

# **Mt Ashland LSR Project ROADS ANALYSIS REPORT**

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## **Abstract**

The Mt. Ashland Late-Successional Reserve Habitat Restoration and Fuels Reduction Project (Mt Ashland LSR Project) is being developed to promote and maintain late-successional habitat. Vegetative treatments are proposed to accomplish the objective. Inherent in implementation of the action alternatives will be the use of area roads for access; actions on area roads provide opportunities to further project objectives.

The District Ranger recognized this opportunity to step back and consider area roads and their management and whether any changes would better meet resource management objectives and management direction; and whether changes (road actions) would be reasonable to integrate in the development of the Mt Ashland LSR Project. Inventory, condition assessment, and analysis considered project area roads in four issue groups: (1) local roads already a part of the forest transportation system; (2) existing (unauthorized) roads in the recently acquired "Section 30"; (3) other unauthorized roads in the project area; and (4) proposed temporary spurs.

Ensuing steps in the project roads analysis included confirmation of and prior recommendations made in the *Klamath National Forest Forest-Wide Roads Analysis* (Forest-wide RAP) (June, 2002), preliminary recommendations for analysis area roads, local and unauthorized roads. Preliminary recommendations for roads within the Mt Ashland LSR Project Area that met project objectives were moved forward through project development and the NEPA process of the Mt Ashland LSR Project. No long term need for proposed temporary spurs were identified.

This report documents the Mt. Ashland LSR Project roads analysis process.

## **Management Direction**

### Road analysis

The January 12, 2001, Forest Service Transportation Final Rule, Policy, and Notice along with subsequent directives and the December 16, 2003 Amendment to Chapter 7710 of Forest Service *Manual (FSM) 7700 – Transportation System* directs all units of the National Forest System to conduct a Forest-scale roads analysis (7712.13). This was done by the Forest and documented in the Forest-wide RAP.

Project-scale road analysis may be indicated and integrated with NEPA analysis to inform project decisions. In her Feb. 20, 2002 letter, the Klamath National Forest Supervisor included road construction or additions to the road system, decommissioning, changes in access, and changes in status (with exceptions for temporary roads and short extensions of existing roads) as triggers for roads analysis. But still "roads analysis below the Forest scale is not automatically

required, but may be undertaken at the discretion of the responsible official (FSM 7712.13c),” who will also determine “the degree of detail that is appropriate and practicable (FSM 7712.13).”

*Road System Management* includes the identification of the desired road system and the identification of unneeded roads as provided in the new Travel Management Rule [36 CFR Parts 212, 251, 261, and 295 (July 1, 2006)]:

(1) ... the responsible official must identify the **minimum road system** needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. In determining the minimum road system, the responsible official must incorporate a science-based roads analysis at the appropriate scale and, to the degree practicable, involve a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. The minimum system is the road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR part 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.

(2) ... Responsible officials must review the road system ... and identify the roads ...**that are no longer needed** to meet forest resource management objectives and that, therefore, should be decommissioned or considered for other uses, such as for trails. Decommissioning roads involves restoring roads to a more natural state. *Activities used to decommission a road* include, but are not limited to, the following: reestablishing former drainage patterns, stabilizing slopes, restoring vegetation, blocking the entrance to the road, installing water bars, removing culverts, reestablishing drainage-ways, removing unstable fills, pulling back road shoulders, scattering slash on the roadbed, completely eliminating the roadbed by restoring natural contours and slopes, or other methods designed to meet the specific conditions associated with the unneeded road. Forest officials should give priority to decommissioning those unneeded roads that pose the greatest risk to public safety or to environmental degradation. [ 36CFR212.5(b) ].

The Travel Management Rule also provides changes in road terminology: see current definitions of Forest Transportation System Terms and Concepts in Appendix A. Road terminology definitions in FSM7700 (December 16, 2003) are not current with the Travel Management Rule. Proposed replacement of FSM 7700 integrating the Travel Management Rule with roads analysis and travel planning was published for comment in the Federal Register on March 9, 2007.

