United States Department of Agriculture
Forest Service

Zigzag Integrated Resource Project

Transportation Report

Prepared by:
Josh Marxen
Forest Transportation Planner

for:
Zigzag Ranger District
Mt. Hood National Forest

05/21/2020 Draft

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov .

USDA is an equal opportunity provider, employer and lender.

1.0 Introduction

Lack of road maintenance throughout this project area has had measurable detrimental effects on the Forest's transportation resource. As deferred maintenance continues to increase while annual road maintenance budgets decrease, the condition of system roads within the project area would continue to deteriorate over time. Road maintenance needs are likely to become road reconstruction needs, resulting in hazardous conditions and increased cost to taxpayers as well as fire suppression activities hindered. Forest access for travel, tourism, and recreation as well as safety for forest visitors are already negatively impacted and would continue in the absence of the road maintenance opportunity provided by forest management.

In this transportation report, I will show that the proposed treatments, with regard to the transportation resource, are consistent with direction from the Mt. Hood Forest Plan, as amended, as well as all applicable laws and regulations. Of the approximately 70 miles of system roads in the project area, approximately 46 miles would be maintained or reconstructed to facilitate safe haul. The Project Design Criteria (PDC) for this project for road reconstruction and maintenance include sediment and erosion control as well as protection of natural resources and implement the guidance of the Northwest Forest Plan. The Best Management Practices (BMPs) associated with this project together with the applicable road maintenance specifications (USDA, 2008) meet or exceed all requirements set forth by the State of Oregon for mitigating and minimizing environmental impacts of road maintenance and road reconstruction under OAR 629-625-0000 and per "Oregon Department of Forestry, State Forests Program, Forest Roads Manual", 2000. The proposed changes to Forest System Roads are appropriate and primarily consistent with the Travel Analysis Report (TAR) moving the road system toward the desired future condition.

Given these measures, the proposed treatments would result in increased effectiveness and overall value of the Forest's transportation system while correcting or mitigating detrimental effects on other resources.

Please note that temporary roads are not part of the Forest's permanent transportation system and are not addressed in this specialist report.

2.0 – Analysis Framework

2.1 - Methodology

Measurements and quantities shown in this report were compiled using data from the Region 6, Mt. Hood National Forest, INFRA database, the Transportation GIS Geodatabase, the District Roads and Topography Map, and measurements and observations taken in the field.

For a detailed discussion of the road classification system, the determination of road maintenance and reconstruction needs as well as how we determine needed changes to the forest transportation system can be found in National Forest System Roads, Maintenance and

Reconstruction with Vegetation Management Projects on the Mt. Hood National Forest[1] which is incorporated by reference. For the purposes of looking at changes to the national forest system in the planning are we looked at all of the roads and considered any new site specific information as we took a hard look at the road system in this area. We proposed changes as necessary considering all the information as well as management direction and current available science.

3.0 – Analysis of the Proposed Action

3.1 – Existing Condition

The Forest's transportation system provides multi-use access for trans-forest travelers, the recreating public, commercial users, and administrative users. The majority of roads within the analysis area have been in existence for more than 40 years. A detailed account of road miles and distribution of transportation in the analysis area is found in the Zigzag Integrated Resource Project Roads Table[2] which is incorporated by reference.

The roads within the analysis area generally have a pattern of use common to low-standard roads in the Mt. Hood National Forest with a few key differences. Peak use occurs in the summer with the influx of administrative, commercial, and recreational traffic. Summer recreational traffic in this area consists of heavy recreational use of the roads for various purposes primarily including access to day use sites and overnight camping uses for both dispersed and designated campgrounds, access to popular hiking trails. Also some roads are used as through routes for access to other areas of the forest. Summer commercial traffic consists primarily of log haul and other timber purchaser traffic necessary for operations including commuting of workers into the Forest and transport of heavy equipment. Some elevated use occurs in the late summer and fall with the commencement of the deer and elk hunting seasons. Winter brings lowered usage of the roads with arterial through-routes being used mostly by those seeking access to winter travel routes as well and as accessing other winter recreation. The anticipated future use patterns would most likely continue these trends.

