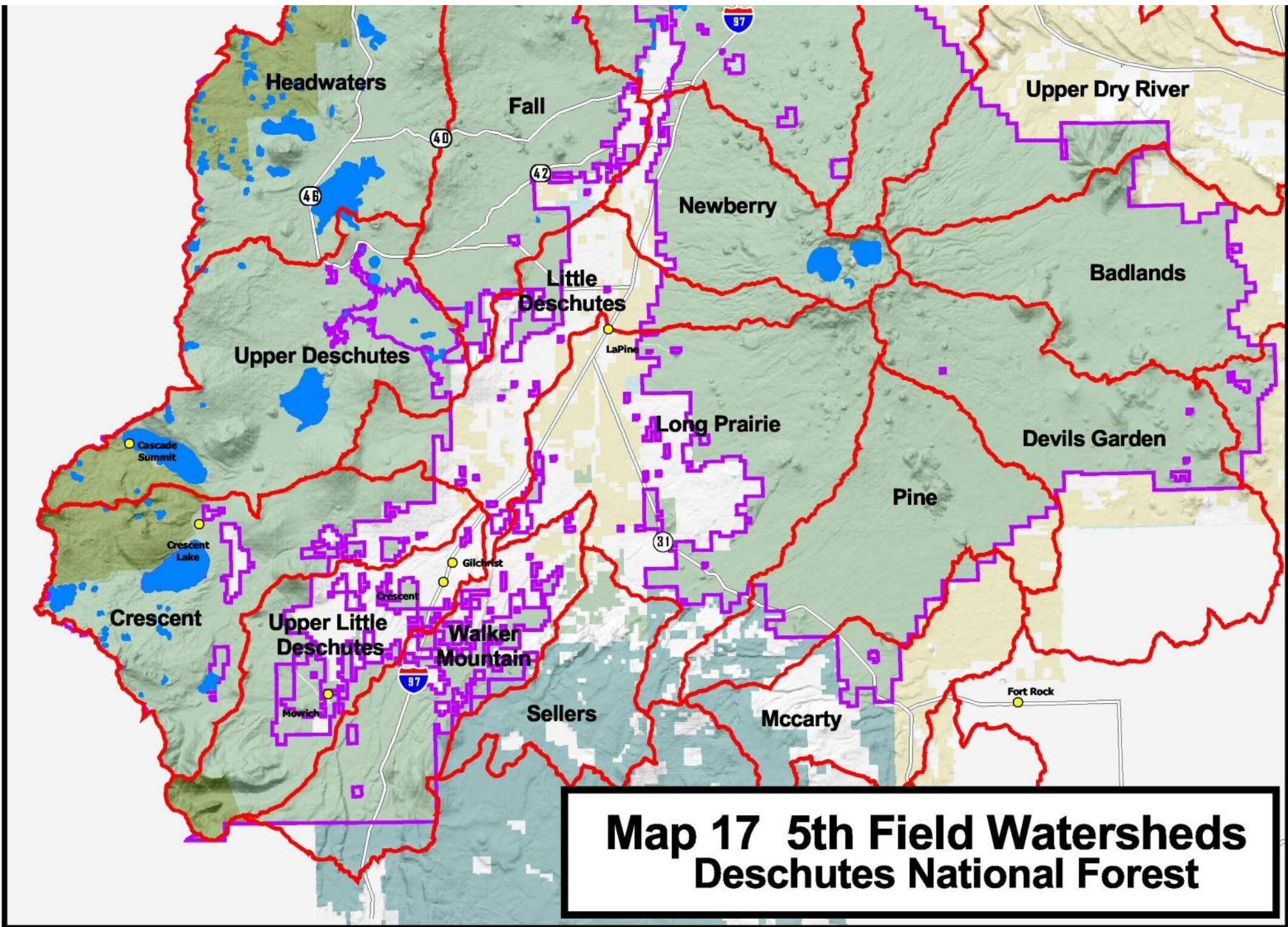




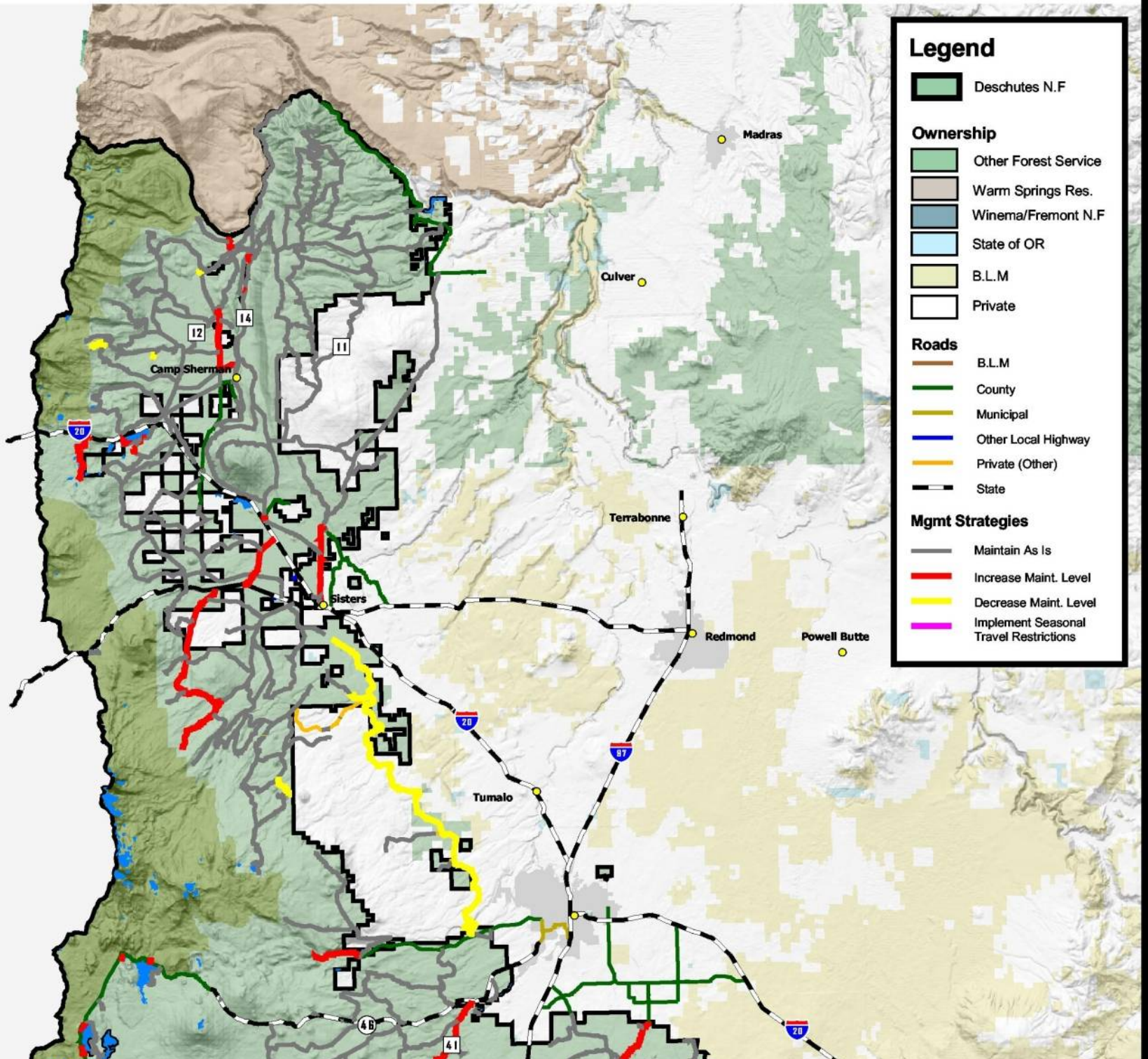
**Map 15 Deschutes Potential Public Forest Service Roads
Deschutes National Forest**

