



Fremont-Winema National Forest

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Roads Analysis: Fremont Issue 1

Fremont-Winema National Forests Roads Analysis Report

Fremont Portion of the Fremont-Winema National Forests
December 2006

Issue 1: Main Road System Evaluation and Recommendations

The purpose of this analysis is to evaluate the main arterial, collector road system, and certain significant local roads, such as a local road to a campground.

Issue 1A is whether the existing road system meets current access needs and existing uses. The road system was evaluated against established access criteria and existing uses. The description and explanation of the access criteria is included in the analysis process section below, and also in the Appendix.

The analysis of the main road system considered the road's access objectives and whether changes are needed to the Road's Management Objectives, changes to the type of road access (passenger car, or high clearance access), or changes to the road's maintenance level. Also evaluated is whether changes are needed to the type of maintenance being performed on the road or changes to the frequency that maintenance is performed.

When the analysis indicated needed changes, recommendations have been made for the road. **These recommendations are included in the Appendix, for each road. The recommended passenger car road system is also listed. Resource concerns associated with a road, and remarks and recommendations, are also noted in the Appendix.**

Issue 1B is the affordability of the current road system, this is an analysis of the annual & deferred maintenance need as compared to the expected road maintenance budget. **An analysis of the affordability of the road system was performed and is described in this section.**

Background

The annual roads budget that the Forest receives has been significantly reduced in recent years. Today, the forest's roads budget is about 60% of previous levels. Currently, the budget is sufficient to only perform annual road maintenance on the main road system. Also, the amount of commercial use (timber haul) on the road system has declined substantially in the last decade. This has resulted in a reduction in the amount of road maintenance being performed by timber sale purchasers and other commercial road users.

In the late 1970's, the roads on the Fremont were field inventoried and road management objectives were established for each road. These road management objectives established the objectives of the road, resource concerns, access needs and the types of users, the level of maintenance to be provided, and operations and traffic rules for the road. Based on these objectives, 982 miles of forest roads were being actively maintained for passenger car travel and low clearance vehicles. In addition, the State of Oregon and Lake County/Klamath County provide another 89 miles of main state and county roads, mostly paved, within the boundaries of the Fremont National Forest.

Information Sources

Several types of information was collected and used during the road evaluation and analysis. These information sources included;

- Current database of roads ("INFRA" Infrastructure Database). This database contains information on each road such as location, length, jurisdiction, width, surfacing type, maintenance level, and other types of information. Also contained in the database are the annual deferred maintenance needs for roads, based on the condition surveys performed since 1998.
- The current Road Management objectives for each road. These documents contain the objectives of the road, resource concerns, access needs, types of users, level of maintenance to be provided, operations and traffic rules for the road, and other information.
- Planning area maps that show potential future timber management areas and roads that would be needed as future haul routes.
- Maps and database information for pits and quarries located on the forest. These pits and quarries provide a source of rock and cinder for forest service projects, as well as for public and community needs.
- Database of roads that are currently under agreement with other agencies, private companies, and private landowners. These roads may have legal easements and prior maintenance agreements that have been approved. Also, the database of Road Use permits was used to identify roads on which landowners haul forest products from private lands.

Road management and project engineers, provided information about the road system based on their knowledge of the roads, local conditions, and their experience.

Analysis and Results

Issue 1A: Evaluation of the Existing Road System (Arterials/Collectors and Significant Local Roads)

Analysis Process Step 1. Road Use Evaluation:

A team of Road Management, Transportation Planning, and Project Engineering personnel familiar with the road system completed this evaluation.