### Forest Plan – Land Allocations

The Mt. Ashland LSR Project is within Special Habitat – Late Successional Reserves (MA5) and Riparian Reserve (MA10) land allocations in the Klamath National Forest Land and Resource Management Plan with transportation management guidance on pages 4-86 and 4-91. The Forest program emphasis goal for roads that applies to all land allocations is to provide an economical, safe, and environmentally sensitive transportation system. Maintenance and restoration of existing roads are to be emphasized, rather than constructing new roads.

## The Analysis Process

The process for this project-level roads analysis follows current direction (FSM 7710; December 16, 2003) including guidance provided in the Roads Analysis: Informing Decisions About Managing the National Forest Transportation System (August, 1999). Road analysis is a six-step process which includes analysis set-up; situation description; issue identification; benefit, problem, and risk assessment; identified opportunities and priorities; and reporting. Because this road analysis is site-specific, an extensive road inventory effort and condition assessments

supplemented known information. This analysis uses current terminology as provided by the Travel Management Rule (36CFR 212.1).

This roads analysis began in the winter of 2005. However, condition assessments and inventories of unauthorized roads began during the 2004 field season in support of the Mt Ashland LSR Project. Although all roads were included in the analysis, this analysis focuses on local Forest Service System Roads (Maintenance Levels of 1 and 2) and unauthorized roads. The Forest-wide RAP completed in 2002, evaluated maintenance level 3, 4, and 5 roads throughout the forest.

Analysis Set-Up. The **analysis area** for the project-scale roads analysis was identified before the Mt Ashland LSR Project Area was finalized and so the analysis area is larger than the Project Area. The analysis area is completely within the Mt Ashland LSR. It includes the Mt Ashland LSR Project Area and the area immediately south of the Project Area to the LSR boundary. The area outside the Project Area includes portions of the Deer-Beaver Creek, Hungry Creek, and Soda-Bumblebee 7<sup>th</sup> field watersheds. The analysis area is bounded to the south and east by the LSR boundary; to the north by the Siskiyou Crest; and to the west by the ridge running south of Siskiyou Gap and a short segment of the LSR boundary. The LSR boundary along the southern extent of the analysis area is roughly approximated by Forest Road 11 and Hungry Creek.

An **interdisciplinary team** (IDteam) was identified to complete the initial resource ratings and recommendations independent of the Mt Ashland LSR Project IDteam. Field work began in the summer of 2004 and continued through the 2006 season. Many of the IDteam members had professional knowledge from more than 10 or 20 years of work in the analysis area. Subsequent meetings and clarification included IDteam members from the Mt Ashland LSR Project

**Inventory and condition assessment** of system roads was substantially completed in 2004. Inventory and condition assessment of unauthorized roads and location of temporary spurs has been on-going through the field season 2006. In addition to using known information, roads were driven and walked for field surveys and verification; GPS (Global Positioning System) and ortho-quads were used to incorporate spatial information with Forest GIS (Geographical Information System) corporate data base.

**Issue identification** was an iterative process developed from an intuitive sense of opportunities (from decade(s) of professional experience in the analysis area) identified by the IDteam within parameters defined and focused by the District Ranger.

**All roads** in the analysis area were assessed, only those changes recommended for roads within the Mt Ashland Project Area are **prioritized** for implementation and considered for incorporation in the Mt Ashland LSR Project, thereby concluding the road analysis process upon documentation/ reporting. Road actions incorporated into the Mt Ashland LSR Project were included in the public scoping efforts of the Mt Ashland LSR Project **NEPA analysis**