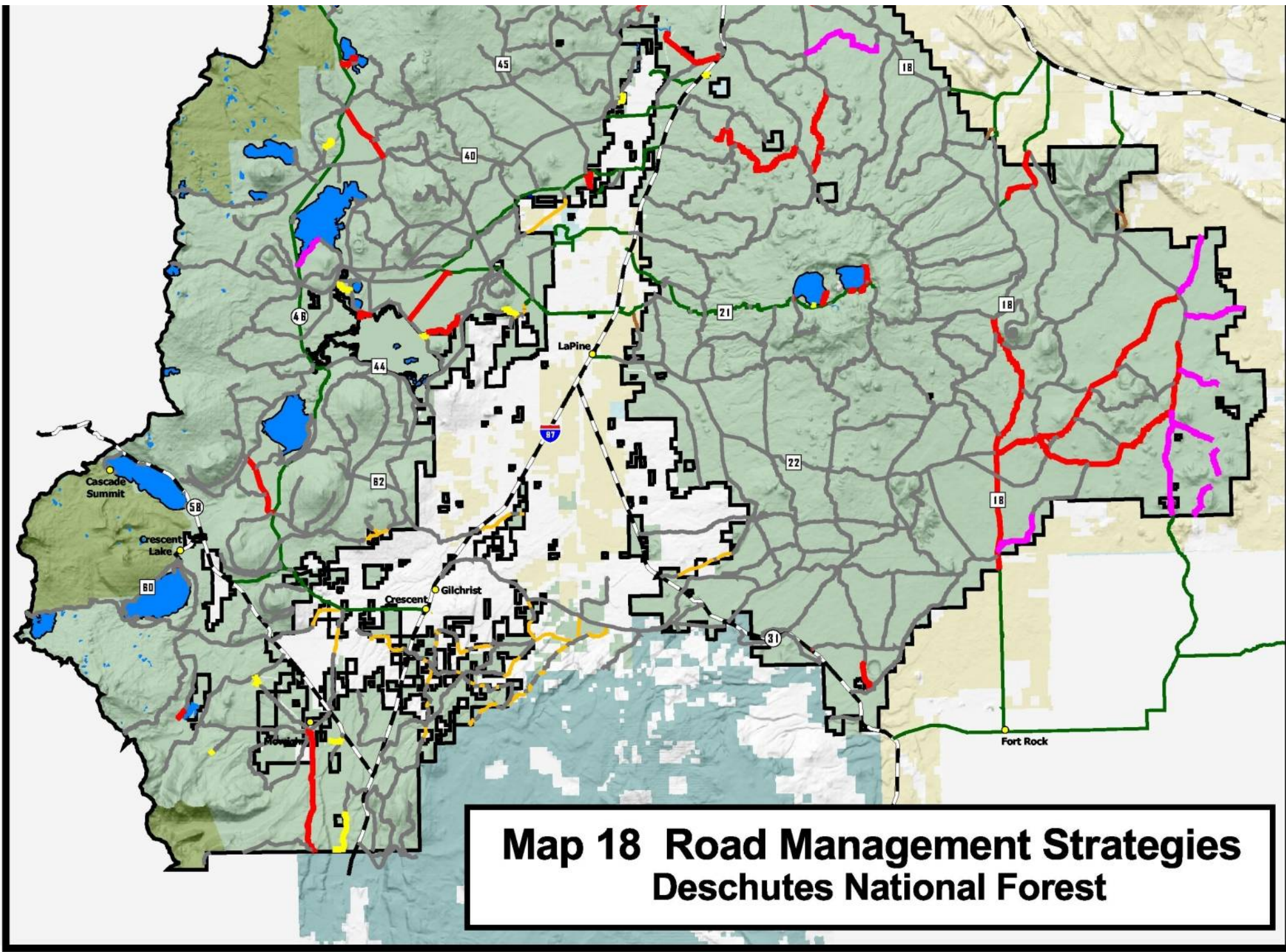






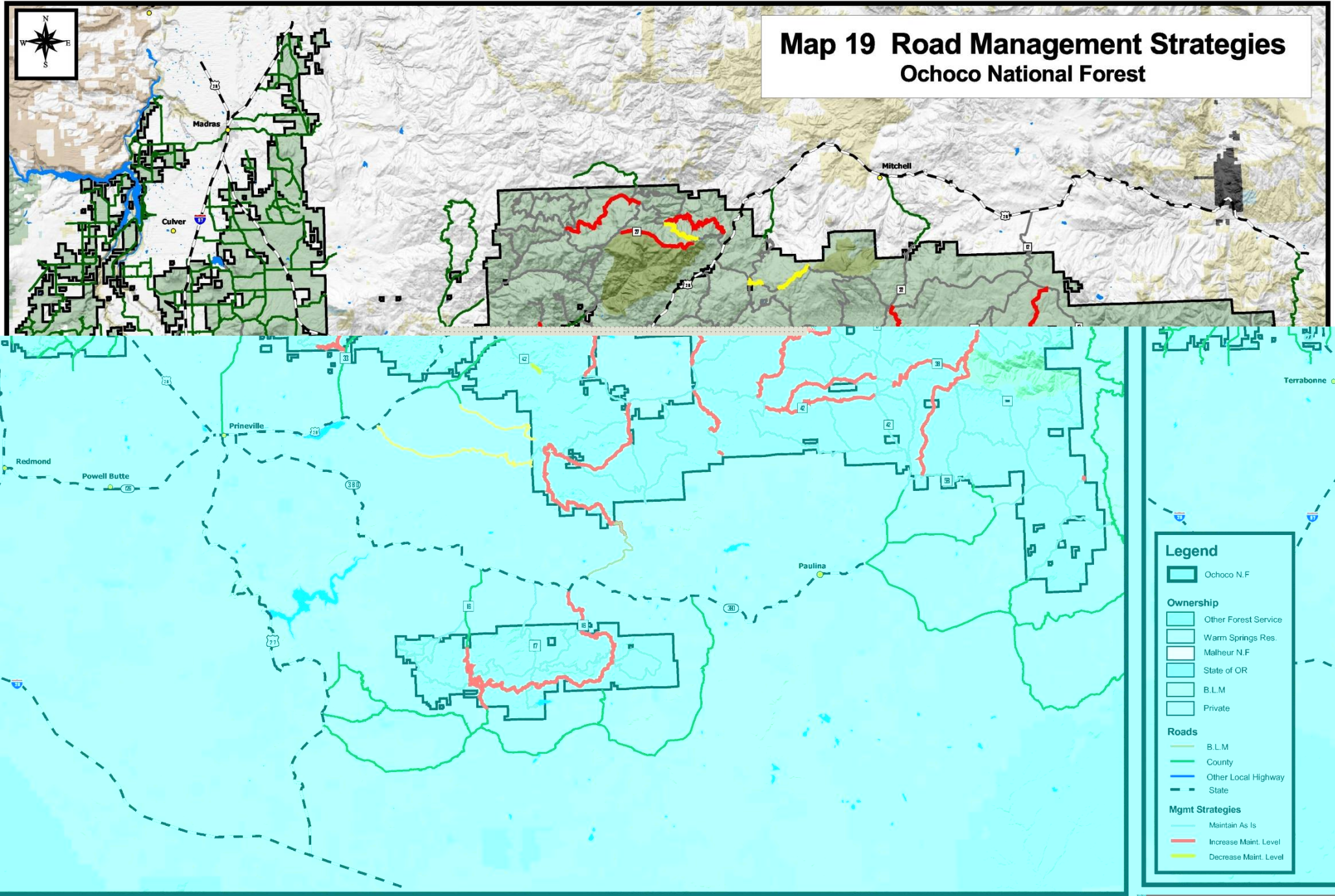
**Map 17 5th Field Watersheds
Deschutes National Forest**







Map 19 Road Management Strategies Ochoco National Forest



Legend

- Ochoco N.F.
- Ownership**
 - Other Forest Service
 - Warm Springs Res.
 - Malheur N.F.
 - State of OR
 - B.L.M.
 - Private
- Roads**
 - B.L.M.
 - County
 - Other Local Highway
 - State
- Mgmt Strategies**
 - Maintain As Is
 - Increase Maint. Level
 - Decrease Maint. Level

