



for the greatest good

Travel Analysis Report

Travel Management Rule, Subpart A

Umatilla National Forest, September 2015



Blue Mountain Scenic Byway



Recontouring Roads No Longer Needed



Slope Stabilization



Aquatic Organism Passage

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Introduction

This transportation analysis report represents several years of collected data and an evaluation of roads administered by the Umatilla National Forest. It is a comprehensive overview and partial assessment of the existing condition of the road system throughout the forest.

From a public perspective, it's important to understand that this report is not a decision-making document. Specific road management decisions are made on a project-scale basis. When projects are proposed – for instance, timber sales, culvert replacement, or fire lookout repair – any needed changes in road management may be part of the proposal. Public input is crucial in this process, and individuals or groups who wish to be involved need to request inclusion on Forest Service project mailing lists.

The benefit and risk assessment, in this report, will be used by Interdisciplinary Team (IDT) members of specific projects. These Forest Service employees are team members working on project design and compliance documents. They analyze the specific project and recommend to the responsible official how the work should be done, including how associated roads should be managed. These team members look at the ratings on the spreadsheets in Appendix A, and can tell whether other specialists raised resource concerns about certain roads or road segments and, after reading the evaluation criteria in Chapter 4. *Assessing Benefits, Problems and Risks (21.4)*, understand why.

The most current public access maps for the Umatilla NF are the Motor Vehicle Use Maps (MVUM). These maps show roads, trails, and areas designated for motor vehicle use, the types of vehicles that are allowed on each, and the period of time they can be used. These free maps, printed on newsprint, are found at each ranger district office, as well as the forest headquarters in Pendleton, Oregon. They are also available on the internet for printing or downloading to a mobile device. They are updated annually to reflect any changes in designations for public motorized travel.

Background

Over the past 100 years, an extensive road network has been developed, serving commercial, recreation, and administrative purposes while also providing access to private lands. Most roads were originally constructed for commercial purposes including grazing, timber, and mineral extraction. The transportation system serves a variety of resource management and access needs.

There are approximately 4,600 miles of roads under the jurisdiction of the Umatilla NF. About 500 miles are currently maintained for passenger car travel, 1,900 miles are maintained for high clearance vehicle travel (some for administrative traffic only), and the remaining 2,200 miles are in storage. Public roads under state and county jurisdictions also traverse the forest.

The four ranger districts of the Umatilla NF (Heppner, Pomeroy, North Fork John Day, and Walla Walla) share management of the road system. After completion of the Land and Resource

Management Plan in 1990, each ranger district completed a motorized access and travel management (ATM) plan. These ATM plans were produced by an interdisciplinary team. Each ATM plan was informed by extensive public participation and input. Built into each ATM plan was recognition that future changes in road management could be necessary. The changes in road management included in each ATM plan were implemented over the next several years, as funding allowed.

Since implementation of the ATM plans, many subsequent project-scale transportation analyses have been completed. As a result, more adjustments have been made to the road system, in addition to the changes in the ATM plan decisions. Over the past 25 years, approximately 384 miles of authorized or “system” roads, that were needed for neither access nor management of the forest, have been decommissioned on the Umatilla NF. More than 17 miles of unauthorized or “non-system” roads have also been reclaimed, returning areas to a more productive condition for growing trees and other vegetation. Unauthorized “non-system” roads include temporary roads under former timber sale contracts that were not effectively reclaimed or routes created by users driving off the developed road system.

A forest-scale analysis of the primary road system was completed in 2004. This analysis included roads maintained for passenger car travel (Operational Maintenance Levels 3-5), and a few other arterial and collector roads that were maintained for high clearance vehicles (Operational Maintenance Levels 1 and 2). The 2004 Roads Analysis Report identified some road segments that posed a high risk to resources. Efforts have been made to mitigate these risks, mostly through the Legacy Roads and Trails program in the form of Storm Damage Risk Reduction projects. The report also identified road segments that were of lower value, aiding efforts to reduce maintenance levels on many roads across the forest. In 2004, about 850 miles of roads were maintained for passenger car travel; this has been reduced to 509 miles in 2015, due to budget reductions.

Road maintenance budgets have been steadily declining for more than 20 years. Funding for road work in Region 6, including both appropriated funding and work contributed by commercial users, is now less than 20 percent of 1995 levels. This funding deficit means many roads do not get necessary routine maintenance and are falling into a state of disrepair.

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Deferred Maintenance is defined as “maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value.”¹

¹ (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998).

Annual Maintenance is defined as “work performed to maintain serviceability, or repair failures during the year in which they occur. Includes preventive and/or cyclic maintenance performed in the year in which it is scheduled to occur.”²

Since 1999, the Forest Service has been tracking the deferred maintenance backlog. The following table shows the accumulated totals for *Deferred Maintenance* and the *Annual Maintenance* needs required to keep the road system in Region 6 fully maintained to standard.

Table A - R6 Deferred and Annual Maintenance Needs

National Forest	Road Miles	Total Maintenance Needs ³	
		Deferred Maintenance	Annual Maintenance
Deschutes	8,109	\$80,566,681	\$7,526,877
Fremont-Winema	12,548	\$133,971,908	\$13,642,507
Gifford Pinchot	4,103	\$53,330,891	\$5,312,486
Malheur	9,628	\$56,025,932	\$6,153,833
Mt. Baker-Snoqualmie	2,453	\$81,915,920	\$9,660,568
Mount Hood	2,881	\$51,813,990	\$4,896,610
Ochoco	3,253	\$33,260,537	\$3,313,734
Olympic	2,026	\$42,680,614	\$4,467,995
Rogue River-Siskiyou	5,288	\$111,614,953	\$11,581,995
Siuslaw	2,128	\$26,115,387	\$2,777,636
Umatilla	4,624	\$65,211,612	\$6,647,168
Umpqua	4,776	\$73,669,140	\$7,148,103
Wallowa-Whitman	9,150	\$64,279,905	\$6,808,709
Okanogan-Wenatchee	8,163	\$158,111,026	\$17,050,400
Willamette	6,542	\$90,942,456	\$8,838,067
Colville	4,309	\$37,336,065	\$4,306,765
Columbia River Gorge	99	\$1,454,584	\$121,557
	90,078	\$1,162,301,600	\$120,255,010

² (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998).

³ These costs are derived from average National Unit Costs and include a burden rate of approximately 40 percent to cover planning, contracting, and all other overhead costs associated with returning the road system components to an original “like new” condition.

Table A shows that it would take approximately \$1.2 billion dollars to bring the entire road system in Region 6 back up to standard (all roads in a like-new condition), and require approximately \$120 million dollars per year to keep all existing roads maintained to standard.

For the Umatilla NF, approximately \$65 million would be needed to bring the entire existing road system back up to standard. Once roads are up to standard, more than \$6.6 million per year is required for annual maintenance, which includes the cyclical investments necessary to replace gravel surfacing, pavement overlays, bridges, and other major structures on schedule.

Travel Analysis Policy (20.3)

The predictable deterioration of road infrastructure due to age and the gap between annual maintenance needed and available maintenance funding exists on all national forests. In response to these issues, regulations were established through the Travel Management Rule in 2001, and revised by the Forest Service's 2005 Travel Management Rule. This requires the responsible official on each unit in the National Forest System to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of NFS lands" (36 CFR 212.5).

It is expected that each national forest's transportation system will be comprised of a set of roads needed to maximize access needs, minimize environmental risks, and reflect long-term funding expectations.

The minimum road system is defined in 36 CFR 212.5(b)(1) as the road system that:

- is needed to meet resource and other management objectives adopted in the relevant land and resource management plan;
- meets applicable statutory and regulatory requirements;
- reflects long-term funding expectations; and
- minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance

Per the regulations at 36 CFR 212.5(b), the minimum road system identified by the responsible official must be informed by a science-based process and involves a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. Forest Service Manual 7712.4 directs responsible officials to use the Travel Analysis Process (TAP, formerly known as the Roads Analysis Process or RAP) to complete this task.

It is important to understand that travel analysis is not a decision-making process; it is an assessment of the existing condition of the current road system. It will be used to inform future decisions relating to administration of the forest transportation system and helps to identify proposals for changes to travel management direction (FSM 7712).

Specifically, travel analysis will be used to inform:

- Future plan and project-scale proposed actions, purpose and need statements, and future decisions pertaining to road construction, reconstruction, decommissioning, and maintenance;
- Road investments at Regional, Forest, and District scales;
- Delivery of National, Regional, and Forest restoration programs for multiple resources; and
- Agency strategies to comply with regulatory requirements, including those associated with the Clean Water Act and the Endangered Species Act.

In order to meet the requirement that a minimum road system “reflects long-term funding expectations” (36 CFR 212.5(b)(1), the Umatilla NF used direction provided by the Forest Service’s Pacific Northwest Region, which defined this to mean that the *average annual funding* is reasonably in balance with the *average annual cost of routine road maintenance*.⁴

Travel Analysis (21)

The Travel Analysis Process is described in Forest Service Manual 7712 and Forest Service Handbook 7709.55, Chapter 20. The six steps are:

1. Setting Up The Analysis
2. Describing The Situation
3. Identifying Issues
4. Assessing Benefits, Problems, and Risks
5. Describing Opportunities and Setting Priorities
6. Reporting

1. Setting Up The Analysis (21.1)

21.1(1) Establish Interdisciplinary Team

In 2012, a team of specialists from relevant disciplines was established to complete the travel analysis. A listing of team members is found on page 20. On September 29, 2012, the interdisciplinary team held its first meeting.

⁴ “Average annual funding” is defined as the average amount of funding available for each NFS unit for routine annual maintenance from appropriations, collection accounts, commercial users, cooperators, and other partners during the 2008-2012 timeframe, plus or minus 20%. It does not include funding from ARRA and CIP (spell these out). Only the modest amounts specified for “routine maintenance” in Legacy Roads and Trails funding allocations are included. NOTE: This definition was provided in 2012. The Umatilla NF adjusted the timeframe to 2011-2015, as it provides an updated and more accurate average.

“Average annual cost of routine road maintenance” means the average yearly need for basic road maintenance. This includes log out, drainage maintenance, erosion control, blading, brushing, traffic signs, etc. It does not include cyclical replacement costs (such as bridge replacement every 50 years, asphalt overlays, etc.), which are covered by funding beyond the individual NFS unit budgets (e.g., Regional Capital Investment Program).

21.1 (2) Develop List of Data Needs and Schedule

The team identified the following information sources for use in the analysis:

- Sources that included public involvement in their development
 - 1990 Umatilla NF Land and Resource Management Plan
 - Umatilla NF Motorized Access and Travel Management (ATM) Plans:
 - Heppner Ranger District – July 1992
 - Pomeroy Ranger District – July 1993
 - North Fork John Day District – July 1992
 - Walla Walla District – July 1993
 - Roads Subject to Project Decisions Subsequent to the District ATM Plans
 - 2004 Umatilla NF Roads Analysis Report
 - 2009 Heppner West End OHV Environmental Analysis
- Other sources
 - 2011 Watershed Condition Framework
 - INFRA Travel Routes Database
 - Zone and Forest Road Manager Knowledge of Engineering Concerns

A schedule was then developed to ensure the completion of the travel analysis by the end of 2015, as directed by the Washington Office.