Overall, the condition of roads within this planning area are in fair, moderate, or poor shape. Some system roads have begun to deteriorate to a point where use by passenger vehicles and commercial heavy haul vehicles is hazardous. For some roads, vegetative growth along roadsides has begun to encroach upon the road prism limiting sight distances around horizontal curves. Many of the stream crossing and drainage culverts on the road system in the project area, while originally sized for hydrologic capacity, are undersized for passage of runoff associated debris and become plugged on a frequent basis. Compounding this problem, many ditch lines and drainage structures along the roadways are filled with slough and slide material or are blocked by trees which have grown in excess of four inches in diameter, causing these drainage features to be inadequate and fail. Standing water in ditches either flow over the

[1] https://www.fs.usda.gov/nfs/11558/www/nepa/112557_FSPLT3_5298806.pdf
[2] https://www.fs.usda.gov/nfs/11558/www/nepa/112557_FSPLT3_5298809.pdf

roadway, causing surface erosion, or begin to percolate through the road base and subgrade causing potholes, sinkholes, and road slumps.

The paved and similarly surfaced treated roads that are part of the Forest's transportation system (i.e. not including State Highways) in this area suffer from slumping, severe cracking, potholing, or surfaces which are beginning to break apart entirely. Generally, the aggregate surfaced and improved (pit-run) roads in this area hold together very well in areas where the terrain is relatively flat and erosion is less of an issue, whereas in a few locations where steeper terrain prevails, these roads exhibit severe erosion characterized by loss of surface materials and delivery of sediment to streams.

Historically this area has been a heavy focus for decommissioning and closing roads and for that reason the roads in this area have previously been reduced to a minimal level and decommissioning a significant amount of roads in this area is not necessary. In some cases the decision to decommission in the past did not take into account all of the needs for a given road.

3.2 - Environmental Consequences

3.2.1 - No Action

No Commercial Haul of Materials

Heavy haul of commercial wood fiber is the most impactful action on the transportation resource, without commercial haul it would result in less traffic generated wear and tear on the roads within the project boundary. Wear and tear that would come from recreation and administrative use would continue to occur; normally from passenger vehicles. Since use would continue to occur on existing poor condition roads, there would be a longer-term detrimental impact to the transportation resource because current maintenance and reconstruction needs would not be addressed.

No Road Maintenance & Reconstruction Activities

No action would mean that no road maintenance would occur in the short term. Current road failures, drainage failures, and erosion control problems that have been identified within this road system would continue to persist.

Lack of road maintenance and reconstruction would result in a negative effect with respect to both safety and the environment. Road surface, road subgrade, and road base failures present physical hazards to drivers, reduce a driver's ability to maintain positive control of a vehicle, and increase the potential for the development of erosion hazards on road slopes including soil slumps and slides due to pooling of water and increased soil saturation in the road bed (USDA, 1994). Failed or poorly functioning drainage systems increase sedimentation in streams and waterways due to their failure to properly mitigate erosion. They also increase the likelihood of waterway contamination from vehicular fluids due to water being forced onto roadways prior to draining into natural stream courses. This is a general discussion of erosion and sedimentation,

greater detail on this subject can be found in the water quality report. Un-brushed roadways also present an additional safety hazard to road users due to decreased sight/stopping distance (AASHTO, 2004).

No Changes to the National Forest Road System

Road system status changes such as road closures would not occur and there would be no displacement with respect to the transportation system users. The current use pattern of roads within the planning area would not change. Commercial road use on this system would continue through the issuance of road use permits to facilitate ingress and egress for adjoining or in-held private lands. Volume of public use on this system would not change in the short-term, but could decrease slightly over time due to decreased navigability of the roads. Administrative use on this system would not change, although access would become increasingly difficult due to lack of road maintenance and lack of funding sources with the capability of appropriately addressing road reconstruction issues.

Road densities and road use designations would both remain unchanged with no action.

3.2.2 - Direct and Indirect Effects of Proposed Action

The proposed action would involve haul of commercial timber. While heavy haul of materials is the most impactful action regularly applied to the transportation resource, this action is expected to be limited in its duration and would be accompanied by increased frequency of road maintenance. The project would be implemented in an economically viable way. The value of the timber removed in this project is likely to be sufficient to cover the costs of the repair and maintenance items necessary to facilitate haul of materials generated by this project.

All roads used for haul would receive some type of road maintenance. The majority of roads used for haul would receive some type of reconstruction work that is considered beyond the definition of maintenance. Collector and primary haul routes would likely receive more road repairs and constructive improvement work than some others to accommodate heavy use. For a detailed discussion of maintenance and reconstruction see National Forest System Roads, Maintenance and Reconstruction with Vegetation Management Projects on the Mt. Hood National Forest[3] which is incorporated by reference.

