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Forest  
Service

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# Colville National Forest Forest-wide Travel Analysis Report

Colville National Forest  
Washington

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## Executive Summary

The travel analysis process is intended to identify opportunities for the national forest transportation system to meet current and future management objectives, and to provide information that allows integration of ecological, social, and economic concerns into future decisions. The travel analysis process is tailored to local situations and landscape/site conditions as identified by forest staff members and coupled with past public input.

The outcome of the travel analysis process is an identification of potential opportunities for changing the way certain parts of the forest transportation system are managed to address administrative and public issues. A thorough travel analysis supports subsequent National Environmental Policy Act (NEPA) processes, allowing individual projects to be more site-specific and focused, while still addressing cumulative impacts.

On September 29, 2012 the working group assigned to this project met to discuss the travel analysis process. After reviewing the June 2005 Roads Analysis Report for this area, and considering available resources, it was determined that the appropriate scope of analysis was all roads within the Colville National Forest System. The analysis period is set at 10 years outlook on needs, effects, and implications.

## Summary of Issues

Issues were identified using previous public involvement and internal Forest Service input.

- Affordability of road system
- Access to recreational facilities for the public
- Access to private lands for landowners
- Access to authorized uses such as grazing allotments, mining claims, and other permitted uses
- Access for general forest administration
- Access to firewood and other forest products gathering areas
- Public Safety – escape routes and access for wildfire response
- Public access increases the risk of human caused fires
- Roads have an effect on watershed condition
- Roads have an effect on wildlife habitat
- Roads have an effect on cultural resources and tribal uses
- Roads have an effect on botany resources (sensitive plants)

## Summary of Recommended Actions Responding to Issues

- Reduce the number of road miles that need to be maintained or reduce the maintenance level to reduce maintenance costs.
- Reduce the road width and maintenance level to minimum needed for safe vehicle passage and to meet the intended need.
- Leverage funds/efforts to increase maintenance capabilities.
- Prioritize roads that are good candidates for transfer of jurisdiction to counties.
- Maximize cooperation from landowners by proposing to issue reciprocal easements.
- Enter into special use agreements with landowners, stipulating that the permittee has maintenance responsibilities.

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- Transfer jurisdiction and maintenance to permit holders as appropriate.
  - Continue to restrict motorized vehicle use on the forest to a designated road system through travel management.
  - Utilize traffic devices such as signs and physical barriers that discourage use of unauthorized roads.
  - Monitor unauthorized roads after the installation of barriers and other mitigation measures.
  - Provide information and education about motor vehicle regulations and responsible use of motorized vehicles on the National Forest.
  - Install route numbers on all system roads at junctions with system and unauthorized routes to assist users with compliance of motor vehicle use regulations.
  - Educate the public to create an understanding of the problems created by off-road driving.
  - Utilize enforcement to curtail off-road driving.
  - Rehabilitate areas damaged by off-road driving.
  - Maintain access to recreational sites that are provided by the Forest Service for public use.
  - Maintain and update the Motor Vehicle Use Map.
  - Maintain road signage in accordance with handbook direction.
  - Reduce the number of roads located in habitat for species-of-concern and species-of-interest.
  - Place seasonal restrictions on roads going through critical habitat.
  - During the NEPA process for management activities, consider closing (ML1) open roads in the project area to reduce the maintenance costs.

## Analysis Performed

A multi-disciplinary working group used a risk-benefit assessment to rank roads based on risks (wildlife disturbance, impacts on cultural resources, and so on) and benefits (access to facilities, recreational opportunities, and so on). The road risk/benefit issues were identified by the working group. The working group was then asked to review the questions pertinent to their specialty and use them to build issue statements and evaluation criteria for evaluating the risk or benefit for each road on their specialty resource.

## Key Results and Findings

Through the travel analysis process, the working group ranked routes based on their risks to natural and cultural resources and their benefits to recreation use, forest product access, agency and permittee access, vegetation management, and emergency (primarily for fire management and suppression) access.

- 465 miles or 11 percent of roads in the current system have been assessed to have a greater risk than benefit and should be considered for decommissioning, closure, converted to a trail, or mitigated to reduce resource risk. The working group reviewed the roads in these categories and made more refined recommendations which can be found in Appendix A.
- 830 miles or 19 percent of roads in the current system have been assessed to have low benefit and low risk and should be considered for decommissioning, closure, converted to a trail, or mitigated to reduce resource risk.
- 2,996 miles or 70 percent of the current system are roads with high to medium benefits and should be considered for continued routine maintenance, additional maintenance to mitigate resource risk, or used only for administrative needs.

Step 4 includes a section on opportunities for making changes to the road system and the map in Appendix E shows the opportunities identified by the working group. A complete list of the individual rankings for each road can be found in Appendix A. A breakdown of miles and percent of miles for the transportation system are shown in the Scoring and Rating section of Step 4 (p. 27).

## How the Report Will Be Used

Travel analysis process results will assist the Colville National Forest in addressing issues related to roads. It will be used to inform future analyses, decisions, and specific actions.

## Project Introduction

Areas that were considered for analysis under the Forest-level travel analysis process for the Colville National Forest include both the East Zone (Three Rivers, Sullivan Lake, and Newport Ranger Districts) and the West Zone (Three Rivers and Republic Ranger Districts) totaling about 1.1 million acres. Terrain encompassed by the analysis area is quite varied in respect to slope, aspect, and elevation. All aspects are represented as the landscape is composed of numerous mountains, valleys, and ridges that vary in size. This travel analysis process analyzed all 3927 roads on the Colville National Forest.

The Colville National Forest will use this travel analysis process for future NEPA projects where the laws, regulations, manual and handbook direction governing the transportation system requires that a travel analysis process be completed prior to the NEPA projects inception. This travel analysis process will assist Forest Line Officers in their proposals and analysis of future NEPA projects. Future NEPA projects include combinations of vegetation management treatments, including commercial thinning, prescribed burning and both mechanized and non-mechanized fuels treatments that will reduce hazardous fuels. Additional NEPA projects may include transportation access to mining activities, access to recreation sites and areas, access to authorized users of special use permits including easements.

## Step 1: Setting up the Analysis

### Purpose

The purpose of this section is to:

- Identify the project area and state objectives
- Clarify the roles of technical specialists
- Develop a process plan and an analysis plan
- Address information needs

### Project Area and Objectives

The travel analysis process will be conducted for all Maintenance Level (ML) 1 to 5 roads on the Colville National Forest. (For additional information on the definition of Forest Service maintenance levels, please see Appendix D, Glossary of Travel Management Terminology). The objective of the analysis is to provide scientific information for managing a transportation system that is safe and responsive to public needs, conforming to the Colville National Forest Land and Resource Management Plan, efficiently administered, in balance with funding available for needed management actions, and has minimal negative ecological effects on the land.

The travel analysis process is intended to be a broad scale comprehensive look at the transportation network. The main objectives of the travel analysis process are to:

- Identify opportunities for making changes to the forest transportation system that balance the need for access while minimizing risks by examining important ecological, social, and economic issues related to roads;
- Develop maps, tables, and narratives that display transportation management opportunities and strategies that address current and future access needs, and environmental concerns;
- Identify the need for changes by comparing the current road system and areas to the desired condition;
- Identify opportunities for change that will inform travel management decisions in subsequent NEPA documents; and to
- Provide a list of opportunities and analysis background necessary for the identification of the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System (NFS) lands per 36 CFR 212.5(b)(1).