21.1(3) Define Scope of Analysis

There is neither a proposed action nor decision resulting from this analysis. This report contains information that may be used to inform future travel management decisions that may result in:

- Changes to Operational Maintenance Levels
- Changes to Road Designations (changes to modes of travel and/or seasons of use)
- Road Decommissioning (ranges from mechanically restoring natural contours and drainage patterns to simply eliminating traffic and allowing natural processes to reclaim the roadway)
- Conversion (from a National Forest System Road to a National Forest System Trail)
- No Action

21.1(4) Define Scale of Analysis

For this assessment, the Forest Supervisor determined the appropriate scale to be all roads managed by the Umatilla NF that were neither evaluated in the 2004 Umatilla NF Roads Analysis Process nor subject to a decision subsequent to the ATM Plan decisions in the early 1990s. Roads subject to decisions subsequent to the ATM Plan decisions that still exist are assumed to be needed for resource management. Those that have been decommissioned are no longer needed.

The team relied on existing GIS data and local knowledge of known engineering concerns associated with the transportation system to complete the analysis and, for consistency, used the same evaluation criteria elements identified in the 2004 Umatilla NF Roads Analysis Process.

Motorized trails are not included in this analysis, as Subpart A required identifying a minimum *road* system. However, use of motorized Off Highway Vehicle (OHV) trails has increased dramatically since the ATM Plans were completed, and development of motorized trails to accommodate this use is analyzed at the project level on a case-by-case basis.

Process to complete Subpart A:

- A complete and accurate inventory of roads to be analyzed was produced.
- Engineering staff began the process by using the Infra Travel Routes database to generate a master list of all roads managed by the Umatilla NF.
- Roads included in the 2004 Roads Analysis were then removed from the master list.
- GIS specialists produced a list of roads subject to decisions subsequent to the ATM Plan decisions in the early 1990s. These roads were also removed from the master list.
- The remaining list of road segments was included in this final transportation analysis to complete Subpart A.

21.1(6) Define Depth of Analysis

The Benefit and Risk Assessment method was determined to be an appropriate depth of analysis for the assignment, since this was the method used for the 2004 analysis. A benefit and risk assessment is a commonly used method for this type of review, and it references the Watershed Condition Framework ratings as well as previous roads analyses. The study used available data and is considered a reasonable estimate of actual road interactions with various resources for the scale of this analysis. The assessment included minimal field verification of ratings based on knowledge of the road system at the district level; verification of individual risk factors and overall ratings will occur with future project-scale analyses.

21.1(7) Identify Opportunities to Integrate With Other Landscape Analyses

No concurrent forest-scale analyses or assessments were ongoing at the time this analysis was initiated. The results of the 2011 Watershed Condition Framework analysis were used in the Benefit and Risk Assessment. The results of this analysis were integrated with previous analyses and will be used to identify a minimum road system for the Umatilla NF.

21.11(3) Determine Appropriate Level of External Input

The forest gathered information in several different ways:

- ❖ Local Resource Advisory Committees and collaborative groups were informed of the analysis and report, and their comments were solicited.
- ❖ Input continues to be solicited from the general public at the Umatilla NF headquarters and district offices, by providing an overview of the analysis and comment forms in reception areas.
- ❖ Oregon Department of Fish and Wildlife - The analysis and report were discussed at the annual meeting between ODFW and Umatilla NF in May 2015.

- ❖ Annual Program of Work Meetings with CTUIR, CTWIR, and Nez Perce Tribes – An overview of the analysis and report was provided and discussed at the 2014 and 2015 annual meetings.
- ❖ Six public meetings - The forest solicited general travel access comments at public meetings pertaining to the Forest Plan revision in July 2015. These “access” meetings were advertised in local newspapers.

21.13(4) Identify Previous Road or Travel Analyses Available to Incorporate or Tier To

In 2004, a Umatilla NF interdisciplinary team completed a Forest Roads Analysis that used an evaluation system to assess the benefits and risks of roads pertaining to aquatic conditions, riparian conditions, water quality, terrestrial wildlife, ecosystem functions and processes, economics of maintaining road systems, road relationships to commodity production, with specific sections for timber, minerals, and range management, water production, special products access, special use permits, recreation, passive-use values, social issues, civil rights and environmental justice, general public transportation, and administrative uses. That evaluation system was further developed by the team performing the analysis, and this system was updated and used by the team performing this TAP.

2. Existing Situation (21.2)

21.2(1) Summarize Current Land Management and Travel Management Direction

Current land management direction comes from laws, such as the National Forest Management Act, Forest Roads and Trails Act, and the Highway Safety Act. Policies come from Departmental Regulations, through the Forest Service Directive System, as well as the 1990 Umatilla NF Land and Resource Management Plan (Forest Plan). In the Forest Plan, standards and guidelines are designed to move the forest toward desired future conditions associated with each type of management area in the plan. The ATM Plans were tiered to the Forest Plan, while using the Forest Service Directive System in their development. Any subsequent travel management decisions have been consistent with directives and Forest Plan standards and guidelines.

21.2(2b) Compile List of Roads

Engineering staff produced a list of roads to be analyzed. This list was used to produce a GIS layer, which was then used to perform the benefit and risk assessment.

21.2(2c) Assess Existing Uses

The team reviewed motorized and non-motorized uses identified in various previous analyses, and discussed public and administrative access needs, as well as motorized recreation opportunities.

21.2(2d) Describe Public and Administrative Access Needs

The primary forest road system was built to provide timber, grazing and mining access. As the public gained road access, areas they frequented became their favorite places. This established

use continues with each new generation, and has changed with new forms of motorized vehicles. While some users may prefer easy access to their favorite recreation spots, others may only need basic primitive access to trailheads, while others may want to use a spur road for a private campsite. In all cases, a well-designed and appropriately maintained road system is imperative for their access.

Various types of road uses have been identified to include:

- Administrative ⁵
- Owner access to private in-holdings (administrative)
- Resource management (vegetation & range)
- Fire management
- Forest product removal (commercial, cultural, and recreational)
- Other economic generators
- Recreation

Driving for pleasure is a major activity across the forest. General use is during the spring, summer, and fall seasons when the roads are free of snow. Some winter sports areas are accessible during the winter. Special routes on the Umatilla include:

- ❖ Blue Mountain Scenic Byway (Ukiah and Heppner Ranger Districts) enhances seasonal (May – October) tourism along its 130-mile route from Arlington, Oregon, through Heppner and Ukiah to its junction with the Elkhorn Scenic Byway, on the neighboring Wallowa-Whitman National Forest. The Elkhorn Scenic Byway continues across the Wallowa-Whitman National Forest to Baker City, Oregon.
- ❖ Oregon State Highway 204, linking the communities of Weston and Elgin, bisects the Walla Walla Ranger District. The high point along this route is the Spout Springs winter sports area.
- ❖ North Touchet River Road (Walla Walla Ranger District) In the State of Washington, south of Dayton, National Forest System Road 64 provides access to Ski Bluewood, operated under special authorization by a private firm.
- ❖ Tucannon River Road (Pomeroy Ranger District) Further to the northeast, National Forest System Road 47 provides access to the 16,000-acre W. T. Wooten Wildlife Area, owned by the Washington Department of Fish and Wildlife. This area includes eight lakes that were created for fishing, and has an Environmental Learning Center, which is leased and operated by the State Parks and Recreation Commission.

21.2(2e) Motorized Recreation Opportunities

Year-round recreation opportunities are important to many residents in the local communities and general public alike. Winter sports are facilitated by terminal facilities, such as trailheads and sno-parks. Additionally, the Umatilla NF has 438 miles of trails designated for OHV use.

⁵ Administrative uses for roads include lookout towers, communications sites, utility corridors, special use areas and facilities, designated permit areas, and designated resource areas. Technically, owner access to private land in-holdings is also considered an administrative use.

Table B – Motorized Recreation Opportunities

Vehicle Types	Seasons Of Use	Favorite Places	Favorite Activities
Passenger Cars	ALL	Developed recreation sites, trails, dispersed camping (off spurs, etc.), campgrounds, picnic areas, recreation residences, scenic byways	Driving/riding for pleasure/sightseeing, hiking, recreational driving, camping, geocaching, day trips, berry or mushroom picking
High Clearance Vehicles	ALL	Dispersed camping (off spurs, etc.), recreation residences, hunting camps	Hunting, general access of rough roads, firewood cutting, other forest products, rugged sightseeing
Recreational Vehicles	ALL	Developed recreation sites, trails, dispersed camping (off spurs, etc.), recreation residences, hunting camps	Hunting, camping, berry or mushroom picking
Off Highway Vehicles	ALL	Trails, camp sites by trail heads, day use areas, dispersed camping sites, campgrounds, picnic areas, recreation residences, hunting camps	Trail riding, sightseeing, general play
Snowmobiles	Winter	Developed and non-developed winter play areas, trails, dispersed camping (off spurs, etc.), campgrounds, recreation residences	Winter travel on trails and roads, viewing scenery, general play

21.2(2f) Gather Information about Environmental, Social, and Other Issues

From a social perspective, many view roads as beneficial to their experience and to forest management. Others feel the national forests have too many roads. The degree of benefits that roads provide relates to their condition. Well maintained roads enable them to be used as intended, as well as potential other uses. Poorly maintained roads may not facilitate the intended uses, and make travel difficult or impossible. The degree of risk also relates to their condition. Roads are designed to function properly with minimal environmental or safety risks when maintained at regular intervals. When maintenance is deferred, their ability to function properly decreases, and environmental and safety risks increase.

Historically, snow recreation in the forest is very popular. Access for winter uses is primarily associated with roads that access sno-parks or areas, roads, and trails where winter snowpack is adequate for over the snow travel. Hunters depend on being able to access their hunting areas.

If access to an area becomes difficult or unavailable, users become frustrated and are forced to modify their plans or continue to use an area in violation of rules and regulations.

People’s “sense of place” is directly tied to the aspects of an area, including the area within a road corridor, that invoke a special feeling or attachment. Factors include the area’s vegetation, amount of sunlight available, views, solitude, opportunities that make it a destination, and familiarity with the area. The road facilitates the type and amount of use; the design and course of the road allows individuals to see various aesthetic attributes visible alongside the road. These attributes are directly related to road management.

Commercial traffic is intermittent on Umatilla NF roads. Commercial haulers, such as logging operators, are required to perform road maintenance to offset any road damage they generate on haul routes.

The forest product industry, grazing, and local mining operations continue to be economic factors in the communities surrounding the Umatilla NF, and rely on road access. However, the majority of road use today occurs from recreational activities.

Tourism is generally viewed as a benefit to the local economy, through the sale of goods and services. Many users expect to travel long distances quickly, and to be able to travel safely and comfortably over forest roads. Lack of maintenance and absence of capital investments to keep the road system safe and efficient will result in a diminished number of tourists and sales of local goods and services.

21.2(2g) Summarize Existing Travel Management Decisions

Travel management decisions were made in the early 1990s on a forest-scale, through four separate decisions (one for each ranger district). Minor adjustments to those decisions have been made by project-scale decisions since that time.

One specific travel management decision, signed in 2009, addressed off-road vehicle travel on a portion of the Heppner Ranger District. This decision brought the Umatilla NF into compliance with Subpart B of the Travel Management Rule, which requires designation of roads, trails, and areas for motorized travel through the publication of a Motor Vehicle Use Map (MVUM).

21.2(2h) Assess Current Financial Resources for Operating the Road System

Financial and personnel resources are limited on the Umatilla NF, and correlate to reduced budgets. As personnel retire and budgets continue to decline, some positions cannot be refilled. Duties and responsibilities associated with those positions will continue to be integrated into remaining positions. This results in workforce realignment, protracted training for younger staff to achieve journey level, slower response time, overworked or stressed out staff, and a general reduction of overall work capacity.

Table C shows the four budget line item categories used to operate the road system over the past five years, with \$ reflected in thousands.

Table C – Road System Operation and Maintenance⁶

Fiscal Year	CMRD (Appropriated Funds)	CMLG (Legacy Roads & Trails)	CWF2 (Co-op Deposits)	SC06 (Stewardship Retained Receipts)	Maintenance Contracts
2011	\$387	\$11	\$349	\$1	\$195 (26%)
2012	\$476	\$10	\$450	\$1	\$58 (06%)
2013	\$383	\$11	\$116	-	\$38 (07%)
2014	\$450	\$10	\$418	-	\$77 (09%)
2015	\$450	\$10	\$300	\$3	\$100 (13%)

21.2(2i) Summarize Available Accident and Law Enforcement Data

Accident and law enforcement data on Umatilla NF roads is not extensive. Information shown in Table D is a summary of comments from road managers, field employees, and law enforcement officers.

Table D – Accident and Law Enforcement Comments

Road	FS #	Issue	Potential Causes	Comments
Jubilee Road, from the end of pavement at Bald Mountain to Jubilee Lake	6400000 (south)	Repeated evidence of vehicles losing control...some going off the road. The road gets wash-boarded during the summer months, in spite of being bladed annually.	Combination of excessive speed and road conditions. Driving under the influence.	We resurfaced the road with a larger size aggregate, to make the road feel rougher. Of the 12 speed limit signs that were posted, only two remained the last time the road was checked.
North Fork Touchet River Road, from the end of County Road 9115 to Ski Bluewood.	6400000 (north)	Accidents during the winter months when Ski Bluewood is open. The road is paved and in good condition.	Excessive speed or driving too fast for conditions, driving under the influence, defective equipment (worn tires) or inappropriate tires such as not having winter traction tires or not using tire chains; inexperience driving in conditions.	The ski area plows the road and applies traction sand as needed. The ski area does an adequate job of snow removal and sanding.
Blue Mountain Scenic Byway	5200000 & 5300000	Vehicle vs. cow accidents. Vehicles leaving roadway, vehicle roll-overs, motorcycle crashes. Main route between Granite, Ukiah, and Heppner.	Unfamiliarity with road; visibility problems of seeing black cows at night; excessive speed for conditions, driving under the influence, icy conditions in winter.	We posted speed limits and increased warning signing, in hopes of reducing the potential for accidents. Last year in hunting season, 15 of the new warning signs on road 53 were knocked over or stolen. LEO enforces speed limit, actively patrols.

⁶ Higher percentages in FY 2011 & FY 2015 maintenance contracts reflect funding augmentation from CWF2 for performing road maintenance. Prior to 2009, commercial road users deposited funds for the Forest Service to perform road maintenance. They are now required to perform this maintenance on their own. Remaining deposits collected prior to 2009 may continue to be used to perform road maintenance until they are exhausted.

Road	FS #	Issue	Potential Causes	Comments
Olive Lake Road, between Dale Barn and junction of Road 1003	1000000	Vehicles leaving roadway. The road gets wash-boarded during the summer months, in spite of annual blading.	Excessive speed for road conditions	Steep grade
Mountain Road, between Abels Ridge Road (4018000) and Clearwater Lookout.	4000000	Vehicles leaving roadway, Vehicle rollover. The road gets wash-boarded during the summer months, in spite of annual blading.	Unfamiliarity with road; excessive speed for road conditions	Road recently realigned in one section and resurfaced with new aggregate, increased warning signs.

21.2(3) Describe Public Access Needs Including Adjacent and Connecting Road Systems

Adjacent connecting transportation systems include state, county, and tribal systems, and well as two adjacent national forests.

- ❖ Memorandums of Understanding with *each state* (ODOT and WSDOT) have been updated recently, and are often referred to for guidance.
- ❖ Cooperative road agreements with our *ten adjacent counties* were formed when the forest transportation system was being developed, and they were actively used from the mid-1960s until around 1995. Changes in regulations, agreement processes, and dramatic budget cuts over the past twenty years have resulted in the obsolescence of these agreements.
- ❖ Adjacent *tribal transportation systems* are not highly developed, and are mostly connected to the road system on the adjacent Wallowa-Whitman National Forest.
- ❖ Adjacent *national forests' road systems* (Wallowa-Whitman and Malheur) connect to the Umatilla NF road system. The interface between the Umatilla and Malheur consists of only a few roads, and they are primitive in nature. The interface with the Wallowa-Whitman is subject to an administrative agreement that facilitates more efficient management for both forests.

The Umatilla NF was a very active participant in the former Forest Highway Program, and continues to play an active role in the Forest Lands Access Program. Many major routes leading to the forest have been improved through these programs, which are considered vital to local counties.

3. Identifying Issues (21.3)

21.3(1) Identify Key Issues Using Appropriate Public Involvement

In March 2004, the Umatilla NF published a Roads Analysis Report which addressed issues brought forward by the public and internal specialists on topics of aquatic conditions, riparian

conditions, water quality, terrestrial wildlife, ecosystem functions and processes, economics of maintaining road systems, road relationships to commodity production, with specific sections for timber, minerals, and range management, water production, special products access, special use permits, recreation, passive-use values, social issues, civil rights and environmental justice, general public transportation, and administrative uses. We reference this report because issues remain much the same. The primary difference today is that we have far less money to maintain the road system than in 2004.

Key issues relating to roads were then identified by the team, after considering public involvement, past analyses, and internal input. These issues can be captured in two primary themes:

- Maintaining Adequate Public and Administrative Access
- Minimizing Environmental Risks

21.3(2a) Key Public Concerns Related to Travel Management

Primary public concerns related to travel management came to the surface at public meetings conducted in the early 1990s, when the ATM Plans were being developed. Subsequent proposed actions on the Umatilla NF and its close neighbors, the Wallowa-Whitman and Malheur National Forests, have shown concerns remain similar over the past two decades. Also, as part of the 2015 Forest Plan Revision process, the Umatilla NF co-hosted six public meetings and received public input on access issues. Major concerns include:

- ❖ Keep roads open. - In Eastern Oregon, one of the most vocal issues the public has is concern for loss of access. Many constituent groups (hunters, collectors, campers, etc.) do not want any roads or spurs closed. This may be in direct conflict with environmental groups or resource specialists who recommend road closures to minimize impacts from road use.
- ❖ Allow mixed use on roads. – At the public meetings, we heard from numerous OHV owners who want to use forest roads that are not currently designated for mixed use (OHV and highway-legal vehicles). Public efforts are currently underway to license OHVs to allow mixed use on all forest roads that are designated for use by highway legal vehicles.
- ❖ Fix the roads. - Maintenance of roads is an ongoing complaint with users, both recreational and commercial. There are reports of people breaking axles on Forest Service roads, including roads which were fine several years earlier. Safety becomes an issue when we don't have budgets to maintain our roads.
- ❖ Protect me (and/or wildlife) from too much noise or conflicting uses. - Too many roads and excessive motorized use on public lands are creating resource issues, including displacement of big game onto adjacent private lands, impacting ranching and agricultural as well as tribal interests. In some cases excessive roads and motorized use compromises the very values people seek out on their public lands.
- ❖ Actively enforce road rules. – Responsible users are being affected by poor decisions and irresponsible use of a few.

It's important for people who are interested in access to ensure they are on Forest Service project mailing lists, and that they keep their personal information updated. Part of the *National Environmental Protection Act* (NEPA) process is public scoping, and that's much easier to accomplish when the forest has a list of "interested people" for a certain geographic area or type of project.

If a project's interdisciplinary team better understands public concern about access, they may be able to develop additional alternatives or modify existing ones to create a more favorable outcome. On the Umatilla NF, the public can contact the Forest Information Officer to add their names to forest mailing lists.

21.3(2b) Key Management Concerns Related to Travel Management

Primary management concerns related to travel management revolve around safety and resource protection, and they are often very similar from forest to forest:

- ❖ How do we prioritize our funding to provide safe roads for travel? – When we don't have the resources to address critical safety issues, such as replacing warning signs or making needed repairs, what actions do we take? How do we evaluate the safety risks and prioritize repairs? What level of risk should we assume before closing a road? Is there a trigger that we use to close a road for safety reasons? How do we meet national regulatory requirements with the budgets we have? The 2004 Roads Analysis identified which roads provide the greatest benefits, but we only have resources to address a few critical safety issues each year. The backlog of critical safety issues continues to grow.
- ❖ How do we effectively engage the public on road management? - We know that people care most about local roads to access favorite locations. How do we get information about these roads to them? With each proposed road change, should we be running "trap lines", like they do during wildfires, and stop at every home and business in the affected area to share information? How do we reach unknown users who live farther away? Do we have the ability to do this and maintain current databases of interested people? If the change impacts recreation or other popular uses, do we know what the uses are and are we fairly informing users?
- ❖ Can we effectively deal with wildfires with fewer roads? - Is there adequate road access for suppressing wildfires? Are there road management actions that can address resource concerns while maintaining options for fire suppression access (ex. gates or removable barricades)? Should we maintain more roads around historic structures or personal cabins? If so, are those roads open to the public or for administrative use only? If they are open for administrative use only, how do we get the public to understand and respect the road's purpose? How do we maintain such roads when we can't afford maintenance on highly traveled routes?
- ❖ How do we address roads which access historic, cultural resources, and/or valued traditional lands? – Knowing that many current roads were foot, horse, or wagon trails which accessed historic or cultural places – how do we address people abusing or damaging these resources? Is this a large concern, or something that rarely happens? If others enter known Native American cultural areas, such as traditional berry picking areas, or to mountain climb on revered properties, how do we mitigate for this?

- ❖ What is the appropriate level of access for forest administration? - How do we address road maintenance that is generated by heavier administrative use? Will it result in unacceptable resource issues? How do we effectively integrate administrative and public access needs with resource needs and issues?

21.3(2c) Primary Legal Constraints on Travel Management

The Forest Roads and Trails Act (FRTA) provides authority for many of the things we do in regards to managing the road system. One key item is the requirement to “construct and maintain an adequate system of roads” to support forest management objectives. Much of FRTA is carried forward into policy in various manuals and handbooks found in the Forest Service directives system.

Primary legal constraints on travel management that were considered include:

- Forest Roads and Trails Act (FRTA)
- National Forest Management Act
- Highway Safety Act
- National Environmental Policy Act (NEPA)
- Authorizations (easements, leases, permits, rights & reservations, and agreements)
- Public Roads (prescriptive rights, RS 2477, etc.)

21.3(2d) Amount of Resources and Skills Available for the Analysis

Journey-level specialists at the Supervisor’s Office designed the analysis and compiled the data, which was then reviewed at the Ranger Districts for accuracy. Among the participants of this project, there were about 210 employee-days expended, at a total cost of approximately \$85,410. Personnel involved in the process were:

- | | |
|---|---|
| Wynn Avocette – Forest Operations Staff Officer | Andrew Lacey – GIS Specialist |
| Joe Neer – Forest Engineer | Lizzy Berkley – Forest Wildlife Biologist |
| Lonnie Ruchert – Forest Road Manager | Joan Frazee – Forest Botanist (retired) |
| Lori Seitz – South Zone Road Manager | Allen Madril – Forest Archaeologist |
| Steve Anderson – North Zone Road Manager | David Powell – Forest Silviculturist (retired) |
| Joy Archuleta – Forest Hydrologist | Chris Helberg – Forest Minerals Coordinator |
| Kathy Ramsey – Forest Fish Biologist | Tracii Hickman – Reviewer, Acting Forest Natural Resource Officer |
| John Evans – Forest NEPA/Planning Coordinator | Ian Reid – Reviewer, North Fork John Day District Ranger |
| Larry Randall – Forest Recreation Officer | Bill Gamble – Reviewer, Acting Forest Supervisor |
| Joanie Bosworth – Forest Information Officer | |
| Chris Johnson – Deputy Fire Staff Officer | |
| Tom Thompson – South Zone Range Conservationist | |

21.3(3) Determine Other Data Needs, Quality, and the Ability to Acquire

Specialists also used the data sets listed below to help determine road ratings:

- | | |
|--|---|
| Road Segments Showing Operational Maintenance Level and Surface Type | 5 th -Level Watersheds
Streams and Riparian Areas |
|--|---|

Geological Hazards	Blocked Culverts
Land-type Associations and Soil Map Units	Snake River Basin Steelhead Habitat
Developed Recreation Sites	Middle Columbia River Basin Steelhead Habitat
Land Status	R6 Bull Trout Stream Habitat
Occurrence of Threatened and Endangered Species	Elk Summer Range Habitat
NRIS Wildlife_Sitept	2012 FSVEG Nearest Neighborhood Vegetation
6 th -Level NHD Watersheds	Umatilla Administrative Forest Boundary
Resource Habitat Conservation Areas (RHCA)	NRIS Invasive Species Inventory
Stream Class	Values at Risk from Fire
Watershed Condition Framework Ratings	Firebreaks for Fire
Range Allotments with INFRA Data	100 Foot Contours
Fish Distribution	Administrative Features

The quality of existing available data was sufficient to perform the analysis, however, after the data queries produced results, it became apparent that there is room for improving some query processes for future analyses using this benefit and risk assessment method, as some data required manual manipulation to improve accuracy.

4. Assessing Benefits, Problems and Risks (21.4)

Team members used a *benefit and risk assessment* to categorize 1,661 road segments, totaling about 1,147 miles. The road benefit and risk issues identified by the team included access benefits they provide, as well as risks associated with the road's existence and use.

Each team member developed criteria for evaluating benefits and risks associated with each road segment pertaining to their specialty. Utilizing these criteria, a rating system was developed to evaluate each road segment. Appendix A contains the results of each benefits and risks element, along with a summary of all elements.

These ratings will be used by members assigned to future “project level” interdisciplinary teams to help inform the project's alternatives, NEPA analysis, and management decisions. Public input and local specialist knowledge will also help determine future road management.

21.4(1a) Evaluate Access Needs

Evaluation Criteria Used to Assess Benefits and Risks

Evaluation Sequence: For all elements, criteria for High (3) were applied first. From the remaining segments, the Medium/Moderate (2) criteria were then applied. From the remaining segments, the Low (1) criteria were then applied. The remaining segments were then rated Very Low (0). Some categories only used a high and low benefit.

Access needs are evaluated under four elements:

<u>Recreation and Administrative Facilities Benefit</u> Rec and Admin Uses	<u>Resource Management Benefit</u> Integrated Veg Management (Stand Density)	<u>Fire/Fuels Benefit</u> Values at Risk	<u>Range Benefit</u> Range Improvements and Access
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Recreation and Administrative Facilities Benefit	
Rec and Admin Uses	
<p>Roads provide authorized access to forest improvements for administrative purposes, as well as to private inholdings. Forest improvements include lookout towers, communications sites, utility corridors, special use areas and facilities, Resource Natural Areas, designated permit areas, and designated resource areas. Roads also provide access to developed recreation sites (i.e., trails, campgrounds, picnic areas, recreation residential homes, and camps), and to the general forest area where uses (traditional, dispersed, recreational driving, viewing scenery, etc.) can vary.</p>	<p>3 = High benefit roads</p> <ul style="list-style-type: none"> Access forest improvements, private inholdings, set-aside areas, special use areas, recreation sites (trails, campgrounds, and picnic areas) and recreation residential homes. <p>1 = Low benefit roads</p> <ul style="list-style-type: none"> Are roads that do not meet the criteria of high benefit roads.
Development of Criteria	Larry Randall/Lonnie Ruchert

Resource Management Benefit	
Integrated Veg Management (Stand Density)	
<p>This criterion is derived from the Forest-wide stand density analysis at the HUC6 scale; the analysis was completed in support of the Forest’s program-of-work process for vegetation management projects. It is documented in a silviculture white paper called “Stand density conditions for the Umatilla National Forest: A range of variation analysis” (Powell 2013b). Assume that if a road “touches” a “High” stand density HUC6 then it will be ruled “H”. Then assume if it touches a “Mod” Huc6 it will be rated "M" and so forth.</p>	<p>3 = High benefit roads</p> <ul style="list-style-type: none"> Stand density exceeds the upper limit of the range of variation by a substantial amount, and the subwatershed has 50% or more of its forested acreage in the Active Forestry category, which is acreage available for mechanical treatments to address stand density issues.
	<p>2 = Medium benefit roads</p> <ul style="list-style-type: none"> Stand density exceeds the upper limit of the range of variation by a substantial amount, and the subwatershed has less than 50% of its forested acreage in the Active Forestry category, which is acreage available for mechanical treatments to address stand density issues
	<p>1 = Low benefit roads</p> <ul style="list-style-type: none"> Stands not rated as high or moderate
Development of Criteria	Dave Powell

Fire/Fuels Benefit	
Values at Risk	
<p>Access/egress for protection and evacuation of values at risk to wildfire; access to fire management facilities; access to fuels treatments with fire suppression value.</p>	<p>3 = High benefit roads</p> <p>provides access to:</p> <ul style="list-style-type: none"> A strategically placed fuels treatment that serves as a primary control feature for fire suppression operations. High values at risk for wildfire evacuation, protection, and suppression objectives.
	<p>2 = Medium benefit roads</p> <p>provides access to:</p> <ul style="list-style-type: none"> Isolated areas on ridges or drainage bottoms and may serve as a control feature for fire operations. Remote fire management facilities including helispots, water sources, drop points, and spike camps.
	<p>1 = Low Benefit Roads</p> <ul style="list-style-type: none"> Do not meet the criteria for HIGH or MEDIUM Benefit Roads.
Development of Criteria	Chris Johnson

Range Benefit	
Range Improvements and Access	
<p>Motorized road access to grazing allotments benefits the Forest Service by facilitating the administration and monitoring of grazing permits. Roads eliminate environmental impacts of stock driveways associated with the moving of livestock.</p> <p>Roads also benefit grazing permittees by allowing ease of access to maintain range improvements (corrals, water developments, fencing, etc.) and easier access to livestock.</p>	<p>3 = HIGH Benefit Roads will:</p> <ul style="list-style-type: none"> • Lead to active or vacant allotments and may be within them as well. <p>1 = LOW Benefit Roads will:</p> <ul style="list-style-type: none"> • Provide access to identify and recover unauthorized (lost) livestock in areas outside of active or vacant grazing allotments.
Development of Criteria	Thomas Thompson

21.4(1b) Evaluate Environmental Risks and Social Effects

Environmental risks are evaluated under five elements:

<u>Watershed Risk</u>	<u>Aquatic Species Risk</u>	<u>Noxious Weeds Risk</u>	<u>Terrestrial Wildlife Risk</u>	<u>Engineering Risk</u>
Surface Erosion Potential	ESA Listed Aquatic Species Count	Proximity to Current Infestation	Open Road Density	Engineering Concerns
Mass Erosion Potential	Fish Passage Barrier	Invasive Habitat Potential	Meadow Habitat	
Riparian Proximity	Stream Proximity	Invasive Spread Potential	Riparian Habitat - Conservation Areas (RHCAs)	
Road Stream Crossings	Impacts to Highest Quality Habitat		Summer Range	
Watershed Condition Framework			Nest Trees	
			Watershed Priority-Terrestrial Habitat Effectiveness for TES	

Watershed Risk	
Surface Erosion Potential	
<p>Roads can be a chronic source of elevated fine sediment to streams negatively affecting aquatic habitat. A native surface road is a road constructed from the material occurring on the site, with no added surface material. Graveled and improved surface roads assume that gravel has been added to the surface. Graveled and paved roads are better able to withstand traffic loads, and reduce surface erosion than a native surface road. Surface type is used as the indicator for road surface erosion potential.</p>	<p>3 = High risk roads Native Surface Roads.</p>
	<p>2 = Medium risk roads Graveled and Improved Roads.</p>
	<p>1 = Low risk roads Paved Roads.</p>
Development of Criteria	Joy Archuleta

Watershed Risk	
Mass Erosion Potential	
<p>Roads can influence slope stability and increase mass movement. The principal causes of road induced instability result from increased weight on the hillslope from fill, hillslope oversteepening, removal of slope support in road cuts, alteration of surface runoff paths, and enhanced runoff rates (Sidle et al., 1985). Mass failure either as shallow-rapid landslide, slumping, or debris torrent will be derived from the LTA (Landtype Association Map) for the Blue Mountains (USFS, 2006).</p>	<p>3 = High risk roads Roads intersecting high hazard LTAs.</p>
	<p>2 = Medium risk roads Roads intersecting moderate hazard LTAs.</p>
	<p>1 = Low risk roads Roads intersection only low hazard LTAs.</p>
Development of Criteria	Joy Archuleta

Watershed Risk	
Riparian Proximity	
<p>Many roads built next to streams isolate or disconnect streams from their flood plains, with adverse effects to stream dynamics and associated aquatic biota. Changes to shade density from removing the riparian canopy can affect stream temperature and chemistry. Roads that cross or are located adjacent to streams and floodplains are potential sites for chemical pollutants to enter surface and groundwater. Road segments in Riparian Habitat Conservation Areas (RHCAs) will be rated based on stream class.</p> <p>Note: this is similar to the “Riparian Habitat Conservation Areas (RHCAs)” criterion under Terrestrial Wildlife. However, watershed risk is analyzing physical impacts: the potential effect to water quality, whereas terrestrial wildlife is focusing on the biotic component, including beneficial use by wildlife species.</p>	<p>3 = High risk roads Roads intersecting RHCAs of Class 1 & 2 streams.</p>
	<p>2 = Medium risk roads Roads intersecting RHCAs of Class 3 streams.</p>
	<p>1 = Low risk roads Low – Roads intersecting RHCAs of Class 4 streams.</p>
	<p>0 = Very low risk roads Roads not in RHCAs.</p>
Development of Criteria	Joy Archuleta

Watershed Risk	
Road Stream Crossings	
<p>Road-stream crossings can be a major source of sediment to streams and result from channel fill around culverts and subsequent road-crossing failures. Plugged culverts and fill-slope failures are frequent and often lead to catastrophic increases in stream channel sediment, especially on abandoned or unmaintained roads (Weaver and others 1995). Altered channel widths, slope, and streambed form are found upstream and downstream from stream crossings (Heede 1980), and these alterations in channel morphology may persist for long periods. This factor is an estimate of the number of road-stream crossings on a road segment and is indicative of the relative potential of the road segment to divert the stream and/or potential for fill failure.</p>	<p>3 = High risk roads >2 crossings</p>
	<p>2 = Medium risk roads 2 crossings</p>
	<p>1 = Low risk roads 1 crossing</p>
	<p>0 = Very low risk roads No crossings</p>
Development of Criteria	Joy Archuleta

Watershed Risk

Watershed Condition Framework

<p>Watershed condition is the state of the physical and biological characteristics and processes within a watershed that affect the soil and hydrologic functions supporting aquatic ecosystems.</p> <p>Watershed condition reflects a range of variability from natural pristine (functioning properly) to degraded (severely altered state or impaired). Watersheds that are functioning properly have terrestrial, riparian, and aquatic ecosystems that capture, store, and release water, sediment, wood, and nutrients within their range of natural variability for these processes. When watersheds are functioning properly, they create and sustain functional terrestrial, riparian, aquatic, and wetland habitats that are capable of supporting diverse populations of native aquatic- and riparian-dependent species. In general, the greater the departure from the natural pristine state, the more impaired the watershed condition is likely to be.</p> <p>Watershed condition classification is the process of describing watershed condition in terms of discrete categories (or classes) that reflect the level of watershed health or integrity. Roads were rated based on the three classes in the Forest Service Manual (FSM) used to describe watershed condition (USDA Forest Service 2004a, FSM 2521.1).</p>	<p>3 = High risk roads</p> <p>Road segment mostly in Class 3 watersheds which exhibit low geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.</p>
	<p>2 = Medium (or moderate) risk roads</p> <p>Road segment mostly in Class 2 watersheds which exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.</p>
	<p>1 = Low risk roads</p> <p>Road segment mostly in Class 1 watersheds which exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.</p>
<p>Development of Criteria</p>	<p>Joy Archuleta</p>

Aquatic Species Risk	
ESA Listed Aquatic Species Count	
<p>Location of the road segment compared to the number of ESA listed fish species within the watershed. Note: Chinook salmon in the Middle Columbia River Basin (HUC2=1707) are NOT an ESA-listed species. Chinook salmon in the Lower Snake River Basin (HUC 1706) however, are listed. The rating for any watershed in the Middle Columbia River Basin would be a 2 since there are only 2 listed species present in this HUC. Watersheds in the Lower Snake River Basin (HUC2=1706) support up to 3 listed species.</p>	<p>3 = High risk roads</p> <p>High – Road passes through watershed with 3 listed species. If all three species use portions of the watershed within or near the forest. The road segment will receive a reduced rating if only 1 or 2 listed species use the watershed in this fashion, and the third species only use the main river corridor far downstream of the forest boundary. This qualifier requires professional judgment as to relevant distance to 3d species, by the reviewing biologist for each rated watershed and road segment.</p>
	<p>2 = Medium risk roads</p> <p>Road passes through watershed with 2 listed species. If both species use portions of the watershed within or near the forest. The road segment will receive a rating of Low, if only 1 listed species uses the watershed in this fashion and the other listed species only uses the main river corridor far downstream of the forest boundary. This qualifier requires professional judgment by the reviewing biologist as to relevant distance to multiple species for each rated watershed and road segment.</p>
	<p>1 = Low risk roads</p> <p>Road passes through watershed with 0-1 listed species</p>
Development of Criteria	Kathy Ramsey

Aquatic Species Risk	
Fish Passage Barrier	
<p>Providing up and downstream passage of aquatic species through road crossings in a broad range of flows is important to both anadromous and resident fish populations as well as vertebrate and invertebrate wildlife.</p>	<p>3 = High risk roads</p> <p>Road segments crossing fish bearing streams 3 or more times or blocking access to 0.3 miles of fish habitat.</p>
	<p>2 = Medium risk roads</p> <p>Road segments crossing fish bearing streams 1 or 2 times and blocking access to fewer than 0.3 miles of fish habitat.</p>
	<p>1 = Low risk roads</p> <p>Road segments with no fish bearing crossings or with crossings that meet stream simulation design standards.</p>
Development of Criteria	Kathy Ramsey

Aquatic Species Risk	
Stream Proximity	
Roads near to streams can adversely affect aquatic species.	3 = High risk roads More than 10% of the road segment is within 100 feet of a fish bearing stream
	2 = Medium risk roads More than 10% of the road segment is within 300 feet of a fish bearing stream
	1 = Low risk roads Less than 10% of the road within 300 feet.
Development of Criteria	Kathy Ramsey

Aquatic Species Risk

Impacts to Highest Quality Habitat

<p>The intent of this element is to characterize the impact of the road segment on high quality aquatic habitat (i.e. listed species habitat in refugium 5th HUCs as identified in the 2002 Watershed Prioritization document, and/or within the floodplain of an ESA-listed species occupied stream).</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> Road segment is within or passes through a portion of the watershed mapped as highest quality fish habitat on the forest in the Umatilla NF Watershed Prioritization. <p>This rating is reduced to MODERATE if the road segment is not near an ESA species occupied stream but meaningful amount of the road segment is still within a high-quality refugium watershed. This required individual segment review by fisheries biologist to refine the initial rating, based on professional judgment. GIS algorithm possibly could be rewritten to capture this refinement of original rating description.</p>
	<p>2 = Medium (or moderate) risk roads</p> <ul style="list-style-type: none"> Portion of the road segment is within the floodplain of occupied stream habitat of ESA listed aquatic species in a watershed that is not identified as a high-quality refugium watershed. Only the following ESA-listed species are considered: ONTS (Lower Snake River Basin, HUC 1706 only); SACO and ONMY1 wherever they occur. Only ONTS in Lower Snake River Basin HUC2 are ESA-listed. Do not apply algorithm to ONTS in Middle Columbia River Basin HUC 1707). Occupied habitat for SACO and ONMY1 apply wherever it occurs. <p>Species-specific fish distribution layers should be used for this purpose with floodplain defined as road segment within 300 feet of stream segment where an ESA-listed species is present (consistent with Category 1 PACFISH definition). See note in High rating section re roads in refugia watersheds that are outside the floodplain of stream segments used by listed species.</p>
	<p>1 = Low risk roads</p> <ul style="list-style-type: none"> Road segment not near occupied ESA listed aquatic species habitat or habitat mapped as aquatic refuge habitat in Watershed Prioritization. <p>Road segments strictly on the ridgeline between a high-quality refugium watershed and a non-refugium watershed will default to a rating of 2 if majority of the road segment falls within the refugium watershed. This required individual review by fisheries biologist to refine the initial rating for segments spanning ridgetops, based on professional judgment. GIS algorithm possibly could be rewritten to capture this refinement of original rating description.</p>
	<p>Development of Criteria</p>

Noxious Weeds Risk	
Proximity to Current Infestation	
<p>This factor considers the number of infested acres occurring within 300ft a road. Assume high risk weeds have a higher priority than low risk weeds.</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> • Large infestations (>65 acres) of high risk noxious weed species are located 300 feet of a road.
	<p>2 = Medium (or moderate) risk roads</p> <ul style="list-style-type: none"> • Moderately sized infestations (<= 65 acres) of high risk noxious weed species are located within 300 feet of a road.
	<p>1 = Low risk roads</p> <ul style="list-style-type: none"> • Low Risk Noxious weed infestations are present within 300 feet or no infestations are adjacent to the road segment.
Development of Criteria	Joan Frazee

Noxious Weeds Risk	
Invasive Habitat Potential	
<p>Likelihood of noxious weed establishment and spread along road corridor based on habitat potential. This factor considers within a 300ft road buffer a) grassland, shrubland, and warm-to-dry forest (PIPO) with a canopy closure of less than 40%; b) warm, dry-to-moist forested PVG's plus warm-to-hot forested PVG with more than or = 40% canopy closure and all meadow types and c) cool-to-cold and moist-to-wet forested PVG's.</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> • High habitat potential for noxious weed invasion and spread. Road segment vegetation dominated by grassland, shrubland, or warm-to-dry forest with a canopy closure of less than 40%.
	<p>2 = Medium (or moderate) risk roads</p> <ul style="list-style-type: none"> • Moderate habitat potential for noxious weed invasion and spread. Road segment vegetation dominated by warm, dry-to-moist forested PVG's, warm-to-hot, dry forested PVG's with more than 40% canopy closure or meadow types.
	<p>1 = Low risk roads</p> <ul style="list-style-type: none"> • Low habitat potential for noxious weed invasion and spread. Road segment vegetation dominated by cool-to-cold and moist-to-wet forested PVG's.
Development of Criteria	Joan Frazee

Noxious Weeds Risk	
Invasive Spread Potential	
Likelihood of noxious weed establishment and spread along road corridor (300ft buffer) based on grazing related disturbances and activities.	3 = High risk roads <ul style="list-style-type: none"> Over 50% of the road segment's buffered length is in an Active or Combined allotment
	2 = Medium risk roads <ul style="list-style-type: none"> Over 50% of the road segment's buffered length is in a Vacant allotment
	1 = Low risk roads <ul style="list-style-type: none"> Over 50% of the road segment's buffered length is outside an allotment. Assume only Vacant, Active, and Combined allotments.
Development of Criteria	Joan Frazee

Terrestrial Wildlife Risk	
Open Road Density	
The intent of this element is to characterize open road density. Higher road density and traffic levels can affect wildlife populations by habitat loss and fragmentation, acting as barriers to movement (mostly of smaller animals), and direct mortality (vehicle-animal collisions) or indirect mortality (increased energy expenditure; displacement). Traffic levels may also influence wildlife distribution across the landscape and impact habitat effectiveness relating to security cover, increase vulnerability to hunting and trapping, and forage quality. One mi/mi ² is a common threshold used for many wildlife species. Roads analyzed in 2004 will also be included. Use the 50/50 rule to place a road into a category. Road density per square mile throughout the forest.	3 = High risk roads <ul style="list-style-type: none"> Open road density greater than 2 mi/mi²
	2 = Medium risk roads <ul style="list-style-type: none"> Open road density greater than 1 mi/mi² but less than or equal to 2 mi/mi²
	1 = Low risk roads <ul style="list-style-type: none"> Open road density is less than or equal to 1 mi/mi²
Development of Criteria	Lizzy Berkley

Terrestrial Wildlife Risk	
Meadow Habitat	
<p>The intent of this element is to identify the risk to the road segment to meadow habitat (moist/wet/dry). Meadows are important habitat for many wildlife species for breeding, nesting and foraging. Roads and associated traffic levels can disturb and displace wildlife, can act as barriers to movement of smaller species that depend on meadow habitat, and can impact habitat functionality and integrity.</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> • Intersects a meadow
	<p>2 = Medium risk roads</p> <ul style="list-style-type: none"> • Roads within 150 feet of a meadow
	<p>1 = Low risk roads</p> <ul style="list-style-type: none"> • Roads within 660 feet of a meadow
	<p>0 = Very low risk roads</p> <ul style="list-style-type: none"> • Road is not within 660 feet of a meadow
Development of Criteria	Lizzy Berkley

Terrestrial Wildlife Risk	
Riparian Habitat Conservation Areas (RHCAs)	
<p>Road segments in Riparian Habitat Conservation Areas (RHCAs). The intent of this element is to identify and score the level of risk the road segment has to the biotic (terrestrial and semi-aquatic) component of RHCAs. Riparian habitat is important for many terrestrial and semi-aquatic wildlife species. Roads can be a major source of sediment in streams, can isolate or disconnect streams from their floodplains, and can impact habitat functionality for wildlife populations (i.e. connectivity, security/escapement, foraging, nesting, etc.). Class 1 & 2 streams have a 300 foot buffer, Class 3 streams a 150-foot buffer and Class 4 streams are buffered 50 feet.</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> • Roads intersecting RHCAs of Class 1 & 2 streams
	<p>2 = Medium risk roads</p> <ul style="list-style-type: none"> • Roads intersecting RCHAs of Class 3 streams
	<p>1 = Low risk roads</p> <ul style="list-style-type: none"> • Roads intersecting RCHAs of Class 4 streams
	<p>0 = Very low risk roads</p> <ul style="list-style-type: none"> • Roads not in RHCAs
Development of Criteria	Lizzy Berkley

Terrestrial Wildlife Risk	
Summer Range	
<p>The intent of this element is to identify the level of risk a road segment poses on elk summer range habitat (RMEF 1999). Higher road densities affect elk distribution and security habitat. The higher score will be chosen when the road alternates between risk values. Assume that if 50% of the road segment is in one category then the whole road will be categorized that way.</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> Road segment \leq 0.5 miles from summer range
	<p>2 = Medium risk roads</p> <ul style="list-style-type: none"> Road segment between 0.5 and 1 mile from summer range
	<p>1 = Low risk roads</p> <ul style="list-style-type: none"> Road segment \geq 1 mile from summer range
Development of Criteria	Lizzy Berkley

Terrestrial Wildlife Risk	
Nest Trees	
<p>The intent of this element is to identify road segments that have raptor (including hawks, eagles, owls and falcons) nests near (within 660 ft) the road. Raptors are sensitive to human disturbance during breeding and nesting season. Road segments that contain nests nearby receive one point.</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> Road segments with raptor nests within 660 feet
	<p>0 = Very low risk roads</p> <ul style="list-style-type: none"> No raptor nests within 660 feet
Development of Criteria	Lizzy Berkley

Terrestrial Wildlife Risk	
Watershed Priority – Terrestrial Habitat Effectiveness for TES	
<p>The intent of this element is to evaluate the level of risk a road segment poses to priority watersheds that were identified during the watershed prioritization process for restoration opportunities (Umatilla NF (2002)). During this process, watersheds were classified into three categories based on quantity, quality, resiliency, and connectivity of habitats for species of conservation concern. High restoration need/opportunity equated to a high score in terms of risk of a road because species in these areas may be more at risk to additional disturbance due to lower quality and less resilient habitat. Segments that crossed multiple watersheds received the watershed rating where most of the road segment occurred.</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> • High restoration need
	<p>2 = Medium (or moderate) risk roads</p> <ul style="list-style-type: none"> • Moderate restoration need
	<p>1 = Low risk roads</p> <ul style="list-style-type: none"> • Low restoration need
Development of Criteria	Lizzy Berkley

Engineering Risk	
Engineering Concerns	
<p>Safety or stability issues known to exist (not identified elsewhere in the analysis) are included here.</p> <p>Risks are to road users and streams.</p> <p>Safety issues include, but are not limited to, danger trees, excessive amounts of limbs protruding into the traveled way, and undermining. Unstable shoulders can be safety issues as well.</p>	<p>3 = High risk roads</p> <ul style="list-style-type: none"> • Known safety issues on roads designated for public travel (OpML2-5) that are a current or imminent hazard to road users. • Known unstable areas or slope failures on any road that are actively contributing sediment to streams.
	<p>2 = Medium risk roads</p> <ul style="list-style-type: none"> • Known safety issues on roads designated for public travel (OpML2-5) that have a high potential to become a hazard to road users. • Known unstable areas or slope failures on any road with little or no potential to contribute sediment to streams.
	<p>1 = Low risk roads</p> <ul style="list-style-type: none"> • No known safety issues. Concern for lack of maintenance that results in general safety and resource issues. • Assigned to all road segments that are not High or Medium.
Development of Criteria	Lonnie Ruchert

There is no evaluation criteria table for Heritage Resources. Due to the sensitive nature of this resource, the Forest Heritage Program Manager/Tribal Liaison recommended not disclosing heritage road ratings in this report; however, as future projects are proposed, each road is evaluated for its potential effects to these resources.

Tribal Uses/Traditional Cultural Property/Heritage Resources:

The road system increases access to sites, making them more accessible for vandalism and theft of artifacts, although many forest visitors enjoy learning about local history and visiting small interpretive sites. The road system has positive and negative effects on cultural and traditional sites. The degree of isolation of these sites is important to traditional users and they were used long before there were roads. The road system allows other users access to the same areas, which can cause conflicts and a loss of the values important to Native Americans. Effects can extend beyond individual watershed boundaries.

21.4(1c) Evaluate Costs for Maintaining and Operating the Road System

National Forest System roads are maintained to varying standards depending on the level of use and management objectives. Roads may currently be maintained at one level, with plans for maintenance at a different level at some future date.

- The *Operational Maintenance Level* (OpML) is the maintenance level currently assigned to a road considering today's needs, road conditions, budget constraints, and environmental concerns. It defines the level to which the road is currently being maintained.
- The *Objective Maintenance Level* (ObML) is the maintenance level that is planned for the future, and reflects a decision (informed by an appropriate level of public involvement) that has been made by a responsible official. The objective maintenance level may be lower, the same as, or higher than the operational maintenance level.

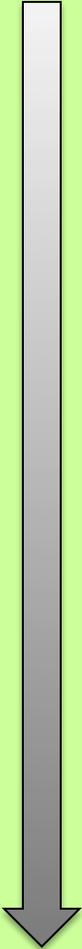
There are five maintenance levels used by the Forest Service to determine the work needed to preserve the investment in the road.

In 1966, passage of the Highway Safety Act authorized the federal government to set and regulate standards for highways. The Highway Safety Act resulted in the national adoption of the Manual on Uniform Traffic Control Devices.

National Forest System Roads maintained at levels 3, 4, and 5 (see descriptions in Table E) are subject to Highway Safety Act standards, including appropriate use of regulatory and warning signs.

The five maintenance levels, as described in *Forest Service Handbook (FSH) 7709.59 – Road System Operations and Maintenance Handbook*, are as follows:

Table E – Road Maintenance Levels

<p>Greatest Access</p>  <p>Least Access</p>	<p>Highway Safety Act Roads (Roads Maintained for Passenger Car Travel)</p>	<p>LEVEL 5. Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. “Manual on Uniform Traffic Control Devices” is applicable. The appropriate traffic management strategy is "encourage."</p>
		<p>LEVEL 4. Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. “Manual on Uniform Traffic Control Devices” is applicable. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.</p>
		<p>LEVEL 3. Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. “Manual on Uniform Traffic Control Devices” is applicable. Warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations. Roads in this maintenance level are typically low speed with single lanes and turnouts. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.</p>
		<p>LEVEL 2. Assigned to roads open for use by high clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing, such as W-18-1 “No Traffic Signs,” may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are “encourage”, “accept”, “discourage”, or “prohibit”.</p>
		<p>LEVEL 1. These are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. The only appropriate traffic management strategy is "prohibit". These roads are not shown on motor vehicle use maps.</p> <p>Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the times they are used, but are normally managed at level 2 during these times. However, while being maintained at level 1, they are closed to all vehicular traffic.</p> <p>In many cases, roads in level 1 maintenance are coincident (share the same route) with motorized trails, and are shown on motor vehicle use maps as such.</p>

The costs of operating and maintaining the current road system are substantial, and current and past funding levels fall far short of what is needed. Thus, the road system has been in a gradual state of general decline for about two decades. Road Managers have been working with line officers and staff to adjust maintenance levels as deferred maintenance increases and roads continue to degrade. Table F shows the changes in miles by Operational Maintenance Level over the past eleven years.

Table F – Changes in Miles by Operational Maintenance Level

	Operational Maintenance Level					Total Miles**
	5	4	3	2	1	
2004	78	201	571	1,781	2,223	4,854
2015	89	89	331	1,897	2,215	4,621
Net Changes*	+11	-112	-240	+116	-8	-233

*Increase in OpML 5 miles is due to road 64 paving (both ends) shortly after the 2004 data was generated. Most reductions took place in 2008 and 2011.

** Reduction in total miles is due to 142 miles of roads that were decommissioned during this 11 year period. The remaining 91 miles resulted from corrections of data errors detected during production of the Motor Vehicle Use Maps and various project analyses. Many of these involved County Roads listed in Cooperative Road Agreements, incorrectly shown as National Forest System Roads under Forest Service jurisdiction.

Routine maintenance on the Umatilla NF is best planned on a five year cycle, since some activities are required only once every five years. If current Highway Safety Act roads (Operational Maintenance Levels 3-5) were up to standard, it would require an annual average (over each five year maintenance cycle) of \$350,000 to maintain them to standard. NOTE: This does not include high-cost, cyclical maintenance projects such as chip-seals or aggregate resurfacing projects.

Routine maintenance, however, is only one cost associated with operating the road system. When other costs are added to the average annual maintenance cost, the figures become staggering. To quantify the amount that is needed on an annual basis, to maintain the road system to its current level, we calculated the sum for personnel and fleet involved with road management, recurring fixed costs (Motor Vehicle Use Maps and employee travel/training), and annual average needs for routine road maintenance. To that, we added another 3% for contingencies needed to fund construction needs associated with unforeseen occurrences related to road safety and resource protection issues. Table G shows the annual needs to operate and maintain the transportation system to its current level, after eliminating deferred maintenance. NOTE: This does not include high-cost, cyclical maintenance projects such as chip-seals or aggregate resurfacing projects. Adding these would bring annual needs to \$6.6 million, per Washington Office estimate.

Table G – Costs of Operating the Current Road System to Standard

**2015 Costs of Operating the Current Road System to Standard
(with no deferred maintenance backlog)**

Personnel	Fleet	Fixed Costs	Maintenance	Contingencies	Total Cost
\$500	\$62	\$10	\$350	\$28	\$950

(\$ in thousands)

As roads continue to degrade, safety and resource issues associated with deferred maintenance increase. Identifying a financially and ecologically appropriate road system is difficult, as there will be an increasing component of resource issues to address as roads degrade. Table H shows a breakdown of costs of operating a financially sustainable road system at the “average annual funding” level. NOTE this does not include high-cost, cyclical maintenance projects such as chip-seals or aggregate resurfacing projects.

**Table H – Costs of Operating a Financially Sustainable Road System to Standard
Based on “Average Annual Funding”**

**2015 Costs of Operating a Financially Sustainable Road System to Standard
Based on “Average Annual Funding”
(with no deferred maintenance backlog)**

Personnel	Fleet	Fixed Costs	Maintenance	Contingencies	Total Cost
\$330	\$30	\$10	\$80	\$0	\$450

(\$ in thousands)

Personnel currently directly involved with road management on the Umatilla NF are:

Wynn Avocette	Operations Staff Officer	Provides general oversight for engineering, fleet, safety, archaeology, recreation/wilderness, timber contracting; liaises with lands and minerals staff.
Joe Neer	Forest Engineer	Direct supervision of all engineering departments including Roads & Facilities.
Marilyn Johnson	Construction Engineer	Specializes in timber sale road reconstruction, road decommissioning work, and miscellaneous construction projects.
Lonnie Ruchert	Forest Road Manager	Coordinates road management and maintenance across the forest while providing support to the two zone road managers.
Lori Seitz	South Zone Road Manager	Manages over 2,800 miles of roads on two ranger districts (Heppner and North Fork John Day).
Steve Anderson	North Zone Road Manager	Manages over 1,800 miles of roads on two ranger districts (Pomeroy and Walla Walla), and is also the north zone trails manager.
Paul Gerber	Civil Engineer	Designs aquatic organism passages, as well as other technically specialized construction projects.
Jamey Stogsdill	Civil Engineer	Provides a diverse array of support for projects involving facilities, roads, water systems, and recreation related construction.
John Manderscheid	Civil Engineering Technician	Support to all engineering programs with a specialty in facilities management; is also gaining experience in road management, maintenance, and design.
Trista Still	Civil Engineering Technician	Entire program support and expertise in real property and deferred maintenance, which requires a thorough understanding of the Forest Service INFRA database.

Commercial road users perform maintenance that is commensurate with their use, i.e. they leave the roads in a condition that is generally the same as when they began using them. They are authorized to perform work to the extent necessary to facilitate the commercial activity.

5. Describing Opportunities and Setting Priorities (21.5)

21.5(1) Management Opportunities and Priorities

Multiple Use and Single Purpose Access Needs

Forest roads are classified by function: Arterial, Collector, or Local.

- **ARTERIAL** - A road that provides service to large land areas and usually connects with other arterial roads or public highways.
- **COLLECTOR** - A road that serves smaller areas than an arterial road, and that usually connects arterial roads to local roads or terminal facilities. A collector road provides service to smaller land areas than an arterial road. It usually connects forest arterial roads to local forest roads or terminal facilities.
- **LOCAL** - A road that connects a terminal facility with collector roads, arterial roads, or public highways and that usually serves a single purpose involving intermittent use.

Many of the forest arterials evolved from uses prior to the existence of the national forest. Pioneers and homesteaders improved trails used by Native Americans to facilitate use by wagons, and later...automobiles. As the road system was developed, collector roads reached further into the forest, and local roads branched from these to access smaller areas of interest.

Most local roads were constructed as “single purpose” roads, to access areas of interest (timber sale areas) to extract forest products. These single purpose roads were numerous, and the public also began using them for recreation and extracting personal forest products, such as firewood, mushrooms, and berries. This use was accepted, but it became apparent this use often led to resource issues and further expansion through user created routes. In the late 1970s or early 1980s, it became policy to close new timber access roads after their construction, and only use them for the single purpose that was intended. The established use on the existing system was generally allowed to continue, until the ATM Plans in the early 1990s were implemented.

As the road system was developed, short, temporary roads were needed to provide access to individual harvest units within timber sale areas. Policy was to construct these short roads to the minimum standard necessary to haul the product, use it, and block the road to prevent subsequent public use. In many cases, these roads were not adequately blocked, and the public continued to use them freely.

Some roads originally constructed for a single purpose have become “multiple use” roads. A multiple use road allows access to other sites on the forest, such as berry picking areas or recreation sites. Multiple use roads may have a variety of users. Most of these roads are considered “high benefit”, and most high benefit roads trump any “risk” associated with them. In other words, our goal would be to keep these roads available for access, and if they had a “high risk” rating we would look for ways to mitigate those risks to resources.

Too Many Roads

Advances in technology, related to forest product extraction, have resulted in a reduced dependence upon road access. Newer forms of motorized equipment are now able to access roads that have been closed, increasing resource issues, as well as creating new unauthorized routes. If there's a more practical alternative to extract or access a forest resource – and if the existing road is considered “high risk” – decommissioning may be recommended and implemented when funding becomes available. If a road is considered “low risk”, and there is a benefit to keeping it, it may be placed in storage, or possibly converted to a trail.

In this, the public's observation is correct: Roads available for their use continue to decrease. They are usually the “bad actor” roads or “extra” roads the agency does not have money to maintain, other than when they are used for a project. *Current budgets do not provide enough money to the agency to maintain the roads that are needed to manage the national forests.*

It's important for the public to comment on roads during project scoping; this input is a component of decision-making, and the Umatilla NF may learn about something new about a road's use or history that could give added value to a road.

Changes In Perception

In the early 1980s, the way we view roads started to change. Off Highway Vehicles came to the scene, which created a demand for access suited for this use. At the same time, scientific research was showing effects of stream sedimentation on aquatic species and human-caused disruption to wildlife species. The National Environmental Policy Act (NEPA) of 1970 established requirements for many federal proposed actions to be analyzed, and to provide documentation showing the proposed actions were assessed for their site-specific impacts to the human environment. Some administrative actions are exempt, as well as other “routine” actions that have no extraordinary circumstances associated with them. Roads are being scrutinized from every angle, and are no longer a “given”, due to declining budgets and greater scientific ability to assess their attributes (benefit/risk) and increased understanding of their impacts on natural resources.

Management Opportunities

Section 24.1 *Assessing Benefits, Problems, and Risks* describes how forest specialists used a point system to assess benefits and risks associated with road segments. Opportunities, site-specific considerations, issues, and existing conditions will be very similar to those items considered in the benefit and risk assessment, listed in 21.4(1a) and 24.1(1b).



Current budgets do not provide enough money to the agency to maintain the roads that are needed to manage the national forests.



Below is an overview of the 4 Road Management Categories of roads on the Umatilla NF, read clockwise from the bottom left.

Emphasize Maintaining for Established Uses. Invest Funds to Mitigate Risks.	Category 2 <u>HIGH BENEFIT</u> <u>HIGH RISK</u>	Category 3 <u>LOW BENEFIT</u> <u>HIGH RISK</u>	Emphasize (in order of priority): Decommissioning Placing in Level 1 Storage Converting to Trail
Emphasize Maintaining for Established Uses.	Category 1 <u>HIGH BENEFIT</u> <u>LOW RISK</u>	Category 4 <u>LOW BENEFIT</u> <u>LOW RISK</u>	Emphasize (in order of priority): Converting to Trail Placing in Level 1 Storage Decommissioning



Roads in categories 1 and 2 are “high benefit”. The benefits these roads provide outweigh the risks associated with them. These are the roads for which we prioritize funding...to maintain them and strive to successfully mitigate risks they pose.

Roads in categories 3 and 4 are “low benefit”. Those that are of “high risk” (category 3) are likely not needed for future use, as the benefits they provide may not justify the costs and efforts of successfully mitigating the risks associated with them. Those that are of “low risk” (category 4) also may not be needed for future use, but since there is little risk associated with them, they may be more suitable for conversion to trails or placement into storage.

The following page has a breakdown of these four categories in detail. The bulleted items track with the evaluation criteria in sections 24.1(1a) and 24.1(1b), and are items an interdisciplinary team considers at the project level. Cumulative effects will be driven by a final project-specific list of issues or landscape considerations.

Category 2

High Benefit / High Risk Roads

484.53 Miles

Emphasize maintaining access:

- To forest improvements, private inholdings, set-aside areas, special use areas, recreation sites (trails, campgrounds, and picnic areas) and recreation residential homes.
- To Active Forestry areas, where mechanical treatments can be used to address stand density issues.
- For protection and evacuation of values at risk to wildfire, to fire management facilities, and to fuels treatment areas with fire suppression value.
- To grazing allotments and range improvements.

Consider mitigating risks associated with roads:

- With high-risk noxious weed infestations within 300 feet.
- That access areas with habitats that present a high or moderate potential for noxious weed invasion and spread.
- That are within an allotment.
- That have native, improved, or aggregate surface types.
- That intersect high or moderate hazard Land Type Associations.
- That intersect RHCAs of Class I, 2, or 3 streams (for Watershed risk).
- That have multiple stream crossings.
- That intersect class 3 or 2 watersheds, as defined in the Watershed Condition Framework.
- That intersects a watershed containing multiple listed aquatic species.
- That cross fish bearing streams without meeting stream simulation standards.
- That block fish habitat.
- That are within 300 feet of a fish bearing stream.
- That are within the flood plain of occupied stream habitat of ESA listed aquatic species SACO, ONTS, and ONMY1.
- That are within a watershed with a high or moderate restoration need, as per the Watershed Prioritization – Terrestrial Wildlife Composite Rating (Umatilla NF, 2002).
- That are within 150 feet of a meadow.
- That intersect RHCAs of Class 1, 2, or 3 streams (for Wildlife risk).
- That are within an area of open road density of more than 1 mi./sq. mi.
- That are within 1 mile of summer range.
- That are within 600 feet of raptor nests.
- That have known safety issues.
- That have known unstable areas or slope failures.

Category 3

Low Benefit / High Risk Roads

160.49 Miles

Emphasize (in order of priority):

- Decommissioning
- Placement in level 1 storage
- Conversion to trails

Consider decommissioning roads:

- With high-risk noxious weed infestations within 300 feet.
- That access areas with habitats that present a high or moderate potential for noxious weed invasion and spread.
- That are within an allotment.
- That have native, improved, or aggregate surface types.
- That intersect high or moderate hazard Land Type Associations.
- That intersect RHCAs of Class I, 2, or 3 streams (for Watershed risk).
- That have multiple stream crossings.
- That intersect class 3 or 2 watersheds, as defined in the Watershed Condition Framework.
- That intersects a watershed containing multiple listed aquatic species.
- That cross fish bearing streams without meeting stream simulation standards.
- That block fish habitat.
- That are within 300 feet of a fish bearing stream.
- That are within the flood plain of occupied stream habitat of ESA listed aquatic species SACO, ONTS, and ONMY1.
- That are within a watershed with a high or moderate restoration need, as per the Watershed Prioritization – Terrestrial Wildlife Composite Rating (Umatilla NF, 2002).
- That are within 150 feet of a meadow.
- That intersect RHCAs of Class 1, 2, or 3 streams (for Wildlife risk).
- That are within an area of open road density of more than 1 mi./sq. mi.
- That are within 1 mile of summer range.
- That are within 600 feet of raptor nests.
- That have known safety issues.
- That have known unstable areas or slope failures.

Category 1

High Benefit / Low Risk Roads

1,022.45 Miles

Emphasize maintaining access:

- To forest improvements, private inholdings, set-aside areas, special use areas, recreation sites (trails, campgrounds, and picnic areas) and recreation residential homes.
- To Active Forestry areas, where mechanical treatments can be used to address stand density issues.
- For protection and evacuation of values at risk to wildfire, to fire management facilities, and to fuels treatment areas with fire suppression value.
- To grazing allotments and range improvements.

Category 2 <u>High Benefit</u> <u>High Risk</u>	Category 3 <u>Low Benefit</u> <u>High Risk</u>
Category 1 <u>High Benefit</u> <u>Low Risk</u>	Category 4 <u>Low Benefit</u> <u>Low Risk</u>

Category 4

Low Benefit / Low Risk Roads

867.23 Miles

Emphasize (in order of priority):

- Conversion to trails
- Placement in level 1 storage
- Decommissioning

Consider maintaining for established uses.

21.5(2) Compare Current Motor Vehicle Use with Desired Conditions in Forest Plan

Current motor vehicle use is generally consistent with the 1990 Forest Plan, but a lot has changed over the past twenty five years. The Forest Plan is currently under revision, and it is expected to contain changes that would be consistent with a changing road system and understanding about how it is being used and how it affects resources and multiple use opportunities.

21.5(3) Identify Unauthorized Routes That Should Be Considered for Designation

No unauthorized routes were included in this analysis. As future project analyses are completed, unauthorized routes may be identified and proposed for designation as National Forest System Roads. Over the past few years, some unauthorized routes have been used as locations for temporary roads on vegetation management projects, and a few have been designated as National Forest System Roads.

6. Reporting Recap (21.6)

21.6(1) List of Key Issues - from 21.3 (1-3)

- *Maintaining Adequate Public and Administrative Access*
 - Public Concerns
 - Keep roads open.
 - Allow mixed use on roads.
 - Fix the roads.
 - Management Concerns
 - How do we prioritize funding to provide safe roads for travel?
 - How do we effectively engage the public on road management?
 - Can we effectively deal with wildfires with reduced access?
 - How do we address roads which access historic, cultural resources, and/or valued traditional lands?
 - What is the appropriate level of access for forest administration?

- *Minimizing Environmental Risks*
 - Public Concerns
 - Protect me (and/or wildlife) from too much noise or conflicting uses.
 - Increase enforcement of existing road management decisions and rules.
 - Management Concerns
 - Is there a need for more emphasis on restoration/mitigation work, and less on routine road maintenance for recreation and administrative traffic?
 - Will allowing public access on roads that we cannot afford to maintain result in an unacceptable level of resource issues?

21.6(2a) Prioritized List of Access Needs

The benefit and risk assessment workbook is designed to be used for sorting roads according to their benefit ratings. It can be used for sorting groups of roads by aggregate benefit categories, or sorting by individual benefit categories. Appendix A contains snapshots of the ratings tables generated by the 2015 TAP's benefit and risk assessment. Appendix C contains the ratings from the 2004 RAP's value and risk assessment.

21.6(2b) Prioritized List of Environmental and Social Risks

The benefit and risk assessment workbook is also designed to be used for sorting roads according to their risk ratings. It can be used for sorting groups of roads by aggregate risk categories, or sorting by individual risk categories. Appendix A contains snapshots of the ratings tables generated by the 2015 TAP's benefit and risk assessment. Appendix C contains the ratings from the 2004 RAP's value and risk assessment.

21.6(2c) Financial Analysis Showing Options for Balancing Annual Costs with Budget Expectations

Table I shows "Average Annual Funding" for routine road maintenance. The variation in available CMRD funds is due to CMLG projects that help fund employees and vehicles. In years where there are significant CMLG projects, it frees up CMRD funding for routine road maintenance. Although the average annual funding amounts to about \$80,000, this variable funding makes it challenging to establish a stable annual road maintenance schedule, especially when funds are required to respond to emergencies, such as flood damage.

Table I - Average Annual Funding from 2011-2015

Fund	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	5-year Averages
CMRD	\$127	\$49	\$27	\$67	\$79	\$70
CMLG	\$12	\$8	\$11	\$10	\$10	\$10
TOTALS >	\$139	\$57	\$38	\$77	\$89	\$80
CWF2	\$55				\$38	\$19
SC06	\$1	\$1				\$0

(\$ in thousands)

NOTE: Co-op deposits (CWF2) and stewardship retained receipts (SC06) are not included in calculation of "average annual funding". Use of CWF2 funds will no longer be appropriate for routine road maintenance, upon exhaustion of funds collected through fiscal year 2013.

Table J shows an estimated "Average Annual Cost of Routine Road Maintenance", based on current road system use, to be more in balance with average annual funding. This table directly correlates with the roads shown in Table K, which would necessitate downgrading 338 miles of Highway Safety Act (HSA) roads that are currently maintained for passenger car travel (OpML 3-5). Those roads are shown on "HSA Roads to Downgrade" in Appendix C, and would no longer receive routine maintenance.

Table J - Average Annual Cost of Routine Road Maintenance

Based on Average Annual Funding of \$80,000

Work Activity (unit)	Cost per Unit	Units per Year	Cost per Year	Comments (HSA = Highway Safety Act)	167.9	< Total HSA Miles
Blading, Spring (mile)	\$ 260	92	\$ 23,816	< all HSA miles once every year	91.6	< Miles per year
Brushing (mile)	\$ 600	34	\$ 20,148	< all HSA miles once every 5 years	33.6	< Average miles per year
Culvert Cleaning (mile)	\$ 150	17	\$ 2,519	< all HSA miles once every 10 years	16.8	< Average miles per year
Danger Tree Removal (mile)	\$ 500	17	\$ 8,395	< all HSA miles once every 10 years	16.8	< Average miles per year
Ditch Cleaning (mile)	\$ 270	56	\$ 15,111	< all HSA miles once every 3 years	56.0	< Average miles per year
Slough & Slide Removal (cubic yard)	\$ 15	260	\$ 3,900	< perennial problem areas	260	< Average cubic yards per year
Sign Maintenance & Replacement (year)	\$ 1	600	\$ 600	< annual needs	600	< Average dollars per year
Misc. Custodial Work (year)	\$ 1	1,400	\$ 1,400	< annual needs	1400	< Average dollars per year
Damage Repair/Structure Maint. (year)	\$ 1	4,200	\$ 4,200	< annual needs	4200	< Average dollars per year

\$ 80,089 < Total annual needs

Table K shows the list of roads (all remaining Highway Safety Act Roads) that correlates with Table I, which shows an annual need of approximately \$80,000 for routine road maintenance.

Table K – Sustainable Highway Safety Act Roads

Based on Average Annual Funding of \$80,000

Road No.	Asphalt Surfaced Roads	
	Termini	Length
3700100	Woodland Sno-park	0.2
3700200	Andies Prairie Sno-park	0.3
47	End of County Road 9233 to End of Pavement	7.7
4700160	Road 47 to Junction of Road 4700165	0.2
4700165	Road 4700160 to Milepost 0.1	0.1
52	End of County Road 531 to Junction of Road 51	33.5
53	County Road 603 to Junction of Road 5300170	6.5
53	Junction of Road 5300170 to Highway 395	15.5
63	County Road 83 to End of Pavement	0.1
64 (Jubilee End)	Highway 204 to End of Pavement	3.5
64 (Touchet End)	End of Pavement to County Road 9115	7.2
6400250	Road 64 to End of Loop	1.5
Total Miles of Asphalt Surfaced Roads >		76.3

Table K continued on next page...

	Crushed Aggregate Surfaced Roads	
Road No.	Termini	Length
10	Grant County Road 24 to Olive Lake	8.5
1000480	Road 10 to Olive Lake Campground	0.6
1000481	Road 1000480 to End of Road	0.6
1000482	Road 1000480 to End of Loop	0.1
2039	Highway 207 to Milepost 2.4	2.4
21	County Road 799 to County Road 847	16.1
32	Forest Boundary to Bridge at Milepost 1.1	1.1
40	End of Pavement to Junction of Road 42	7.9
47	End of Pavement to Road 4713	3.8
55	Highway 395 to Road 5506	5.6
62	Road 63 to Junction of County Road 520	33.9
63	End of Pavement to Junction of Road 62	3.5
64 (Jubilee End)	End of Pavement to Junction of Road 6400250	7.5
	Total Miles of Crushed Aggregate Surfaced Roads >	91.6
	Total Miles of Sustainable HSA Roads >	167.9

21.6(3a) Map and list of routes that are needed for annual, year-round or seasonal motor vehicle use (Mtc Levels 2-5)

- For the list, see Appendix C – *Roads Needed for Constant Motor Vehicle Use*. - This list contains all operational maintenance level 2-5 roads currently on the Umatilla NF, although some of these roads are also included in the list of roads that are not likely needed for future use. **Until there is a decision to change how a road is managed, it is considered to be needed as currently managed.**
- For the maps, see Appendix D – *North and South Zone Roads by OpML*. – These maps show all roads on the Umatilla NF by operational maintenance level. Operational maintenance levels 2-5 (shown in blue) are those that needed for annual, year-round or seasonal motor vehicle use at this time. For maps showing road management categories, see Appendix D - *...Road Management Categories*.

21.6(3b) Map and list of routes that are needed for long-term resource management purposes, but are suited for intermittent project use. (Mtc Level 1 roads - could be put in storage between project uses)

- For the list, see Appendix C – *Stored Routes Needed for Management*. This list contains all operational maintenance level 1 roads currently on the Umatilla NF, although some of these roads are also included in the list of roads that are the most likely candidates for decommissioning.

- For the maps, see Appendix D – *North and South Zone Roads by OpML*. - These maps show all roads on the Umatilla NF by operational maintenance level. Operational maintenance level 1 roads (shown in red) are those that are needed for long-term resource management purposes, but are suited for intermittent project use at this time.

21.6(3c) Map and list of routes with minimal or no identified future motorized access needs. (These are candidates for decommissioning or conversion to other uses)

- For the list, see Appendix C – *Likely Not Needed for Future Use*. – This list contains all roads that have been evaluated in a benefit and risk assessment, and classified as “Road Management Category 3” (low benefit – high risk). These roads are also included in the two previous lists.
- For the maps, see Appendix D - *...Road Management Categories*. – Four maps show all roads that have been evaluated in a benefit and risk assessment, and classified as “Road Management Category 3” (low benefit – high risk). These roads are also shown on the *North and South Zone Roads by OpML* maps.

Again, the Umatilla NF process for road decisions occurs at the at the project scale, concurrent with development of a proposed action and alternative, to inform an impending decision. In addition, the appendices include maps that display the Road Management Category that has been assigned to each road segment, resulting from the 2004 RAP and the 2015 TAP, that can be used to identify opportunities during development of future proposed actions and alternatives.

Roads without a Road Management Category have been analyzed by past project-scale analyses, and their current status reflects those decisions. As these roads are included in future project-scale analyses, the benefit and risk assessment process used for the 2015 TAP should be used to categorize roads at that time. This assessment method will continue to be improved as technology develops. Existing Road Management Categorizations for specific road segments are subject to change with field verification, and this needs to be documented for informing subsequent travel management decisions.

21.6(3d) Map of Any Potential Additions to the Road System

No potential additions to the road system were identified.

List of Appendices

Appendix A – 2015 TAP Benefit Risk Assessment

- Aquatics Ratings
- Benefit and Risk Summary – Sorted by Road Management Category
- Benefit Risk Rating System
- Engineering Ratings
- Noxious Weeds Ratings
- Range Management Ratings
- Recreation and Administration Ratings
- Resource Management Ratings
- Road Management Summary
- Watershed Ratings
- Wildlife Ratings

Appendix B – Financial Analysis

- Adjusted Average Annual Cost (balanced with Average Annual Funding)
- Average Annual Funding
- Current Average Annual Cost

Appendix C – Road Lists

- Decommissioned Roads
- HSA Roads to Downgrade (Highway Safety Act Roads that would likely need to be downgraded to achieve a financially sustainable road system)
- Mileage Reconciliation (an accounting of all road miles to comply with Subpart A)
- RAP 2004 (Value and Risk Assessment)
- Roads Analyzed by Projects (a list of roads included in project analyses since 1993, not including those analyzed in the 2004 RAP)
- Roads Converted to Trails
- Roads Likely Not Needed for Future Use
- Roads Slated for Decommissioning
- Routes Needed for Constant Motor Vehicle Use (OpML 2-5 roads)
- Stored Routes Needed for Management (OpML 1 roads)
- Sustainable HSA Roads List (Highway Safety Act Roads that would likely remain in a financially sustainable road system)

Appendix D – Maps

- Heppner Road Management Categories
- North Fork John Day Road Management Categories
- North Zone Roads by OpML
- Pomeroy and Walla Walla Road Management Categories (all of Pomeroy RD and part of Walla Walla RD)
- South Zone Roads by OpML
- Walla Walla Road Management Categories (remainder of Walla Walla RD)