The Situation. The Mt Ashland LSR project area is well roaded. [Open Road densities exceed 4 miles/ square mile in close to 1/3 of the Long John Creek 7th field watershed.] There are 78.9

miles of National Forest System (system) roads and 22.3 miles of mapped unauthorized roads within the project area. Of the system roads, 6.8 miles are permanently closed (maintenance level 1), 45.1 miles are open for high clearance vehicles (maintenance level 2), and 27 miles are open for passenger vehicles (maintenance level 3). Much of the road system in the project area was built as railroad grades between 1920 and 1935. The railroad grades were built west from Four Corners (intersection of 40S06, 41S06, and 41S07) with the idea that the logs harvested would come back to Four Corners and then down to Hilt for milling. The railroad grades extended as far west as Big Red Mountain Creek. The railroad grades crossed major creeks with trestles and small creeks with Humboldt crossings (logs placed in the bottom of the draw and fill placed over the logs). The trestles have been replaced with bridges or large culverts, but many of the Humboldt crossings remain. After the railroad logging, the road system was extended to provide access to the Siskiyou Crest and down to Beaver Creek; roads were also built to access timber that was not railroad logged. The last road constructed in the project area was a timber access spur 0.5 mile long off of the 41S09 road, built in 1988. The existing road system provides access to most all of the project area and has received continuous use since the late 1940s. The system roads are very stable with few if any problem spots; there is little sediment coming off of the roads in the project area. The road system will function for commercial use with only maintenance.

The unauthorized roads in the project area are mostly old logging roads, abandoned railroad grades, or user created roads to camp sites or water sources. Most of the unauthorized roads are closed and re-vegetated, but the ones to camp sites and water sources are open to vehicle use. In recent years, OHV riders have been opening existing unauthorized roads to OHV use.

The southern extent of the analysis area beyond the Project Area is also well roaded with converted old railroad grades and old logging roads. In the entire road analysis area there are 115.09 miles of system roads, 23.42 miles of inventoried unauthorized roads, 2.84 miles of private roads, and from 2.27 miles (Alternative 5) to 6.86 miles (Alternative 2) of temporary spur construction proposed for the Mt Ashland LSR Project.

### The Issues.

(1) Local National Forest System roads. Open Road densities are high over much of the analysis area; exceeding 4 miles/ mile<sup>2</sup> in the northern half of the Long John Creek 7<sup>th</sup> Field Watershed. If the high open-road-densities are reduced, potential noise disturbance of susceptible late-successional species would also be reduced. Are there any local National Forest System roads in late-successional habitat or potential late-successional habitat that could be closed year-round?

(2) Disposition of the existing roads in the recently acquired section, Township 40 South, Range 1 East, Section 30, Willamette Meridian. What does the minimum road system look like in Section 30: which roads should be placed on the Transportation System; which roads should be decommissioned? Specifically, which of the existing roads are important for long-term access? Which of the existing roads provide opportunity for habitat rehab (with their decommissioning) and/ or are creating adverse watershed effects?

(3) Unauthorized roads in the project area generally. Unauthorized roads not needed for long-term management of National Forest Lands should be decommissioned. Are any unauthorized

roads important to managing dispersed recreation, water access, or strategic in fire/ fuels management? Are any mapped unauthorized roads in fact private roads?

(4) Proposed temporary spurs. Would any of the temporary spurs proposed under the Mt Ashland LSR project provide for needed long-term access?

Assessment of Benefits, Problems, and Risks. Between November 2004 and February 2005, resource specialists met individually and/ or in single resource groups with the analysis coordinator to discuss their knowledge of roads within the analysis area. This included access needs, identification of roads with highlighting resource concerns. For reference, to provide additional context, and refresh institutional memory, related prior analyses were also reviewed during this period.

The full road analysis IDteam met on March 2, 2005 to assess benefits, problems, and risks of each system road and each unauthorized road in the analysis area and to make preliminary recommendations if management changes were indicated. The eleven specialists present represented the following seven resource areas: wildlife, fisheries, hydrology/ earth sciences, fire/ fuels, silviculture/ timber management, engineering/ road management, and recreation/ lands.