The analysis area for this travel analysis process encompasses the entire Colville National Forest (1,100,000 acres). See map in Appendix E.

## Roles of Specialists

A multi-disciplinary working group (working group) of forest specialists and specialists from TEAMS Enterprise were assigned to the travel analysis process. The team members and their primary analysis role are listed below:

<b>Resource</b>	<b>POV</b>	<b>West Zone</b>
Leader	Mike North (TEAMS)	Mike North (TEAMS)
Hydrology	Rob Lawler	Jennifer Hickenbottom
Transportation	Doug Bladek	Doug Bladek
Wildlife	Mike Borysewicz	Chris Loggers
Fire/Fuels	Leon Mitchell	Leon Mitchell
Range & Noxious Weeds	Travis Fletcher	Travis Fletcher
Timber	Mary Rourke	Mary Rourke
Recreation/Scenery	Vaughn Hintze	Vaughn Hintze
Heritage Resources	Alicia Beat	Alicia Beat
Soils	Jason Jimenez	Jason Jimenez
Fisheries/FERC	Brian Peck	Karen Honeycutt
Sensitive Plants	Kathy Ahlenslager	Kathy Ahlenslager
Special Uses/Minerals	Karen Nooney	Karen Nooney
Law Enforcement Liaison	Matt Valenta	Matt Valenta
Data Resources	Teri Contreras	Teri Contreras
Writer/Editor	Mike North (TEAMS)	Mike North (TEAMS)

## Process Plan

The travel analysis process will follow the same six-step process outlined in the roads analysis process, as described in FS-643, Roads Analysis: Informing Decisions about Managing the National Forest Transportation System (USDA Forest Service 1999).

## Analysis Plan

The working group followed these steps in order to carry out the analysis:

- Review and assemble existing data.
- Verify accuracy of system road locations on maps.
- Identify and document discrepancies between on-the-ground conditions, the Forest's INFRA database, and current management direction.
- Where possible, verify the current conditions of roads and associated features including surface type and impacts on other resources.
- Identify preliminary access and resource issues, concerns, and opportunities.
- Identify road safety issues.
- Identify additional issues, concerns, and opportunities through previous public involvement and internal resource staffs.
- Identify opportunities for making changes to the road system based on the findings of this analysis in response to the issues identified.

## Information Needs

The following information was required to proceed with the analysis.

- Accurate location of all system roads within the analysis area. For each road, the following information is needed:
  1. Any existing public, permittee, or agency use.
  2. Any right-of-way dedication to the FS.
  3. Any additional right-of-way required.
  4. Maintenance responsibility for the road.
- Assessment of current opportunities, problems, and risks for all roads in the analysis area.
- Soil, water resources, invasive species, environmental issues, and biological communities.
- Public access and recreational needs and desires in the area, including access for nearby landowners.
- Current observed road uses.
- Current road management objectives.
- Areas of special sensitivity, resource values, or both.
- Best management practices for the area.
- Current forest plan and other management direction for the area.
- Agency objectives and priorities.
- Interrelationship with other governmental jurisdictions for roads.
- State laws that regulate motor vehicle use on and off public roads.
- Applicable federal, state, and local laws.
- Public and user group values and concerns.
- Forest scale and any project level roads analysis process.
- Cultural resources.

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## Step 2: Describing the Situation

### Purpose

The purpose of this step is to:

- Describe the existing road system
- Describe the existing direction
- Describe road maintenance levels

### Existing Road System

Currently the Colville National Forest has an extensive system of roads and motorized trails. The motorized trails are not addressed in this travel analysis process. This travel analysis process will review and analyze the ML1 through ML5 roads on the Colville National Forest. These roads are shown in Appendix E.

### Existing Direction for Roads

#### A. General

Travel analysis is focused on identifying needed changes to the forest transportation system; identifying the existing direction is an important first step. The existing direction includes the National Forest System roads currently managed for motor vehicle use. Restrictions, prohibitions, and closures on motor vehicle use are also part of the existing direction. Existing direction from laws and regulations, official directives, forest plans, forest orders, and forest-wide or project-specific roads decisions, determine the motorized routes and areas open to public motorized travel. This information about the managed system is documented in road management objectives, maps, recreation opportunity guides, tabular databases, and other sources.

#### B. Roads

##### *Open Road*

Existing roads open to the public for motorized use are forest system roads, which are currently in the Forest's INFRA database (an Oracle Database containing information on all roads and improvements on Forest Service lands) with the following attributes:

- System = National Forest System Road
- Jurisdiction = Forest Service
- Route Status = Existing
- Operational Maintenance Level = 2-5

##### *Closed Road*

Closed roads have been closed to vehicle traffic for at least a year but are necessary for future activities. They appear in the Forest's INFRA database under the following categories:

- System = National Forest System Road
- Jurisdiction = Forest Service
- Route Status = Existing
- Operational Maintenance Level = 1

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### *Decommissioned Road*

Decommissioned roads are no longer part of the forest transportation system. They may have some type of physical closure at their entrance (berm, etc.) or may be completely obliterated. They appear in the Forest's INFRA database under the following categories:

- System = National Forest System Road
- Jurisdiction = Forest Service
- Route Status = Decommissioned
- Operational Maintenance Level = 1-5<sup>1</sup>

In order to return a decommissioned road to service as a system road the NEPA process must be followed even when no physical work is required to allow motorized traffic back on the road

### *Unauthorized Road*

An unauthorized road is a road, which exists on the forest, but is not included in a forest transportation atlas or database. These roads are usually established by various users over time. They were not planned, designed, or constructed by the Forest Service to be used as roads. Currently, these roads are not in the Forest's INFRA database, nor are they part of the NFS roads.

## C. Motorized Trails

Currently, the designated motorized trails on the Colville National Forest are shown on the Motor Vehicle Use Map – Colville National Forest dated February 1, 2013.

## D. Areas

There are no designated motorized areas on the Colville National Forest.

## E. Previous Travel Management Decisions

The June 2005 Roads Analysis Report has been used as information by the Colville National Forest Line Officers to add to their understanding of the transportation system on the Forest. Modifications to the transportation system are often made as a result of part of project level NEPA analyses. Designations of roads open to different types of motor vehicles, including off-highway vehicles are made as a result of implementation of 36 CFR 212, Subpart B – Designation of Roads, Trails, and Areas for Motor Vehicle Use.

## Road Maintenance Levels

The Forest Service differentiates forest roads into five maintenance levels, which define the level of service, and maintenance required. Refer to Appendix D for a more detailed description of the maintenance levels.

**Road Maintenance Level 5 (ML5)** – roads are managed and maintained for a high degree of user comfort. These roads are generally paved and are suitable for passenger vehicles.

**Road Maintenance Level (ML 4)** – roads are managed and maintained for a moderate degree of user comfort. These roads are generally paved, but sometimes may be surfaced with stabilized aggregate surfacing and are suitable for passenger vehicles.

**Road Maintenance Level (ML3)** – roads are managed and maintained for a moderate degree of user comfort. These roads are generally gravel surfaced and are suitable for passenger vehicles.

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<sup>1</sup> The maintenance level of decommissioned roads is the level they were maintained at prior to decommissioning.

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**Road Maintenance Level 2 (ML2)** – roads are managed and maintained for use by high-clearance vehicles; passenger car traffic is not a consideration.