Material Sources and Material Disposal Locations

Government sources of rock products in the local area would be the preferred method of supply for crushed surface or base aggregates used in road maintenance and reconstruction work. When government source material is used, existing quarry operation and development plans would be utilized. A multidisciplinary approach would be utilized and would be conducted in compliance with all National and State Clean Water Best Management Practices as well as all PDCs associated with this analysis.

[3] https://www.fs.usda.gov/nfs/11558/www/nepa/112557_FSPLT3_5298806.pdf

In the event that government source material cannot be used, commercial rock sources would be utilized. In order for this commercial product to be utilized on the Forest, local commercial sources would need to coordinate with the Forest Service to have their quarries or pits inspected by qualified Forest Service personnel and accepted as being reasonably free of organic material or seeds from noxious weeds or invasive botanical species of concern.

Changes to the National Forest Road System

Site-specific treatments would be tailored to site-specific conditions using one or more closure methods or treatments. For detail information on closure methods review National Forest System Roads, Maintenance and Reconstruction with Vegetation Management Projects on the Mt. Hood National Forest[4] which is incorporated by reference.

These road status changes are informed by the recommendations from the 2015 TAR (USDA, 2015) and serve to move the Forest transportation system toward its desired future condition. There are certain instances, however, where the proposed action deviates from past management decisions based on an analysis of the site-specific conditions.

Section 5.0 - Appendix presents the full list of road status changes that would occur with the proposed action and summarizes the treatment that each road would receive. Table 1 is a summary of the miles of road within the project area as a result of the proposed actions.

Table 1 - Proposed Action Road Status Changes

Road Status	Approximate miles
Active Decommission	0.4
Passive Decommission	0.4
Data Decommission	1.5
Close (move to ML 1)	6.5
Move from ML1 to ML2	1.9
Move from ML2 to ML3	1.6
Previously Authorized for Decommissioning moved to ML 1	0.7
Previously Authorized for Decommissioning moved to ML 2	1.8
Previously Decommissioned roads used as temporary roads	4.2

3.2.3 - Cumulative Effects

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

[4] https://www.fs.usda.gov/nfs/11558/www/nepa/112557_FSPLT3_5298806.pdf

The analysis area for cumulative effects includes the Forest Service system roads within the project area and the Forest Service system connected haul roads outside the planning area. This spatial boundary was chosen because haul uses the connected network of roads, not just within the planning area. The analysis period for the cumulative effects is over the next 3 years. For the purpose of the cumulative effects I used a qualitative approach with my own knowledge of road management, other specialists and managers as well as analyzing the Mt. Hood program of work to take into account all projects we may be aware of or anticipated road use or large projects in the future for the cumulative effects area.

In addition to other haul, there are several projects or uses that have been considered. Replacement of Aquatic Organism Passage culverts authorized under the 2018 Forest-Wide Aquatic Organism Passage Restoration Decision Memo[5] would likely occur over the next several years. A fish log acquisition project is occurring on along some of the roads in the project area that will haul fish logs. Any damage to the roads caused by that project will be repaired. Heavy recreation use is ongoing in this area and causes road deterioration. The intention with this project is to repair some of the roads sustaining damage to accommodate safe haul. There are several roads in this project area that have been identified for decommissioning in a separate EA that have not occurred yet but are likely to occur after this project is completed.

The proposed action, along with these foreseeable actions, would result in increased effectiveness of the Forest's transportation system while minimizing impacts to other resources. There would be no substantive cumulative effects because all projects that use roads also provide maintenance and repair commensurate with their use.

3.3 - Consistency with Management Direction

The proposed action, with respect to the transportation resource, has been reviewed for consistency with the Mt. Hood Forest Plan. The proposed action includes design criteria that ensure proper road use and maintenance specifications balanced with recreation use and access with proper seasonal operational restrictions to ensure resource protections. Therefore, the proposed action is consistent with the Forest wide Transportation Standards and Guidelines; FW-407 through FW-437, FW-451, and FW-452, pages Four–95 through Four–97.

The Forest-wide Roads Analysis (USDA, 2003) and the project specific transportation analysis documented in this report implements guideline FW-416.

All system road decommissioning decisions would be made following the guidance provided under FW-432.

All temporary roads constructed for project use that are not part of the recreational trails system would be rehabilitated and blocked and treated to meet or exceed the standards of FW-433 and FW-436.