The review of each system road included consideration of its relationship to the management of each resource: access needs for lands, recreation, fire/ fuels, or silvicultural treatments; the road's current or indicated management or discrepancies; and potential adverse resource effects to hydro/earth, fisheries, and wildlife resources. Additional comments were recorded to document special circumstances; where access needs or adverse effects didn't fit into the defined categories; or to identify maintenance opportunities. Current road use, maintenance problems, and concerns were discussed.

The review of each unauthorized road considered whether it was important for managing dispersed recreation, water access, strategic in fire / fuels management, or provided the sole area access (Section 30).

Temporary roads proposed for the Mt Ashland LSR Project were reviewed as a group. None were needed for long term management.

The tables *Mt Ashland LSR Pjt RAP – System Roads* (Mar 13, 2005), *Mt Ashland LSR Pjt RAP – Unclassified (sic) Roads* (Mar 8, 2005), and *Mt Ashland LSR Pjt RAP – possible temp spurs* (Mar 3, 2005), and the September 16, 2005 letter to the District Ranger document the March 2, 2005 meeting and are available in the project files. *Mt Ashland Project Roads Analysis – Preliminary Recommendations – Changes from March 2, 2005 to June 1, 2006* documents the iterations through to current recommendations, also available in the project files.

Describe Opportunities and Set Priorities. Opportunities for each local and unauthorized road were identified through consideration of the assessment of benefits, problems, and risks at the March 2, 2005 interdisciplinary meeting. Subsequent field review, correction of mapping errors, IDteam meetings of August 31, 2005 and March 28, 2006, and clarification of management

objectives from the District Ranger resulted in the Recommended Road Actions map dated June 1, 2006. Recommended management changes for roads expected to be used in the Mt Ashland LSR Project were prioritized for implementation and included in project development. The changes are grouped into four primary issue areas. Preliminary recommendations carried forward as road actions in the Mt Ashland LSR Project are identified by **bold font**.

Recommendations from Forest-wide RAP. Recommendations from the Forest-wide RAP to increase user comfort on Forest Roads 11 and 20 was confirmed by the interdisciplinary team. “No-change” in the management of roads 40S15, 40S16, 40S30, and 41S15 was also confirmed. Reducing the management level of 40S12 as recommended by the Forest-wide RAP was not considered in this analysis.

#### (1) Local National Forest System Roads.

- Decommission roads no longer needed for long-term management: 40S15B, **40S20** - convert first ¼ mile to trail (PCT), and 48N30 - partial: from junction 41S07 to the railroad grade.
- Close year-round to reduce open-road densities: Roads recently opened for silviculture treatments where recreational use has not yet reestablished in the high road density area in the northern half of the Long John Creek 7<sup>th</sup> field watershed – **40S09, 40S10 (partial), 40S13A, 40S15A, 40S16A**; Road enters private land and has no reasonable turn-around, also needs coordination with Special Use Permit – **41S13**; blocked roads outside of the Project Area, maybe suitable for decommissioning after silvicultural treatments in accessed stands, analyzed under other project RAPs – 41S07A currently blocked with large boulders, but technicaly open (decomm recommended in *Beaver Project RAP*), 41S11, this road is also accessed overland from the parallel road above, 41S07, by off-highway vehicles (improve in *Beaver Project RAP*), and 48N10 which has multiple substantial washouts (decomm in *Uptown Project RAP*).
- Seasonal Closure – Change to seasonal closure and consider year-round closure 48N30, 48N30A; and consider decommissioning 48N23. There was not clear consensus of the IDteam on any of these three roads. These roads are in high road density areas, but there are also established recreational and traditional uses along these roads, the railroads grades (48N30, 48N30A) are stable, and although 48N23 runs up a ridge it is shaped well and drains well. All these roads are outside the Project Area, so are not prioritized for action and further discussion was tabled. Note the portion of 48N30 with potential for resource damage has been recommended for decommissioning.