**Road Maintenance Level 1 (ML1)** – roads are kept on the transportation system for intermittent project uses and are closed to vehicular traffic between projects. The closure period must exceed 1 year for the road to be ML 1 status.

**Table 1. Road summary of miles by type for the analysis area**

<b>Maintenance Level</b>	<b>Number of Roads</b>	<b>Miles of Road</b>
1 – Basic Custodial Care (Closed)	2332	1927
2 – High Clearance Vehicles	1468	2015
3 – Suitable For Passenger Vehicles	73	324
4 – Moderate Degree of User Comfort	50	16
5 – High Degree of User Comfort	4	9
Totals	3927	4291

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## Step 3: Identifying Issues

### Purposes

The purposes of this step are to:

- Identify resource concerns
- Identify key issues related to management of existing road system

### Resource Concerns

Motor vehicle use on the Colville National Forest has increased in recent years as local and out of area visitor use increased. Increased use has increased the maintenance needs for all road Maintenance Levels (ML). As maintenance costs have increased, allocated maintenance funds have remained static or been significantly reduced. This causes a disproportionate shift of maintenance funds to the ML 3-5 roads. The increased use coupled with the decreased funds has resulted in degraded soil, water, vegetation, and wildlife habitat conditions.

Increased road use coupled with decreased maintenance has resulted in more disturbance or displacement of wildlife, habitat fragmentation, habitat loss, reduction of habitat productivity, and in some cases, wildlife mortality from collisions. In some places, improper user rerouting of eroded road portions, non-compliance with the Motor Vehicle Use Map, and use of ML 1 roads has led to loss or reduced productivity of important wildlife habitats.

Heritage resources are a concern throughout the project area as they are important considerations in all management activities on the Forest. There has been human occupation in the local area for thousands of years. Roads can significantly impact heritage sites.

There is fire risk wherever people use the National Forest. This risk can come from many sources, including smoking, vehicles, and campfires.

Motor vehicle use on roads can also facilitate the spread of invasive plants and aquatic species and put floral and faunal diversity at risk.

### Key Issues

The key issues were identified through past public involvement and comments that addressed the Colville National Forest road system as well as from input from Forest Service personnel. The following roads issues were identified and are in random order and do not represent a hierarchy of importance.

#### **1) Insufficient resources for maintenance of the existing system roads**

Inadequate maintenance reduces access for National Forest users and management. Funding for road maintenance is not adequate to maintain the existing system and perform needed monitoring. See Appendix F for more information on Road Maintenance Costs.

#### **2) Need for access to private lands for landowners**

Many of the private lands on the Colville National Forest are currently accessed by system roads.

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**3) Increased risk of human-caused fire**

Roads are used by the public to access public lands. The more public use of an area equates to a higher probability of human caused fire starts. In the event of a public emergency such as a wildfire, the need for good egress/ingress is important for public safety.

**4) Need for access to firewood and other forest products gathering areas**

Firewood, traditional materials, and plant gathering are all important activities, especially for Native American communities. Decommissioning or closing roads may affect access for traditional gathering activities.

**5) Known Cultural Resources and Tribal Use/Traditional Cultural Property**

Public access to Traditional Cultural Properties can result in damage to the properties. Access across public lands to tribal lands contributes to trespass problems.

**6) Roads have effects on Wildlife Habitat**

Reduced maintenance, new construction, improper user rerouting of eroded road portions, and non-compliance with road closures causes a reduction of habitat productivity.

**7) Roads have effects on Watershed Conditions.**

Erosion and sediment from improperly maintained roads reduces watershed conditions and introduces sediment into streams.

**8) Roads provide access to the public for recreational purposes**

Forest roads access developed recreation sites, and are used for a variety of recreational purposes such as camping, hunting, fishing, hiking, mountain biking, horseback riding, etc.

**9) Access to for general forest administration**

Access to the forest is needed by the agency for general forest management reasons such as vegetation management and forest monitoring.

## Step 4: Assessing Benefits, Problems and Risks

### Purposes

The purposes of Step 4 are to:

- Describe the analysis process
- Describe the criteria used in the risk and benefit analysis process
- Describe the scoring and rating
- Summarize the risk and benefit of existing motorized routes
- Discuss the statistical distribution of risk and benefit assessment
- Identify opportunities for roads
- Provide guidelines for mitigating road risks

### The Analysis Process

The issues described in Step 3 were addressed by the working group in the following assessment. The risk and benefit criteria categories (Step 4, Table 2) were developed by considering the issues from Step 3 and the suggested resource questions for roads analysis described in FS-643 Roads Analysis: Informing Decisions about Managing the National Forest Transportation System . The working group reviewed these resource questions (see Appendix B of this report) and used them to develop criteria to use in ranking the risks and benefits of each road. Each road was then evaluated against the identified risks and benefits.

**Table 2. Resource categories for roads**

<b>Risk</b>	<b>Benefit</b>
The presence or conditions of motorized use present risks associated with these categories:	Motorized uses benefit Forest management because they provide opportunities for these categories:
Human Caused Fire	Fire and Fuels Management—Agency Access
Known Cultural Resources	Public Safety – Roads as Egress Routes for the Public
Tribal Use – Traditional Cultural Properties	Fire and Fuels Management-Vegetation Management Access
Sensitive Plant Species	Timber- Vegetation Management Access
Undesirable Plant Species	Access to Range Improvements
Secluded Wildlife Habitat	Access to Authorized Uses and Administrative Facilities
Grizzly Bear Recovery	Access for Recreation
Sedimentation into Hydrological Features	Scenic Viewsheds
Non-Sediment Pollution	Access to Traditional Cultural Properties
Disruption of Ground Water Flow	
Fisheries – Aquatic Species	
Fisheries – Listed Species	

## Criteria Used in the Risk and Benefit Analysis Process

Roads provide access for many uses. They also provide the infrastructure to facilitate motorized recreation and vegetation management. However, their presence has possible negative effects on the natural and cultural resources of the National Forest. The following categories for risks and benefits were identified by the working group as the most important resource issues for managing the forest transportation system.

The road risk/benefit issues which were identified by the team were assigned to individual specialists based on the resource area affected. For each issue, the specialist was tasked to produce a succinct statement describing the issue, and the criteria by which they would rank the impact of each road for that issue. Tables 3 and 4 detail the issue and ranking statements and evaluation criteria to be used for the Colville National Forest travel analysis process. Roads were scored with values of high, medium, or low risk combined with high, medium, or low benefit. Each resource specialist was asked to develop criteria for characterizing high, medium, or low values for roads in their resource area. The following tables detail these criteria.