[5] https://www.fs.usda.gov/project/?project=53634

3.4 – Summary of Effects

The proposed action, along with these foreseeable actions, would result in increased effectiveness of the Forest's transportation system while minimizing impacts to other resources. There would be no substantive cumulative effects because all projects that use roads also provide maintenance and repair commensurate with their use.

4.0 - References Cited

AASHTO. (2004). *Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials* (2004 ed.). Washington, D.C.: AASHTO.

USDA. (1990). *Land and Resource Management Plan: Mt. Hood National Forest.* Sandy, OR: USDA Forest Service.

USDA. (1994). *Slope Stability Reference Guide for National Forests in the United States* (Vol. 2). Washington, D.C.: U.S. Department of Agriculture.

USDA. (2002). *Cost Estimating Guide for Road Construction: Cost Guide Zone 5, Davis-Bacon Area 5* (2011 ed.). Corvallis, OR: USDA Forest Service, Region 6.

USDA. (2003). *Roads Analysis, Mt. Hood National Forest.*

USDA. (2008). *Forest Service Specifications for Maintenance of Roads in Timber Sales, Forest Service, Pacific Norwest Region.* Portland, OR: U.S.D.A. Forest Service.

USDA. (2015). *Travel Analysis Report, Mt. Hood National Forest.* Sandy, OR: USDA Forest Service.

5.0 - Appendix

Table 2. Proposed Action Deviations from the TAR and Previous Analysis

NFS Road Number	Approximate Miles	Previous Guidance	Proposed Action
1800026	0.35	TAR: Likely Needed Objective Maintenance Level: 1	Decommission
1800047	0.11	TAR: Likely Needed Objective Maintenance Level: 2	Decommission
1800048	0.29	TAR: Likely Not Needed Objective Maintenance Level: Decommission 2010 Bull Run Decommissioning EA: Decommission	Change to Objective Maintenance Level 2. This road Accesses a BPA tower
1800235	0.04	TAR: Likely Needed	Decommission
1820017	.05	TAR: Likely Needed Objective Maintenance Level: 1	Decommission
2600073	0.15	TAR: Likely Not Needed Objective Maintenance Leve: Decommission	Change to Objective ML 2. Road is PGE Right of Way

NFS Road Number	Approximate Miles	Previous Guidance	Proposed Action
		2010 Bull Run Decommissioning EA: Decommission	
2600086	0.43	TAR: Likely Not Needed Objective Maintenance Leve: Decommission 2010 Bull Run Decommissioning EA: Decommission	Change to Objective ML 2. Road is PGE Right of Way
2613031	0.4	TAR: Likely Needed Objective Maintenance Level: 2	Decommission
2613032	.14	TAR: Likely Needed Objective Maintenance Level: 2	Decommission
2613033	0.06	TAR: Likely Needed Objective Maintenance Level: 2 Rocky EA: ML2 admin use only	Decommission
2632041	0.02	TAR: Likely Needed Objective Maintenance Level: 1	Decommission
2632140	0.38	TAR: Likely Needed Objective Maintenance Level: 1	Decommission
2656037	0.31	TAR: Likely Needed Objective Maintenance Level: 1	Decommission
2656903	0.2	TAR: Likely Needed Objective Maintenance Level: 2	Decommission past junction with 053
5000015	0.12	TAR: Likely Needed Objective Maintenance Level: 1	Decommission
5000120	0.37	TAR: Likely Not Needed Objective Maintenance Level: Decommission 2008 Road Decom for Aquatic Resources EA: Decommission	Change to Objective ML 2. Road is PGE Right of Way
5000121	0.14	TAR: Likely Not Needed Objective Maintenance Level: Decommission 2008 Road Decom for Aquatic Resources EA: Decommission	Change to Objective ML 2. Road is PGE Right of Way Decommission past 122 junction at approximately MP 0.14
5000122	0.19	TAR: Likely Not Needed Objective Maintenance Level: Decommission 2008 Road Decom for Aquatic Resources EA: Decommission	Change to Objective ML 2. Road is PGE Right of Way
5000123	0.13	TAR: Likely Not Needed Objective Maintenance Level: Decommission 2008 Road Decom for Aquatic Resources EA: Decommission	Change to Objective ML 2. Road is PGE Right of Way
5000124	0.05	TAR: Likely Not Needed Objective Maintenance Leve: Decommission 2008 Road Decom for Aquatic Resources EA: Decommission	Change to Objective ML 2. Road is PGE Right of Way