(2) Disposition of Existing Roads in Section 30. Unauthorized roads total 7.82 miles in this newly acquired section that was logged prior to National Forest acquisition. The unauthorized roads are continuations of system roads 40S09, 40S10, and 40S30 that extend across the section, and numerous spurs. There are opportunities for rehabilitation of the alpine meadow in the NW ¼ section in the headwaters of Grouse Creek and to restore stream channels in the SE ¼ section. Approximately 160 acres of this section are administered by BLM, actions affecting BLM access will need to be coordinated with them.

Only 0.88 mile of the 7.82 miles of unauthorized roads in Section 30 would be used for project implementation (Alternatives 2 and 4) and are therefore prioritized for implementation, SEE

**bold** below under *Decommission unauthorized roads after project use*. Implementation of the other recommendations other road segments is deferred to separate project analyses.

- *Decommission unauthorized roads after project use* (Alternatives 2 and 4) in the SW ¼ section accessing and on the ridge between Grouse and Long John Creeks. They are not strategic for fire/ fuels access in the long-term: **40S09.1A, 40S09.1A1**.
- *Decommission other unauthorized Roads*. Potential meadow rehab includes roads 40S09.1 segment north of BLM, 40S09.1B, 40S09.1C, 40S09.1D; and 40S10.1 segment past junction with 40S10.1A (mostly on BLM lands); potential stream channel restoration - initial best cost/ benefit work may be removal of road prisms in the three large crossings in the SE ¼ section on roads 40S10.1A and 40S10.1A1; on parched steep, southern exposure in the NE ¼ section 40S30.1, 40S30.2 segment past junction with 40S30.2A, and 40S30.2A.
- *Place Roads on System* when need for long-term access out-weighs potential costs. 40S09.1 segment - extend 40S09 across BLM to National Forest System lands to provide access into the NW ¼ section. 40S10.1 segment and 40S01A segment – extend 40S10 into section 30, follow 40S10.1 to 40S10.1A and continue out 40S10.1A, ending before first crossing to provide access into the SE ¼ section. 40S30.2 - place the flat grade segment of this spur road on the system to provide access into the NE ¼ section, work will be required to render it passable.

### (3) Other Unauthorized Roads.

- *Place Existing Unauthorized Roads on System* where they would facilitate long-term resource management. Two roads would facilitate the management of existing recreational use: the southern segment of **40S16.1** used regularly as a campground near the confluence of Deer and Beaver Creeks, and the lower segment of **41S15.1** used as a campsite and parking for the Cow Creek Trail. The user created road that provides access to a water source lower in the drainage is **40S16.6**. The road constructed along Doe Peak Ridge, **40S06.2**, provides strategic access for implementation of the Mt Ashland LSR Project, and will continue to provide strategic access for fire/ fuels management after the project.
- *Corrected Mapping Errors*. Road 20.1 is a campsite spur in the Mt Ashland Campground and should not be tracked as a separate facility. 20.3 is on private land at the NW edge of the analysis and project areas, project access may need to be coordinated with private owner. 41S07.2 is outside the project area, use by the adjacent private landowner is authorized under a Special Use Permit. 41S13.1 is within the Project Area, coordination with adjacent private landowner will be necessary for project use, resolution of its status is deferred to the lands function. 41S15D.1 appears to be located on Private land, and needs field verification.
- *Decommission Road and Convert to Trail*. One segment of **41S15.2** is recommended to become a system road (access to the Cow Creek Trail), see above, the remaining segment is recommended to be decommissioned and converted to a trail.
- *Decommission all other unauthorized roads*. Actions proposed for roads used for the Mt Ashland LSR Project would be open, use, hydrologically stabilize, and close (denoted in **bold** for Alternative 2 (Jan 2007), fewer roads are included in Alternatives 4 and 5): **40S09.1A, 40S09.1A1, 40S09.2, 40S12.1, 40S13.1, 40S13.2, 40S13A.1, 40S14.1, 40S14.2, 40S14.3, 40S16.1 segment, 40S16.2, 40S16.3, 40S16.4, 40S16.5 segment, 40S16.5A,**

**40S16.5B, 40S20.1, 40S20.1A, 41S07.1, 41S07.3, 41S09A.1, 41S10.2, 41S10.3, 41S15.1 segment, 41S15.3, 41S15.3A, 48N30A.1, 48N37.1.**

(4) Proposed Temporary Spurs are not needed for long-term management of National Forest Lands. They would be constructed, used, and decommissioned as part of the Mt Ashland LSR Project. There are no preliminary recommendations to further consider managing any of these temporary roads as National Forest System roads.