The Road system was first evaluated for the types and significance of road use, and numerically rated against the following established use factors. These use factors were in the three broad categories of; Public Use, Private Use, and Administrative Use. A full description of the criteria and the rating system used is contained in the Appendix. Numerical ratings were then assigned to each road for each of these use factors, and then a total numerical rating was calculated for the road. A higher total numerical rating normally indicates a higher level of use and road significance. These ratings are contained in the table contained in the **Appendix. (Table 1-1).**

The use factors used in the evaluation are

Public Use:

- **Developed Sites:** How significantly does the road provide access to all existing and planned developed sites, such as campgrounds, trailheads, day use areas, viewpoints, interpretive sites, etc?
- **Community Ties/Public roads :** How significantly does the road provide for public roads access and access to communities?
- **Lands and Minerals :** How significantly does the road provide for access to community rock quarries and cinder pits, used by the public?
- **Dispersed Sites :** How significantly does the road provide access for dispersed recreation uses on the Forest?
- **Special Forest Products:** How significantly does the road provide access for collecting special forest products, examples are Christmas Tree permits, Mushrooms, Rock collecting, etc?

Private Use:

- **Private Land Ownership Access:** How significantly does the road provide access to private land and other land ownership uses. This includes general access to private land and residences under the federal regulations of ingress and egress.

- **Special Uses:** How significantly does the road provide access to private land and other land ownership special uses? This includes legal obligations and permits such as right-of-way easements, cost-share agreements, road use permits, special use permits, or other legal documents.

Administrative Use:

Administrative: How significantly does the road provide access for administration, management, or protection of forest resources. Administrative access includes the following administrative areas for Timber (T), Range (R), Fire (F), Lands/Minerals (LM), Heritage (H):

- How does the road system affect managing the timber base and other lands?
- How does the road system affect access to range allotments or pastures?
- How does the road system provide necessary access for firefighting resources, water sources, fire camp locations, and other improvements?
- How significantly does the road provide for administrative access to rock quarries, cinder pits, or special land management areas?
- How and where do roads provide access for traditional cultural practices sites for Native Americans?
- How and where does road access affect archeological sites and historic properties?

Analysis Process- Step 2. Road Use Rating and Road Management Recommendations:

A team of Road Management, Transportation Planning, and Project Engineering personnel familiar with the road system completed this step of the evaluation.

Using the numerical ratings determined in Step 1, each road was assigned a Low (L), Medium (M), or High (H) rating to indicate the relative significance of the road access for Developed Recreation, Public access, Private access, and Administrative access. The rating system used is contained in the **Appendix (Exhibit 1-1)**.

The team then developed road management recommendations for each road, consisting of a recommended Road Management strategy, work required and scheduling of road maintenance work, recommended changes to road maintenance levels, and remarks about the road.

The ratings, recommendations, and remarks are contained in the Appendix (Table 1-2).

Following is a description of the strategies and recommendations contained in the Appendix.

Description of the Road 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 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.)

Description of Work Required and Scheduling of Road Maintenance Work:

1. Maintain on regular "annual" maintenance cycle:

(Some maintenance items may be done once or more per year and some may be done every other year. The key is that maintenance items are done on a regular recurring cycle.)

2. Maintain on "as needed" basis:

(These roads are maintained, "as needed" to correct safety and environmental deficiencies. They will generally only receive maintenance work once every 5 to 10 years.)

3. Requires major improvement or deferred maintenance project work:

(Work may include items such as surfacing, realignment, relocation, installing bridges or major culverts, etc.) Recommended work is noted in the remarks column.

4. Requires minor improvement or deferred maintenance project work:

(Work may include items such as brushing, blading, spot rocking, adding or enhancing drainage structures like drivable dips, water bars, ditches, ditch relief culverts, etc.) Recommended work is noted in the remarks column.

Description of Maintenance Levels:

- **Maintenance Level 5:** Maintained for Passenger Car Use, High degree of Comfort and Higher Travel Speeds.
- **Maintenance Level 4:** Maintained for Passenger Car Use, Moderate degree of Comfort and Moderate Travels Speeds.

- **Maintenance Level 3:** Maintained for Passenger Car Use, The strategy is to provide for basic passenger car access into an area, at low travel Speeds.
- **Maintenance Level 2:** Maintained for High Clearance Vehicle Use, The strategy is to provide for basic high clearance vehicle access into an area, at low travel speeds of 5 to 25 miles per hour. *Most Maintenance Level 2 roads on the Forest are not main access roads and were not part of this roads analysis.*
- **Maintenance Level:** Intermittent or Short Term, The objective for this level of road can either be long-term access or short term access. *Maintenance Level 1 roads on the Forest are not main access roads and were not part of this roads analysis.*

- **Long Term** (open when needed for projects, closed when not needed, but road remains on the transportation system and is not decommissioned).