**Table 3. Benefit Statements and Criteria**

<b>Access to Public Lands</b>	
<b>Benefit: Fire and Fuels Management—Agency Access</b>	
Access for fire management personnel to manage fires (wildfire and prescribed fire).	<b>HIGH</b> – A high benefit road provides access to improvements that benefit fire management activities. This includes access to heli-spots, water sources, staging areas. A high benefit road can also serve as a control feature for fire operations (fire control line or burnout line)
	<b>MEDIUM</b> - A medium benefit road provides access to isolated areas and may serve as a control feature for fire activities.
	<b>LOW</b> - A low benefit road is a dead-end road or does not meet any of the above criteria.
<b>Benefit: Public Safety- Egress/Escape Routes for the Public</b>	
Escape routes are needed in the event of an emergency (wildfire, medical and law enforcement incident). Private landowners, public groups and other forest users need adequate egress to evacuate from homes, seasonal cabins, youth camps and campgrounds.	<b>HIGH</b> – A high benefit road provides a primary escape route for the public. It provides egress to a county road.
	<b>MEDIUM</b> - A medium benefit road provides a secondary escape route for the public.
	<b>LOW</b> - A low benefit road provides no egress (a dead-end road).
<b>Benefit: Fire and Fuels Management – Vegetation Management Access</b>	
Transportation system roads are used to access areas for vegetation management activities.	<b>HIGH</b> – High benefit roads will be used repeatedly over the planning horizon. They include all roads which are the primary access to multiple planned treatment units.
	<b>MEDIUM</b> – Medium benefit roads access single planned treatment units.
	<b>LOW</b> - Low benefit roads do not access planned treatment units.
<b>Benefit: Timber - Vegetation Management Access</b>	
Transportation system roads are used to access areas for vegetation management activities, for both currently planned and future projects.	<b>HIGH</b> – High benefit roads access potential forest restoration sites in areas included in the current ten year management plan. They include all Level 2 or Level 1 roads which provide all or a portion of the access to management areas where timber can be harvested.
	<b>MEDIUM</b> – Medium benefit roads access potential forest restoration sites in areas <b>not</b> included in the current ten year management plan. They include all Level 2 or Level 1 roads which provide all or a portion of the access to management areas where timber can be harvested.

	<b>LOW</b> - Low benefit roads include passenger vehicle roads that are primarily used for recreation, as well as roads that do not access management areas where timber can be regularly harvested.
<b>Benefit: Access to Authorized Uses and Administrative Facilities</b>	
Roads provide authorized users and administrative access to forest improvements, approved mining operations, and private inholdings. Forest improvements include lookout towers, communications sites, utility corridors, special use areas and facilities, designated permit areas, designated resource areas.	<b>HIGH</b> - High benefit roads access forest improvements and private inholdings, set-aside areas, approved mining operations, or special use areas directly, are frequently used by authorized users and for administrative purposes.
	<b>MEDIUM</b> - Medium benefit roads access forest improvements and private inholdings, set-aside areas, approved mining operations, or special use areas directly are occasionally used by authorized users and for administrative purposes.
	<b>LOW</b> - Low benefit roads do not access forest improvements and private inholdings, set-aside areas approved mining operations, or special use areas.
<b>Benefit: Access for Recreation</b>	
Roads 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, etc.) can vary.	<b>HIGH</b> - A high benefit road is part of a road network that provides the most direct access to developed recreation sites such as trails, campgrounds, picnic areas, and recreation residential homes.
	<b>MEDIUM</b> - A medium benefit road is part of a road network that provides indirect or alternative access to the types of places listed above. Medium benefit roads may provide direct access to undeveloped areas or features that are named or serve to complete a circuitous loop within the road network for recreational driving.
	<b>LOW</b> - A low benefit road is not part of a road network and dead-ends in the general forest area where there is no apparent point of interest or named location.
<b>Benefit: Scenic Viewsheds</b>	
Roads provide access to regions of the forest that are valued for their scenic attractiveness, and serve as viewing platforms from where scenery can be enjoyed. Valued areas for scenery were identified during the latest Forest Plan revision effort and their management objectives range from Very High (most favorable) to Very Low (least favorable).	<b>HIGH</b> - A high benefit road is part of a road network that provides access to areas of the Forest where scenery is of high value and reflects little to no evidence of man's activity. Such areas are managed under the Forest Plan for Very High and High Scenic Integrity Levels.
	<b>MEDIUM</b> - A medium benefit road is part of a road network that provides access to areas of the Forest where scenery is of moderate value and evidence of man's activity is apparent but not overwhelming. Such areas are managed under the Forest Plan for Medium Scenic Integrity Levels.
	<b>LOW</b> - A low benefit road is part of a road network that provides access to areas of the Forest where scenery is of low value and evidence of man's activity overwhelms that of the natural setting. Such areas are managed under the Forest Plan for Low and Very Low Scenic Integrity Levels.

<b>Benefit: Tribal Access</b>	
Access to Traditional Cultural Properties is important to the tribes.	<b>HIGH</b> - High benefit road accesses a Traditional Cultural Property and route was highlighted by tribe(s) because it is valued or needed by tribe to access Traditional Cultural Property or traditional use area.
	<b>MEDIUM</b> - Medium benefit road which is known access and/or parking area for accessing Traditional Cultural Property or area where traditional use is known to occur. Location of TCP may or may not have been identified.
	<b>LOW</b> – Low benefit road accesses area with no identified Traditional Cultural Properties or traditional use, or access for traditional cultural activities has not been identified as important to tribe.
<b>Benefit: Access to Range Improvements</b>	
Motorized access to grazing allotments using roads benefits the Forest Service by facilitating the administration of grazing permits and benefits grazing permittees by providing access to maintain structural range improvements (corrals, water developments, fencing, etc.).	<b>HIGH</b> - High benefit roads are those roads that lead directly to or within ¼ mile of rangeland structural improvements.
	<b>MEDIUM</b> - Medium benefit roads are those roads that are located between ¼ mile and ½ mile of rangeland structural improvements
	<b>LOW</b> – Low benefit roads are those roads that are located more than ½ mile from rangeland structural improvements.

**Table 4. Risk Statements and Criteria**

<b>Fire</b>	
<b>Risk: Human Caused Fire</b>	
<p>Transportation system roads are used by the public to access public lands.</p> <p>The more public use of an area equates to a higher probability of Human caused fire starts due to increased use of incendiary devices and purposes (campfires, smoking, ATV-use, target shooting, etc.)</p>	<b>HIGH</b> – High Risk roads typically do not lead to developed recreation sites (campgrounds, boat launches, etc.) Fire hazard/fire risk in these areas is high. The fuel complex may include conifers, ponderosa pine and douglas fir.
	<b>MEDIUM</b> – Medium Risk roads lead to developed recreation sites and to disperse camp sites. Fire hazard/fire risk in these areas is moderate. Fuel complex may include grassy meadows, ponderosa pine and douglas fir.
	<b>LOW</b> - Low risk roads are not used by the public. These are closed roads.
<b>Heritage Resources</b>	
<b>Risk: Known Cultural Resources</b>	
<p>Cultural resources can be impacted by the transportation system. Use and maintenance of roads which cross sites can impact the cultural resources. Access to areas with cultural resources increases the chance that these resources could be disturbed by the public.</p>	<b>HIGH</b> – High risk roads which have been surveyed for cultural resources and identified sites are impacted by the road, or the road has not been surveyed but is located in an area with high or moderate site density.
	<b>MEDIUM</b> – Medium risk roads have not been surveyed but is located in a low site density area and is in an area with little to no survey.
	<b>LOW</b> – Low risk roads have been surveyed for cultural resources and no sites are impacted by the road.
<b>Risk: Tribal Use/Traditional Cultural Property</b>	
<p>Public access to Traditional Cultural Properties can result in damage to the properties. Access across public lands to tribal ownership properties contributes to trespass problems.</p> <p>Near equates to causing interference with Traditional cultural properties. This is a subjective term, not a set distance. It means that motorized use on a given route is having an impact upon a traditional practitioner’s use of a TCP or use area.</p>	<b>HIGH</b> - High risk road is on or <i>near</i> an identified Traditional Cultural Property, and was identified as a concern by tribe(s) during consultation because of its proximity to Traditional Cultural Property.
	<b>MEDIUM</b> - Medium risk road is in the general vicinity of an area known for Traditional Cultural Property and/or traditional cultural use. Specific location of Traditional Cultural Property may or may not have been identified.
	<b>LOW</b> - Low risk road is in area with no identified Traditional Cultural Properties, and which has no traditional cultural use has been identified.