Table 1 provides a comparison between existing and recommended road management in the road analysis area. Table 2 summarizes the recommended changes for road management in the analysis area by issue group.

Table 1. Road Management within the Mt Ashland LSR Roads Analysis Area.		
Road type	Existing Mgmt	Recommended Mgmt
Unauthorized	23.42	0.00
Private	2.84	3.83
National Forest System - ml 1	9.37	23.73
National Forest System - ml 2	58.51	46.40
National Forest System - ml 3	45.52	45.52
National Forest System - ml 4	0.35	0.35
County		0.00
<b>Total Miles of Road</b>	<b>140.01</b>	<b>119.83</b>

Table 2. Recommended Road Management Changes in Mt Ashland LSR Roads Analysis Area.		
Issue Group	Action	Miles
Local National Forest System Roads	Close Year-Round	12.58
	Decommission	2.23
Unauthorized Roads in Section 30	Place in service as National Forest System road, Seasonal Closure	1.20
	Place in service as National Forest System road, Year-Round Closure	0.85
	Decommission	5.77
Other Unauthorized Roads	Place in service as National Forest System road, No Closure	0.45
	Place in service as National Forest System road, Year-Round Closure	2.83
	Authorize use under Special Use Permit	0.99
	Decommission	17.95
<b>Total miles of road management changes:</b>		<b>44.85</b>

## Economic Assessment of the Road System

**Vegetation Management** - Management activity to promote and maintain late successions stand characteristics is facilitated by vehicle access, in large part by reducing implementation costs and improving safety. The Mt Ashland LSR Project would accomplish a substantial amount of the silvicultural and fuels management activity expected in the foreseeable future, the next 20 to 30 years. Foreseeable future actions include maintenance of plantations and Defensible Fuels Profile Zones (DFPZ) with underburning, mastication, commercial and pre-commercial thinning. Rangeland use and permit administration is another management activity which occurs in the analysis area. These management activities put money into the local community through local contractors and commodities produced. Special forest products such as firewood collection (dead and down logs between August and January) also create additional cash flow for local and regional communities when placed into the retail and wholesale markets. Revenues from the sale of these commodities are used to offset management costs such as the cost of road maintenance. In times of high timber and cattle market values, these revenues can help offset some of the higher associated roads system costs, at least for the short term.

**Fire Suppression** - There is no accurate way of estimating the monetary value of the road system in fire suppression activities. Road access is a key element of successful fire suppression, however. The current trend of wildfire suppression costs for large fires suggests that in the short-term, while we work toward reducing potential fire severity in the LSR by establishing DFPZs, the value of the road system in fire suppression activities could reach millions of dollars. In fact, this figure could prove to be accurate from just one large wildfire, which without successful suppression from initial attack could reach thousands of acres and consequently millions of dollars.

**Recreation , Public & Special Uses** – There is heavy recreational use along the crest for skiing and other snow activities during the winter, and for hiking, cycling, wild flower viewing, camping, and just taking in the views during the summer. Also along the crest at Mt Ashland is a telecommunications site and the National Weather Service radar. Roads lower in the analysis area get more dispersed use by local residents, visitors, hunters, private timber companies, fuel wood cutting, gold mining, and dispersed camping. Some of the roads in the analysis area are also used to access private lands.

### Estimating Road Costs

It is difficult to develop an accurate estimate of the road costs, both for the existing condition, and to estimate the costs to implement the recommendations identified in this analysis. Decommissioning costs for example, may vary widely depending on local topography, road widths, stream crossings and other factors. Estimates for maintenance costs used in this document are based on the average costs and include administrative costs. Actual costs for maintenance level 1 roads may be lower as these roads are generally maintained 1 or 2 times in a ten year period.