- **Short Term** (candidate for decommissioning). The objective for this level of road indicates that the road is not needed for access or resource management, and should be considered for decommissioning.

Recommendations and Follow-up Actions required.

Issue 1A: Evaluation of the Existing Road System (Arterials/Collectors and Significant Local Roads)

This is a brief description of the analysis results and follow-up actions recommended.

The full details and recommendations for each road are contained in the Appendix **Tables 1-1 and 1-2**).

- No changes to the classification of the road system (i.e., Arterial, Collector, or Local Classification) is needed or recommended.
- Changes to some current Road maintenance Levels are needed and recommended. After concurrence by the District Rangers, the Road Management Objective for the Road will need to be revised.
- Changes to frequency or timing of road maintenance were recommended for some roads. After concurrence by the District Rangers, the road maintenance portion of the Road Management Objective for these Roads will need to be revised.
- It is recommended that all roads evaluated in this analysis (Arterial, Collector, and Significant Local) not be considered for decommissioning. These roads are all main road access or serve as road access to important recreation or public areas. Decommissioning of these roads would result in a loss of access to sizable areas of the forest, or to key recreation areas.

- No recommendations to decommission Level 1 or 2 roads are made in this analysis. Decisions to decommission these roads will need to be done in a separate project level analysis, in compliance with NEPA and public input. As a guide, all Level 1 and 2 roads on the forest, not part of this roads analysis, could be considered potential candidates for road closures or road decommissioning in the future.
- Several recommendations for projects were made, to mitigate or correct road resource concerns, road impacts, or to make road improvements and correct travel safety concerns. These recommendations are listed in the proposed capital investments projects list in the **Appendix (Table 5-1)**. Decisions to implement these projects would need to be done in a separate analysis, in compliance with NEPA and public input, as needed.
- Per the shortfall in road maintenance funding, it is recommended that a supplemental road analysis be performed to evaluate reducing maintenance levels to reduce annual costs. This would involve conversion of some roads from maintenance level 3, 4, or 5, to a lesser operationl maintenance level An example of this would be converting a current level 3 road (passenger car maintenance), to a level 2 road (high clearance road maintenance).

Analysis and Results

Issue 1B: Affordability of the current road system, this is an analysis of the annual and deferred maintenance need as compared to the expected road maintenance budget

Road maintenance funding has declined substantially, approximately 60% of the budget levels that were received a decade ago.

As shown in Table A below, the projected budget level is \$744, 000 in FY05, reducing to \$707,000 in FY06, and then estimated to remain level at \$707,000. After road management, engineering, and organization costs have been factored out, **approximately \$253,000 will be available for 'on-the-ground' road maintenance work in FY06 and beyond.** These amounts are expected to remain relatively stable in the foreseeable future; however, they are substantially less than what is needed to fully maintain the road system to the objective standards.

Table A: Road Funding

Description of Budget Item	FY 2004 Actual	FY 2005 Projected	FY 2006 Projected

* Direct Road Maintenance Budget-Fremont	397,000	299,000	253,000
Road Management/Engineering/ Organization Costs- Fremont	434,000	445,000	454,000
Total Expected Funding Level - Fremont	831,000	744,000	707,000

*** Note: Direct Road Maintenance Funding-Fremont** is that funding which is actual "on-the-ground" road maintenance work on forest roads. It includes the full range of road maintenance activities such as grading of roads, ditch cleaning, spot surfacing replacement, roadside brushing, hazard tree removal, sign repair and replacement, bridge maintenance, asphalt maintenance and other activities.

Since 1998, the Forest has been conducting road condition surveys to determine the annual costs necessary to maintain the road system to standard. In addition, any deferred maintenance work items necessary to bring the roads back to standard were recorded and documented. Table B below compares the amount of road maintenance dollars available to the amount of dollars needed to maintain those roads to standard, as determined through the annual and deferred maintenance condition surveys.

Table B: Comparison of Existing Maintenance dollars available to Annual and Deferred Maintenance Needs for the Fremont National Forest

Operational Maintenance Level	Total Miles	Projected Maintenance Funds Available	Annual Maintenance Needs*	Deferred Maintenance Needs*

1	1952	---	2,774,755	1,219,861
2	3882	---	395,615	2,122,215
3	737	---	2,333,711	34,974,154
4	217	---	1,856,874	15,320,584
5	0	---	0	0
TOTAL	6788	253,000	7,360,955	53,636,814

*** 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. Refer to Table 1-3 for the INFRA database summary of annual deferred maintenance needs.**

The results of this analysis show that it would be necessary to spend approximately \$53.6 Million dollars to eliminate the deferred maintenance backlog of work and bring the road system back up to standard, and then spend approximately \$7.4 million annually to keep it maintained to standards and in a safe and environmentally sound condition. Since only \$250,000 (3% of the Annual Need) is estimated to be available annually, only the highest priority road maintenance work will be accomplished, unless other sources of funding become available.

Although it would be desirable to request the funding necessary to accomplish the deferred maintenance work, it is not anticipated that increases in funding of this magnitude are going to be available anytime in the foreseeable future. Therefore, in order to reduce maintenance needs, options for managing the road systems are limited to; reducing the mileage and/or standard of roads to maintain, or continuing to prioritize maintenance work on the existing higher standard main road system and accept a continued increase in our deferred maintenance backlog.

In addition to the large discrepancy between present road maintenance funding and projected road maintenance funding needs, the amount of road maintenance work that has been 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 the ability to keep up with road maintenance needs.

Reduced funding is evident in the backlog of several road maintenance activities, such as, paving, chip seal, and surface rock replacement, roadside brushing, hazard tree removal, etc. The crushed aggregate and cinder surfacing on many of the main roads is worn out, and traditionally, we have shared the work and expense of replacing surfacing materials with timber purchasers during active timber sales. With the decrease in the timber program, we have limited means of replacing surface materials on roads. There is also an increase in the number of Objective Maintenance Level 2 roads that can no longer be driven in a full sized vehicle due to encroaching brush. These roads were typically brushed out as part of active timber sales, but many have not had project use in years. It is expected to see a portion of these Objective Maintenance Level 2 roads move into an Operational Level 1 (closed) category through natural encroachment of roadside brush and trees.

Recommendations and Follow-up Actions Required

Issue 1B: Affordability of the current road system (this is an analysis of the annual and deferred maintenance need) as compared to the expected road maintenance budget.

Since only 3% of the total road maintenance budget need is available, the following recommendations are made.

- Actively pursue alternate sources of funding such as Regional funded special projects, partnerships, cooperators, and grants and agreements.
- Only priority road maintenance activities should be conducted. Concentrate almost all maintenance activities to the main high use passenger car system, and high use collector roads. These activities consist of;
Grading of the main high use roads on the forest,
 - Correcting of important safety issues,
 - Roadside brushing, particularly on curves or where visibility impairment is a safety concern,
 - Removal of hazard trees,
 - Regulatory and warning signing,
 - Correcting a road concern that is causing significant resource problems or erosion
 - Correcting a road problem that will result in loss of investment or significant higher future costs to repair the road if maintenance is not performed.
- In order to reduce the road miles needing to be maintained, Level 1 and 2 roads should be evaluated for decommissioning, in a future analysis or at the project level. Decommissioning decisions are not a part of this Forest Wide Roads Analysis.

- In the Road Evaluation section of this analysis, recommendations were made to reduce and increase the standard and maintenance level on some roads. All other roads analyzed were at the correct standard and maintenance level.
- Per the shortfall in road maintenance funding, it is recommended that a supplemental road analysis be performed to evaluate reducing maintenance levels to reduce annual costs. This would involve conversion of some roads from maintenance level 3, 4, or 5, to a lesser operational maintenance level. An example of this would be converting a current level 3 road (passenger car maintenance), to a level 2 road (high clearance road maintenance).

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