<b>Botany</b>	
<b>Risk: Sensitive Plant Species</b>	
Sensitive plants can be affected by motorized use through habitat loss and direct mortality. Sensitive species occur in a variety of habitats on the Colville National Forest. Thorough surveys have been conducted in some areas but not in others. In most of the forest dispersed camping is allowed within 300 feet of roads and it is assumed most camping related activities will take place within 500 feet of the road.	<b>HIGH</b> - High risk roads are within 100 feet of known sensitive plant locations or intersect riparian areas or limestone substrates.
	<b>MEDIUM</b> - Medium risk roads occur within 100 – 500 feet of known sensitive plant locations
	<b>LOW</b> - Low risk roads do not intersect riparian areas or limestone substrates or are more than 500 feet from known sensitive plant occurrences.
<b>Risk: Undesirable Plant Species</b>	
Roads present a risk of introduction of new populations of undesirable plant species. Vehicles carry and spread plant parts or seeds along motorized travel ways. The main risk of infestation is from users traveling from infested areas to un-infested areas. Users from outside the local area may introduce new weeds to the Forest. Non-local users include recreationists and special use permittees, i.e. utility companies who regularly inspect their infrastructure.	<b>HIGH</b> - High risk roads receive a high degree of non-local use. Any road that leads to a developed recreation site or is advertised as access to a special area (such as trail heads) is considered high risk.
	<b>MEDIUM</b> - Medium risk roads receive moderate or seasonal use by non-local users. Medium roads would also connect 2 or more 6 <sup>th</sup> field watersheds together. Also included are roads regularly used to access special use developments such as electric, telephone, or gas lines.
	<b>LOW</b> - Low risk roads are infrequently used by non-local users.
<b>Risk: Management Indicator Species – Big game and other species that depend on secluded habitat</b>	
Location or motorized use of roads can impact Forest-wide habitat or MIS population trends.  In general, areas with lower road densities tend to have higher wildlife use for a variety of reasons. For example, motorized use of roads intersecting or near fawning or calving areas can cause	<b>HIGH</b> – Open roads that contribute to open road densities > 3 miles of road per square mile, or closed roads.
	<b>MEDIUM</b> - Open roads that contribute to open road densities between 1.5 and 3 miles of road per square mile.
	<b>LOW</b> – Open roads that contribute to open road densities equal to or less than 1.5 miles of road per square mile.

<b>Risk: Grizzly Bear</b>	
<p>Roads provide access for people into grizzly bear habitat. In areas of high road densities, grizzly bears are prone to being disturbed by vehicle traffic or people on foot. A bear may learn to avoid areas near open roads, forgoing access to suitable habitat which might occur in the road corridor. The risk of a grizzly being shot is higher in areas of high road densities, than in areas with few or no roads. In the Selkirk Mountains Ecosystem, human-caused grizzly bear mortality has been well documented and is considered the greatest threat to the continued existence of the animals (Knick and Kasworm, 1989).</p> <p>Restricted roads, although physically closed with gates, receive some administrative traffic and may be occasionally “breached” by the public.</p> <p>This criteria pertains only to roads within the Selkirk Mountains Grizzly Bear Recovery Area. We use a “moving windows” analysis to visually display discrete areas of open and total road densities in the following categories;</p> <ul style="list-style-type: none"> <li>0-1 miles / sq. mile</li> <li>1-2 miles / sq. mile</li> <li>&gt; 2 miles /square mile.</li> </ul>	<p><b>HIGH</b>- Open roads in the recovery area.</p>
	<p><b>MEDIUM</b> –Restricted (gated) roads in the recovery area.</p>
	<p><b>LOW</b> – Un-drivable roads (barriered or re-vegetated) roads in the recovery area.</p>
<b>Water Quality</b>	
<b>Risk: Sedimentation into Hydrological Features</b>	
<p>Roads can be a source of elevated sediment to streams and other hydrological features, negatively impacting water quality. For the sedimentation issue, high</p>	<p><b>HIGH</b> – – 41-100% of the road is located within high risk rating zones</p> <p style="text-align: center;">Or</p> <p>Road is in-sloped with a native surface with more than two perennial or intermittent stream crossings greater than 3% road grade.</p>

<p>risk zones are defined as glacial outwash landforms. Also of concern are native surface and/or in-sloped roads with 3% road grade at crossing.</p>	<p><b>MEDIUM</b> – 20-40% of the road is located within a high risk rating zone</p> <p style="text-align: center;">Or</p> <p>Road is in-sloped with a native surface with one or two perennial or intermittent stream crossings greater than 3% road grade.</p> <p><b>LOW</b>– road does not meet criteria for Medium or High Risk..</p>
<p><b>Risk: Non-Sediment Pollution</b></p>	
<p>Roads can be a source of elevated temperature, Fecal Coliform, Dissolved Oxygen, pH and other pollutants negatively impacting water quality. These pollutants can originate from human activities such as camping, or cattle grazing.</p> <p>For this Non-Sediment Pollution Issue, high risk zones are defined within 300 feet of stream reaches with, or potential of, Total Maximum Daily Load (TMDL) concerns, and/or dispersed camping sites and/or associated human activity, and/or cattle access provided at road-stream crossings.</p>	<p><b>HIGH</b> – 100% of the road is located within high risk rating zones.</p> <p style="text-align: center;">Or</p> <p>The road has two or more dispersed camping sites and associated human activity within 300 feet of a perennial or intermittent stream.</p> <p style="text-align: center;">Or</p> <p>Road has two or more perennial or intermittent stream crossings where cattle have access.</p> <p><b>MEDIUM</b> – 2-5% of the road is located within high risk rating zones.</p> <p style="text-align: center;">Or</p> <p>Road has one dispersed camping site and associated human activity within 300 feet of a perennial or intermittent stream.</p> <p style="text-align: center;">Or</p> <p>Road has one perennial or intermittent stream crossings where cattle have access.</p> <p><b>LOW</b>– road does not meet criteria for Medium or High Risk..</p>
<p><b>Risk: Disruption of ground water flow and negative hydrologic surface connectivity</b></p>	
<p>Roads can be a source of disruption to natural hydrologic flows by disrupting ground water flow and increasing surface water connectivity.</p> <p>For Flow Effects Issue, high risk zones are defined as a road located in the riparian area and/or floodplain (300 feet from stream edge). Parallel roads on slopes over create a cumulative effect on the disruption of ground and surface water flows.</p>	<p><b>HIGH</b> – 5-100% of the road is located within high risk rating zones.</p> <p style="text-align: center;">Or</p> <p>5-100% Road is within 300 feet of perennial or intermittent stream</p> <p style="text-align: center;">Or</p> <p>There are more than two parallel roads (stacked roads) on slopes over 30% between the perennial or intermittent stream and ridge.</p> <p><b>MEDIUM</b> – 0-5% of the road is located within a high risk rating zone.</p> <p style="text-align: center;">Or</p> <p>0-5% Road is within 300 feet of perennial or intermittent stream.</p> <p style="text-align: center;">Or</p> <p>There are one or two parallel roads (stacked roads) on slopes over 30% between the perennial or intermittent stream and ridge</p> <p><b>LOW</b>– Road does not meet criteria for Medium or High Risk..</p>
<p><b>Fisheries</b></p>	
<p><b>Risk: Sedimentation into Hydrological Features</b></p>	

Roads that cross streams can prevent or inhibit fish passage at various flows for different species and life stages..	<b>HIGH</b> – road has 2 or more crossings on Class 1 or 2 streams.
	<b>MEDIUM</b> – road has 1 stream crossing on Class 1 or 2 streams.
	<b>LOW</b> – road has no stream crossings on Class 1 or 2 streams.
<b>Risk: Bull trout, Cutthroat trout, Redband trout and Designated Critical Habitat</b>	
Federally listed bull trout, forest sensitive westslope cutthroat and redband trout.  For this issue statement, high risk zones are defined as roads within 300 feet of water documented to have bull, cutthroat, and/or redband trout, and/or roads within 300 feet of bull trout designated critical habitat.	<b>HIGH</b> – 51-100% of the road is located within high risk rating zones  <b>Or</b> the road has 2 or more stream crossings on water documented to have bull, cutthroat, and/or redband trout; or is designated bull trout critical habitat.
	<b>MEDIUM</b> – 1-50% of the road is located within high risk rating zones of water documented to have bull, cutthroat, and/or redband trout  <b>Or</b> the road has 1 stream crossing on water documented to have bull, cutthroat, and/or redband trout; or is designated bull trout critical habitat.
	<b>LOW</b> – 0% of the road is located within high risk rating zones of water documented to have bull, cutthroat, and/or redband trout  <b>Or</b> the road has no stream crossings on water documented to have bull, cutthroat, and/or redband trout; and is not designated bull trout critical habitat.

## Scoring and Rating

The overall risk and benefit assessment for each road was based on scores aggregated from separate risk and benefit assessments completed by specialists on the working group. Each road generated a high, medium, or low rating based on the criteria stated in the previous section, which produced the road's score. The scores were totaled to find the overall risk and benefit ranking of each road.

There are 12 resource risk criteria and 9 benefit criteria for each road analyzed. Scores were based on a point system in which a high rating yielded 3 points, a medium rating yielded 2 points, and a low rating yielded 1 point. Therefore, the overall scores for risk range from 12 (1 point for each criteria) and 36 (3 points for each criteria) and the overall scores for benefits range from 9 (1 point for each criteria) to 27 (3 points for each criteria). Refer to example below in Tables 5 and 6.

It was decided that the ranges for overall high, medium, and low benefits would be based on the number of resources or benefits affected by the road and the intensity of those effects as described by the specialist's rankings. The working group set the criteria for a road to be elevated from low to medium and from medium to high.

These categories did not consider the severity of the impact beyond the criteria presented in the previous section. In the “Remarks” column of the rating database, specialists that wanted to record a particular or severe concern made notes that indicated that the road considered may need further mitigation or may require a different kind of action than those typically recommended for its risk-benefit category.

**Table 5. Example of the risk scoring system for a road**

	<b>Risk Categories</b>	<b>H, M, and L Rating</b>	<b>Points for each Rating</b>
1	Human Caused Fire	M	2
2	Known Cultural Resources	M	2
3	Tribal Use – Traditional Cultural Properties	M	2
4	Sensitive Plant Species	L	1
5	Undesirable Plant Species	M	2
6	Secluded Wildlife Habitat	L	1
7	Grizzly Bear Recovery	H	3
8	Sedimentation into Hydrological Features	L	1
9	Non-Sediment Pollution	M	2
10	Disruption of Ground Water Flow	L	1
11	Fisheries – Aquatic Species	M	2
12	Fisheries – Listed Species	L	1
<b>Total Points:</b>			<b>20 out of 36 possible Medium Risk</b>

**Table 6. Example of the benefit scoring system for a road**

	<b>Benefit Categories</b>	<b>H, M, and L Rating</b>	<b>Points for each Rating</b>
1	Fire and Fuels Management—Agency Access	L	1
2	Public Safety – Roads as Egress Routes for the Public	M	2
3	Fire and Fuels Management-Vegetation Management Access	L	1
4	Timber- Vegetation Management Access	H	3
5	Access to Range Improvements	H	3
6	Access to Authorized Uses and Administrative Facilities	L	1
7	Access for Recreation	L	1
8	Scenic Viewsheds	M	2
9	Access to Traditional Cultural Properties	L	1
<b>Total Points:</b>			<b>15 out of 27 possible Medium Benefit</b>

Based on this example, the overall score would be “medium” for risk and “medium” for benefit. See Appendix A – Risk and Benefit Assessment for the overall risk and benefit results for each road.

The Risk and Benefit Matrix (Tables 7 and 8) list a summary of miles and percent of miles for all miles of road analyzed along with the recommendation.

**Table 7. Point range and distribution for the overall score for a risk**

RISK	Point Range	Overall Score	Number of Roads	Percent of Total Miles
	14-21	Low Risk	2307	32%
	22-25	Medium Risk	1229	34%
	26-34	High Risk	119	21%

**Table 8. Point range and distribution for the overall score for a benefit**

BENEFIT	Point Range	Overall Score	Number of Roads	Percent of Total Miles
	8-10	Low Benefit	1813	31%
	11-14	Medium Benefit	1398	33%
	15-22	High Benefit	716	36%

## Statistical Distribution of Risk and Benefit Assessment

### Risk and Benefit Matrix for Roads (ML1 to ML 2)

Of the 4,291 miles of roads that constitute existing National Forest System roads (ML1 – ML5) on the Colville National Forest, approximately 70 percent of the roads rated as a medium or high benefit, meaning that these roads have several purposes that are important to Forest Service management or public use. Of those roads that ranked as medium or high benefit, 1,399 miles or 33 percent of those roads were also a high risk due to resource concerns. These high risk/medium benefit and high risk/high benefit roads should be the focus of road maintenance funds because mitigating their adverse effects will be the most efficient way to lower the impact of the forest transportation system on the surrounding natural resources.

**Table 9. Roads risk and benefit matrix and recommendations for existing National Forest System roads**

<b>ROADS - OPERATIONAL ML1 TO ML2</b>				
<b>RISKS <sup>1</sup></b>	<b>BENEFITS <sup>2</sup></b>			
	<b>Scores</b>	<b>Low 8-10</b>	<b>Medium 11-14</b>	<b>High 15-22</b>
	<b>High 26-24</b>	(HL) Decommission, Close, or Mitigate – Highest Priority <b>(40)<sup>3</sup> or (1%)<sup>4</sup></b>	(HM) Mitigate or Admin Use Only <b>(302) or (7%)</b>	(HH) Maintain and Mitigate - Highest Priority <b>(1,097) or (27%)</b>
	<b>Medium 22-25</b>	(ML) Decommission, Close, or Admin Use Only <b>(425) or (10%)</b>	(MM) Mitigate and Maintain – Second Priority <b>(684) or (16%)</b>	(MH) Mitigate and Maintain - Second Priority <b>(353) or (8%)</b>
	<b>Low 14-21</b>	(LL) Decommission, Close, or Convert to Trail <b>(830) or (19%)</b>	(LM) Maintain Third Priority <b>(450) or (10%)</b>	(LH) Maintain Third Priority <b>(107) or (2%)</b>
<b>TOTAL OPERATIONAL ML1 TO ML5 = 4,291 MILES</b>				

1 Risks represent the range of total risk scores assigned to each category.

2 Benefits represent the range of total benefit scores assigned to each category.

3 Represent the number of road miles assigned to each box in the matrix.

4 Represent miles of road in matrix box as a percentage of the total miles of roads in these operational maintenance levels.



**Table 10. Recommendations for risk / benefit categories for roads**

<b>Risk / Benefit</b>	<b>Opportunities for Roads</b>
<b>Low Risk / Medium Benefit</b>  <b>282 miles of ML1 Roads</b> <b>167 miles of ML2 Roads</b> <b>1.1 miles of ML3 Roads</b> <b>0.6 miles of ML4 Roads</b> <b>0.1miles of ML5 Roads</b>	<b>Maintain – Priority 2</b>  The majority of these roads should remain open for administrative use or open for the general public, depending on which type of access is appropriate to meet resource management objectives. The low risk associated with these routes indicates low priority for investment of time and funds to mitigate risk.  For roads in this category that are important for public access, the Forest Service should work with cooperating agencies or user groups to provide adequate maintenance.  Maintenance of drainage features and preventing erosion are the highest priority issues for these roads.
<b>Low Risk / High Benefit</b>  <b>2.9 miles of ML1 Roads</b> <b>97 miles of ML2 Roads</b> <b>0.6 miles of ML3 Roads</b> <b>3.6 miles of ML4 Roads</b> <b>0.2miles of ML5 Roads</b>	<b>Maintain – Priority 3</b>  The low risk associated with these routes indicates low priority for investment of time and funds to mitigate risk.  For roads in this category that are important for public access, the Forest Service should work with cooperating agencies to provide adequate maintenance, where appropriate.
<b>Medium Risk / Low Benefit</b>  <b>412 miles of ML1 Roads</b> <b>12 miles of ML2 Roads</b>	<b>Decommission, Close, or Administrative Use Only</b>  General public motorized access is not recommended for these roads, unless the road is essential for the management of the overall public access.  Most of these roads should be closed or restricted to administrative use only depending on the access needs.  If there is no compelling administrative or public need for the road in the long-term, then it should be decommissioned.
<b>Medium Risk / Medium Benefit</b>  <b>311 miles of ML1 Roads</b> <b>367 miles of ML2 Roads</b> <b>5.2 miles of ML3 Roads</b>	<b>Mitigate – Maintain Priority 2</b>  The majority of these roads should remain open for an administrative use or open for the general public, depending on which type of access is appropriate to meet resource management and recreation objectives.  The risks associated may require some mitigation. Mitigation depends upon the specific risks and may include, but is not limited to: additional maintenance, reconstruction, relocation, seasonal road closure. The scale and frequency of these activities will depend on the severity of the risk and the availability of funds. Roads that are ranked within the Medium Risk/High Benefit and High Risk/High Benefit categories take a higher priority in the allocation of mitigation and maintenance funding.
<b>Medium Risk / High Benefit</b>	<b>Mitigate and Maintain - Second Priority</b>

**Table 10. Recommendations for risk / benefit categories for roads**

<b>Risk / Benefit</b>	<b>Opportunities for Roads</b>
<p><b>15 miles of ML1 Roads</b>  <b>327 miles of ML2 Roads</b>  <b>5.1 miles of ML3 Roads</b>  <b>5.9 miles of ML4 Roads</b></p>	<p>The majority of these roads should remain open for administrative use or open for the general public, depending on which type of access is appropriate to meet resource and recreation management objectives.</p> <p>The risks associated may require some mitigation. Mitigation depends upon the specific risks and may include, but is not limited to: additional maintenance, reconstruction, relocation, seasonal maintenance restriction, and seasonal road closure. The scale and frequency of these activities will depend on the severity of the risk and the availability of funds. Roads that are ranked within the High Risk/High Benefit categories take a higher priority in the allocation of mitigation and maintenance funding.</p>
<p><b>High Risk / Low Benefit</b></p> <p><b>39 miles of ML1 Roads</b>  <b>1.8 miles of ML2 Roads</b></p>	<p><b>Decommission, Close, or Mitigate – Highest Priority</b></p> <p>Vehicle access is not recommended based on the Risk/Benefit Analysis. Roads in this category should be administratively closed or decommissioned.</p> <p>The majority of these roads are not appropriate for administrative use in their current location or condition. If a road is needed for administrative reasons, it should be closed or remain open as an administrative use road.</p> <p>If access to facilities is provided by the route, it is a high priority to evaluate the potential for mitigating risks on these roads.</p> <p>Coordinate with county government or private landowners to determine maintenance responsibility on roads needed for access to private lands.</p> <p>If a road's primary use is access to communities, request public roads agencies (county, towns, state government) to assume road operational jurisdiction.</p> <p>If a road is needed exclusively for access to private land or needed to manage activities under special use permits, issue a permit for the road.</p> <p>If roads or road segments are not open to the public and not under permit, decommission the road.</p>
<p><b>High Risk / Medium Benefit</b></p> <p><b>45 miles of ML1 Roads</b>  <b>253 miles of ML2 Roads</b>  <b>4 miles of ML3 Roads</b></p>	<p><b>Mitigate or Administrative Use Only</b></p> <p>For routes within this category that do not have a public benefit, restrict access to administrative use.</p> <p>The risks associated with these routes may require some mitigation activities. Mitigation depends upon the specific risks and may include, but is not limited to: additional maintenance effort, reconstruction, relocation, seasonal maintenance restriction, and seasonal road closure. The scale and frequency of these activities will depend on the severity of the risk and the availability of funds.</p>
<p><b>High Risk / High Benefit</b></p> <p><b>775 miles of ML2 Roads</b>  <b>309 miles of ML3 Roads</b>  <b>5.6 miles of ML2 Roads</b>  <b>8.1 miles of ML3 Roads</b></p>	<p><b>Maintain and Mitigate - Highest Priority</b></p> <p>Most of these routes are appropriate for general public access to the Forest. Some routes may be open for administrative use only in order to control access to sensitive cultural or biological resources.</p> <p>The risks associated with them may require some mitigation activities. Mitigation depends upon the specific risks and may include, but is not limited to: additional maintenance effort, reconstruction, relocation, seasonal maintenance restriction, seasonal road closure. The scale and frequency of these activities will depend on the severity of the risk and the availability of funds.</p>

## Guidelines for Mitigating Road Risks

The general guidelines for mitigating the risks discussed in the previous section are listed below. These guidelines should be used for existing roads or when a road needs to be relocated due to unacceptable resource risks.

### **Road Management:**

- close or seasonally restrict road use to minimize adverse impacts to wildlife species that require solitude or tolerate only minimal disturbance
- control road use over perennial streams
- continue inventory efforts to evaluate the extent of noxious weed and invasive plant species of concern
- incorporate non-native invasive species prevention and control into road maintenance
- treat non-native invasive species before roads are decommissioned; follow-up based on initial inspection and documentation
- close or seasonally restrict road use when the roads are impassable due to wet conditions to minimize adverse resource damage

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## Step 5: Describing Opportunities and Priorities

### Purpose

The purpose of this step is to:

- Identify management opportunities and priorities and formulate proposals for changes to the forest transportation system that respond to the issues, risks, and benefits identified previously in the analysis.
- Compare existing motor vehicle use with desired conditions, and describe options for modifying the forest transportation system that would achieve desired conditions.

### Actions that Respond to the Issues

The following section describes strategies that the Forest may choose to employ in projects and situations where the issues occur (see Step 3). The scale at which these actions may be implemented is dependent on the site and the compatibility of the action with the overall management focus of the surrounding area. The list below is intended to provide options that project leaders and decision-makers may consider when implementing changes to the road system.

#### Issue 1: Insufficient resources for maintenance of the existing road system

**Action:** Reduce the number of road miles that need to be maintained or reduce the maintenance level to reduce maintenance costs. Reducing the miles of roads that need to be maintained by converting closed roads into motorized trails would effectively increase trail maintenance costs and is not a recommended action solely to address this issue.

**Action:** Leverage funds/efforts to increase maintenance capabilities. Continue to seek opportunities within the Forest, with other Forests, with counties and private individuals to increase the amount of maintenance accomplished through cooperative efforts. For trails there are opportunities to work with volunteers to maintain them.

**Action:** Prioritize roads that are good candidates for transfer of jurisdiction to counties, which reduces the number of road miles requiring maintenance with NFS funds. NFS roads that provide access to private inholdings would be good candidates to transfer to county jurisdiction.

#### Issue 2: Need for access to private lands for landowners and state lands

**Action:** Maximize cooperation from landowners by proposing to issue a reciprocal easement.

**Action:** Transfer road jurisdiction to the county.

**Action:** Enter into a special use agreement with the landowner, stipulating that the permittee has maintenance responsibilities.

#### Issue 3: Human-caused fire and need for roads as evacuation routes during wildfires.

**Action:** Reduce road density in areas with high fire risk to reduce the potential for human-caused fires.

**Action:** Instead of decommissioning roads in high fire risk areas, close them for use as fire line roads during prescribed burns and wildfires in consultation with the fire staff.

**Action:** Restrict motorized vehicle use on the forest to a designated road system through travel management.

**Action:** Utilize traffic devices such as signs and physical barriers that discourage use of unauthorized roads. Natural material to prevent use (downed trees, boulders, etc.) is preferred in most cases, but in situations where previous decommissioning efforts have been unsuccessful, more aggressive means may be employed.

**Action:** Monitor unauthorized roads after the installation of barriers and other mitigation measures. Keep records of successful and unsuccessful strategies for discouraging travel to improve future rehabilitation projects.

#### **Issue 4: Need for access to firewood and other forest products gathering areas.**

**Action:** Identify areas with supplies of suitable firewood or forest products along open system roads, and provide maps to the public to reduce the use of closed or unauthorized roads.

#### **Issue 5: Known Cultural Resources and Tribal Use/Traditional Cultural Property**

**Action:** After consultation with tribal leaders, identify roads that can be gated to control access. Access may be managed under permits rather than a publicly open road.

**Action:** Transfer jurisdiction and maintenance to permit holders.

**Action:** Reroute existing roads that impact important heritage sites.

#### **Issue 6: Roads have effects on Wildlife Habitat**

**Action:** Reduce the number of roads located in habitat for species-of-concern and species-of-interest.

**Action:** Place seasonal restrictions on roads going through critical habitat.

**Action:** Reduce the road width and maintenance level to minimum needed for safe vehicle passage and to meet the intended need in sensitive wildlife areas.

#### **Issue 7: Roads have effects on Watershed Conditions.**

**Action:** Implement the guidelines for mitigating road risks to reduce soil and drainage impacts from roads.

**Action:** Provide information and education about motor vehicle regulations and responsible use of motorized vehicles on the National Forest. Install information boards at area trailheads, recreation sites, and parking areas.

**Action:** Install route numbers on all system roads at junctions with system and unauthorized routes to assist users with compliance of motor vehicle use regulations.

**Action:** Educate the public to create an understanding of the problems created by off road driving. Implement an ongoing effort to educate forest users of the motorized travel policy.

**Action:** Utilize enforcement to curtail off-road driving. Implement patrols and field presence at appropriate times of year (such as hunting season, holidays, weekends, etc.) in identified areas. This effort is also used to educate users of the travel policy.

**Action:** Rehabilitate areas damaged by off-route driving.

#### **Issue 8: Roads provide access to the public for recreational purposes**

**Action:** Maintain access to recreation sites that are provided by the Forest Service for public use.

**Action:** Maintain and update the Motor Vehicle Use Map.

**Action:** Maintain road signage in accordance with handbook direction.

#### **Issue 9: Roads provide access for general forest management.**

**Action:** Focus maintenance funds on the high priority roads identified in Step 4 of the analysis to provide long-term service on the roads that are needed the most.

**Action:** During the NEPA process for management activities, consider closing (ML1) other open roads in the project area where a reduced maintenance cost would be realized.

**Action:** Maintain and update the Motor Vehicle Use Map as roads are closed to administrative use only.

## Desired Conditions for the future Road System

### The Minimum Road System

The 2005 Travel Management Rule at 36 CFR 212.5 (b) states:

“...b) Road system--(1) Identification of road system. For each national forest, national grassland, experimental forest, and any other units of the National Forest System (Sec. 212.1), the responsible Official must identify the minimum road system (MRS) needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. In determining the minimum road system, the responsible official must incorporate a science-based travel analysis at the appropriate scale and, to the degree practicable, involve a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. The minimum system is the road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR part 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.”

This report documents the science-based travel analysis to be used by the responsible official for identification of the forest’s minimum road system following appropriate NEPA analysis. The working group has identified a variety of opportunities for making changes to current road management practices that would meet the direction in 36 CFR 212.5 (b). Based on the matrix recommendations in Step 4, approximately 830 miles of ML1 and ML2 roads could be closed, decommissioned, or converted to a trail. The working group took a more detailed look at the Low Benefit, Medium and High Risk roads. Of these roads, the team felt that 161 roads totaling 117 miles could be decommissioned or converted to trails

and removed from the system. Refer to Appendix A for roads recommended for inclusion in the MRS and Appendix E for the location of the roads.

A final consideration in developing the MRS is road maintenance. Based on funding levels over the previous five years, the Colville National Forest can only afford to maintain approximately 7.75% of the road system. This trend is decreasing and by next year the federally appropriated funding will maintain less than 4% of the road system. A road system that is economically in balance with funds available for maintenance will not result in a road system that meets the access needs for public or for administrative purposes.

## Step 6: Reporting

### Purpose

The purpose of this step is to report the key findings of the analysis.

### Key Findings of the Analysis

Through the travel analysis process, the working group does not recommend constructing additional roads. The working group ranked routes based on their risks to natural and cultural resources and their benefits to recreation use, permittee access, firewood-gathering access, and emergency (namely, fire) access. The working group identified opportunities where about 30 percent (1,295 miles) of NFS roads analyzed could be decommissioned, closed, converted to a trail, or mitigated to reduce resource risk, and 70 percent (2,996 miles) of the current road system could be mitigated to reduce resource risk and then maintained. The map in Appendix E shows the travel analysis process recommendations. A complete list of the individual rankings of each criterion for each road can be found in Appendix A.

## Literature Cited

USDA Forest Service. 1999. Roads Analysis: Informing decisions about managing the National Forest Transportation System. Misc. Rep. FS-643. Washington, D.C.: U.S. Dept. of Agriculture Forest Service. 222 pp.