**Road Maintenance Costs:** Road maintenance costs for maintenance level 1-4 roads would include work such as surface blading, rock removal, ditch cleaning, culvert cleaning, signing, roadside clearing, condition surveys, slump and slide repair, hazard tree removal, down tree removal, closure device maintenance, and administrative cost. This type of standard maintenance is generally done only periodically, or as needs arise. Paved roads received spot repair as needed, and the pavement or chips seal is generally replaced every 10-15 years.

**Table 3** compares the cost of maintenance at the minimum level to keep the road minimally functional and protect the watershed resources with the fully maintained condition, which includes an average of the cost necessary over many years to keep the road continuously fully maintained. Costs are in today's dollars. Table 4 compares the cost of maintaining the recommended road system at the minimum and fully maintained levels. As is shown, with a net increase of 2.25 in system road miles and substantial change from Level 2 to Level 1 minimal cost savings are realized at either the minimal or fully maintained level.

<b>Table 3. Existing Road Management – Annual Maintenance Costs</b>			
<b>Maintenance Level</b>	<b>Average Cost/Mile \$</b>	<b>Road Miles</b>	<b>Estimated Annual Cost \$</b>
<i>Maintenance at the <b>Minimum Level</b></i>			
unauthorized	None	23.42	NA <sup>1</sup>
ml 1	<b>\$131</b>	9.37	\$1,227
ml 2	<b>\$157</b>	58.51	\$9,186
ml 3	<b>\$300</b>	45.52	\$13,656
ml 4	<b>\$600</b>	0.35	\$210
<b>Totals</b>		<b>137.17</b>	<b>\$24,279.00</b>
<i>Maintenance at the <b>Fully-Maintained Level</b></i>			
unauthorized	None	23.42	NA
ml 1	\$600	9.37	\$5,622
ml 2	\$948	58.51	\$55,467
ml 3	\$3074	45.52	\$139,928
ml 4	\$4382	0.35	\$1,534
<b>Totals</b>		<b>137.17</b>	<b>\$202,551.00</b>

**Unauthorized Road Decommissioning Costs:**

Decommissioning costs for 17.93 miles of existing unauthorized roads that are used in the project is estimated to be about \$4000/mile without overhead costs. This estimate is based on actual, recent costs for this type of road work. The estimate total for decommissioning these roads would be almost \$72,000.

**Benefits of Road Decommissioning:**

Closing or decommissioning roads, which are not expected to have long-term access needs will benefit some resources. Impacts to wildlife, aquatic, and heritage resources should be much less on decommissioned roads.

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<sup>1</sup> Unclassified roads, by law, are not maintained.

Table 4. Recommended Road Management – Annual Maintenance Costs			
Maintenance Level	Average Cost/Mile \$	Road Miles	Estimated Annual Cost \$
<i>Maintenance at the <b>Minimum</b> Level</i>			
ml 1	\$131	23.73	\$3,108.63
ml 2	\$157	46.40	\$7,284.80
ml 3	\$300	45.52	\$13,656.00
ml 4	\$600	0.35	\$210.00
<b>Totals:</b>		<b>116.00</b>	<b>\$24,259.43</b>
<i>Maintenance at the <b>Fully-Maintained</b> Level</i>			
ml 1	\$600	23.73	\$14,238.00
ml 2	\$948	46.40	\$43,987.20
ml 3	\$3074	45.52	\$139,928.48
ml 4	\$4382	0.35	\$1,533.70
<b>Totals:</b>		<b>116.00</b>	<b>\$199,687.38</b>

## Attached Documents

Appendix A – Glossary of Terms

Table A – Existing Management Calculation Sheet

Table B - Recommended Management Calculation Sheet

Table C – Notes, Unauthorized Roads

## APPENDIX A

### GLOSSARY OF TERMS

\* Indicates definition is from 36CFR212.1 (July 1, 2006) per the Travel Management (and Designated Routes and Areas for Motor Vehicle Use) Final Rule published November 9, 2008 in the Federal Register.

**Arterial Road:** Primary travel route that provide service to a large land area, usually connecting with public highways or other Forest Service arterial roads.

**Collector Road:** Road that serves small land areas and usually connects with Forest Service arterials or public highways. They collect traffic from local roads and terminal facilities.

**Deferred Maintenance:** Work that can be deferred without loss of road serviceability until such time as the work can be economically or efficiently performed.

**Forest Road or Trail\*:** A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

**Forest Transportation Facility\*:** A forest road or trail or an airfield that is displayed in a forest transportation atlas, including bridges, culverts, parking lots, marine access facilities, safety devices, and other improvements appurtenant to the forest transportation system.

**Local Road:** Single purpose road, connecting terminal facilities to collectors or arterials.

**Maintenance\*:** The upkeep of the entire forest transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization.

**Maintenance Levels:** The level of service provided by a specific road and the maintenance required for that road, consistent with road management objectives and maintenance criteria.

- a) **Maintenance Level 5:** Roads that provide a high degree of user comfort and convenience. Normally are double lane, paved facilities, or aggregate surface with dust abatement. This is the highest standard of maintenance.
- b) **Maintenance Level 4:** Roads that provide a moderate degree of user comfort and convenience at moderate speeds. Most are double lane, and aggregate surfaced. Some may be single lane. Some may be dust abated.
- c) **Maintenance Level 3:** Roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Typically low speed, single lane with turnouts and native or aggregate surfacing.
- d) **Maintenance Level 2:** Roads open for use by high-clearance vehicles. Passenger car traffic is discouraged. Traffic is minor administrative, permitted, or dispersed recreation. Non-traffic generated maintenance is minimal.
- e) **Maintenance Level 1:** These roads are closed. Some intermittent use may be authorized. When closed, they must be physically closed with barricades, berms, gates, or other closure devices.

Closures must exceed one year. When open, it may be maintained at any other level. When closed to vehicular traffic, they may be suitable and used for nonmotorized uses, with custodial maintenance.

- f) **Objective Maintenance Level:** The maintenance level to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The objective maintenance level may be the same as, or higher or lower than, the operational maintenance level.
- g) **Operational Maintenance Level:** The maintenance level currently assigned to a road considering today's needs, road condition, budget constraints, and environmental concerns. It defines the level to which the road is currently being maintained.

**National Forest System Road\*:** A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.

**Primary Road System:** The key routes that make up the Forest Transportation System. These routes generally consist of Forest Service Maintenance Level 3, 4 and 5 roads (suitable for use by passenger cars) that provide access to large land areas across the Forest and to significant recreational destinations such as campgrounds, picnic sites, and trailheads.

**Public Road:** Any road or street under the jurisdiction of and maintained by a public authority and open to public travel (23 USC 101(a)).

**Private Road:** A road under private ownership authorized by an easement to a private party, or a road that provides access pursuant to a reserved or private right

**Public Lands Highways, Forest Highways:** A coordinated Federal Lands Highway Program includes Forest Highways, Public Lands Highways, Park Roads, Parkways, and Indian Reservation Roads. These are roads under the jurisdiction of and maintained by a public road authority or the Forest Service and open to public travel (23 USC 101).

**Road\*:** A motor vehicle route over 50 inches wide, unless identified and managed as a trail.

**Road Construction or Reconstruction\*:** Supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a road.

**Road Decommissioning\*:** Activities that result in the stabilization and restoration of unneeded roads to a more natural state.

**Road Management Objective (RMO):** The purpose, use, operational, and maintenance level of road based on resource management objectives and access and travel management objectives.

**Temporary Road or Trail\*:** A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or trail and that is not included in a forest transportation atlas.

**Unauthorized road or trail:** A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas.