

United States

Travel Analysis Report

Department of

SHOSHONE NATIONAL FOREST

Agriculture

Located in Park, Hot Springs, and Fremont counties in Wyoming
USDA Forest Service, Shoshone National Forest

Forest Service



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EXECUTIVE SUMMARY

This document is the Travel Analysis Report (TAR) for the Shoshone National Forest. This Travel Analysis Report documents a route-by-route analysis of all National Forest System roads on the Forest and recommends the minimum road system needed for public access and Forest management.

The outcome of the TAR is a set of science-based recommendations for the Forest transportation system to meet current and future management objectives. These recommendations are based on an analysis of the physical, biological, social, and economic risks and benefits of every system road. Travel Analysis is intended to inform subsequent National Environmental Policy Act (NEPA) processes, allowing individual projects to be more site-specific and focused, while still addressing cumulative impacts. The Travel Analysis Process (TAP) neither produces decisions nor allocates National Forest System lands for specific purposes. It merely provides the analytical framework from which to make recommendations that may then be examined in the NEPA process. It describes current conditions, risks, benefits, opportunities (needs for change), and recommends priorities for action. Future NEPA analyses that include public involvement may carry forward, reject or change the recommendations in this report, and provide the basis for making specific transportation system related decisions.

Key Results and Findings

The Interdisciplinary Team (IDT) assigned scores to roads based on the road's *benefit* to Forest management and the road's *risk* to natural and cultural resources.

Opportunities for potential changes to the road system are summarized in Table 1.

Table 1: Summary of Recommendations to Roads within the Shoshone National Forest.

Recommendation	Number of Miles
Likely Needed for Future Use	1,164
Likely NOT Needed for Future Use	52

INTRODUCTION

The Travel Analysis Process, as described in the Forest Service Handbook FSH 7709.55, chapter 20, consists of six steps which are as follows:

- Step 1: Setting Up the Analysis
- Step 2: Describing the Situation
- Step 3: Identifying Issues
- Step 4: Assessing Benefits, Problems, and Risks
- Step 5: Describing Opportunities and Setting Priorities
- Step 6: Reporting

Travel Analysis is an iterative, not a one-time, process. When conditions change, additional analysis may point to the need for revisions to the recommendations.

This TAR does not address non-motorized or motorized trail opportunities, it is focused only on National Forest System Roads (NFSR).

Travel analysis neither produces decisions nor allocates NFS lands for specific purposes. Rather, responsible officials, with public involvement, make travel management decisions that are informed by travel analysis.

1.0 SETTING UP THE ANALYSIS

1.1 Objectives of the Analysis

The primary objective of this travel analysis is to provide the Shoshone National Forest leadership with an appropriate level of information to manage and maintain a road system that is safe and responsive to public and agency needs, efficiently managed, and environmentally sound. This travel analysis develops, organizes, and displays information about Operational Maintenance Level (ML) 1 through 5 National Forest System Roads (NFSR).

Other objectives of this travel analysis are:

- Inform a Forest travel management plan for the Shoshone National Forest
- To support sub-Forest scale and project level analyses
- To help identify the minimum road system needed for public and agency access in order to achieve Forest and resource management goals and safeguard ecosystem health
- To identify opportunities and provide recommendations for improving the Forest transportation system
- To help prioritize funding and route maintenance needs

1.2 Interdisciplinary Team Members and TAP Responsibilities

<u>Name</u>	<u>TAP Area of Responsibility</u>
Brandon Taglioli	Forest Engineer
Joe Hicks	Forest Botany / Range Management
Karri Cary	Forest Hydrologist
Shawn Anderson	Forest Fish Biologist
Kyle Wright	Forest Archaeologist
Ken Ostrom	GIS

Other personnel from Districts across the Forest represented Engineering, Wildlife, Recreation, Law Enforcement and Timber.

1.3 Information Needs

The following information and database sources were used for this TAP:

- The Shoshone National Forests Land and Resource Management Plan
- INFRA Roads Database
- Geographic Information System (GIS) spatial databases for roads, land ownership, 6th level watersheds, streams, riparian areas, soil types, architectural sites, invasive species, recreation sites, T&E species, etc.
- Shoshone Motor Vehicle Use Map (MVUM)

1.4 Analysis Plan

A team was assembled to define an analysis plan for the Shoshone National Forest. This analysis was completed during a three-day workshop in which the team reviewed GIS data, INFRA data, aerial and topographic data, historic planning and project documents and filled out the TAP Matrix spreadsheet. The team collectively ranked each route based on the TAP criteria, which allowed for an iterative, collaborative, and rapid analysis process. Additionally, the roads identified as needing an in-depth analysis in the 2015 TAR were further evaluated and designated as needed or not needed for future use.

The main focus of this TAP is to evaluate all existing NFSRs on the Shoshone National Forest for benefits and risks to other resources. During this evaluation existing roads that are currently not on the system were identified as potentially needed for land management activities. Travel analysis may be used to inform land management planning when necessary to address issues relating to transportation (FSM 7712.2).

The first step was to identify the most important road-related issues in the Shoshone National Forest and the information needed to address these concerns. The issues include environmental, social, and economic components. It was important to understand how these issues arose and how they have been addressed in the past. Consensus among the ID team resulted in the final list of issues

that were used to drive the analysis. See Chapter 3.0 of this report for a list and description of these issues.

The next step in the process required ID team members to assess each road with respect to its relative benefits and associated risks. High, moderate, and low benefit ratings were assigned for each road with respect to its recreational access, timber access, fuels treatment access, range access, and special use access. High, moderate, and low risk ratings were assigned for each road with respect to its potential to adversely impact water resources, aquatic organism passage, wildlife, botany, heritage resources, and public health & safety/financial burden. Numerical indices were then applied to each high, moderate, and low rating, resulting in a benefit factor and risk factor for each road. The benefit factors and risk factors were then summed to determine “Total Benefit” and “Total Risk” factors for each road.

For example, Road 000 was rated as High Benefit for recreational use and Low Risk for archeology. The High Benefit rating for recreation would be assigned a benefit factor of 2, and the Low Risk rating for archeology would be assigned a risk factor of 0. The Total Benefit factor would be determined for that road by adding all five of the benefit factors, and the Total Risk factor would be determined for that road by adding all six risk factors. In this example, let’s say that the Total Benefit factor was determined to be 10, and the Total Risk factor was determined to be 0.

The Total Benefit and Total Risk factors were then assigned to one of nine possible road management categories as follows:

- High Benefit/High Risk (H/H)
- High Benefit/Medium Risk (H/M)
- High Benefit/Low Risk (H/L)
- Medium Benefit / High Risk (M/H)
- Medium Benefit / Medium Risk (M/M)
- Medium Benefit / Low Risk (M/L)
- Low Benefit/High Risk (L/H)
- Low Benefit/Medium Risk (L/M)
- Low Benefit/Low Risk (L/L)

In the example above, a 10 Total Benefit factor (score) was determined to be a High Benefit, and a 0 Total Risk factor was determined to be a Low Risk. Therefore, Road 000 was assigned to the High Benefit/Low Risk road management category. For more details on how index numbers were assigned to each rating and how the road management categories were determined from total factor numbers, see Chapter 5.0 of this report.

Analysis Report and Map. This step described the opportunities to improve the transportation system and identified priorities to help the decision makers in managing the roads within their jurisdiction. Key findings and recommendations are summarized in Chapter 6.0 of this report to highlight the results from this analysis.

1.5 Public Involvement

Public involvement related to road issues is a continuous process and each district address's travel concerns as they become known. The Forest has recently completed a Forest Plan Revision where the public had the opportunity to comment on transportation related issues. The Forest is in the early stages of travel management and during this process, the public has had and will continue to have ample opportunities to provide input to the transportation system. For example, the Forest held public meetings in June of 2016 and invited public input on the existing transportation system. Public input received will be used to develop the Proposed Action. More public input opportunities will be available when the draft environmental impact statement (DEIS) is released.

2.0 DESCRIBING THE SITUATION

2.1 The Analysis Area

The Shoshone National Forest is in the middle of the Rocky Mountains in northwest Wyoming (

Figure 1). The Shoshone extends more than 180 miles from the Montana state line to South Pass near Lander. It is bordered by the Custer and Gallatin national Forests on the north and by Yellowstone National Park and the Bridger-Teton National Forest on the west. The Shoshone is set within the Absaroka, Beartooth, and Wind River mountains.

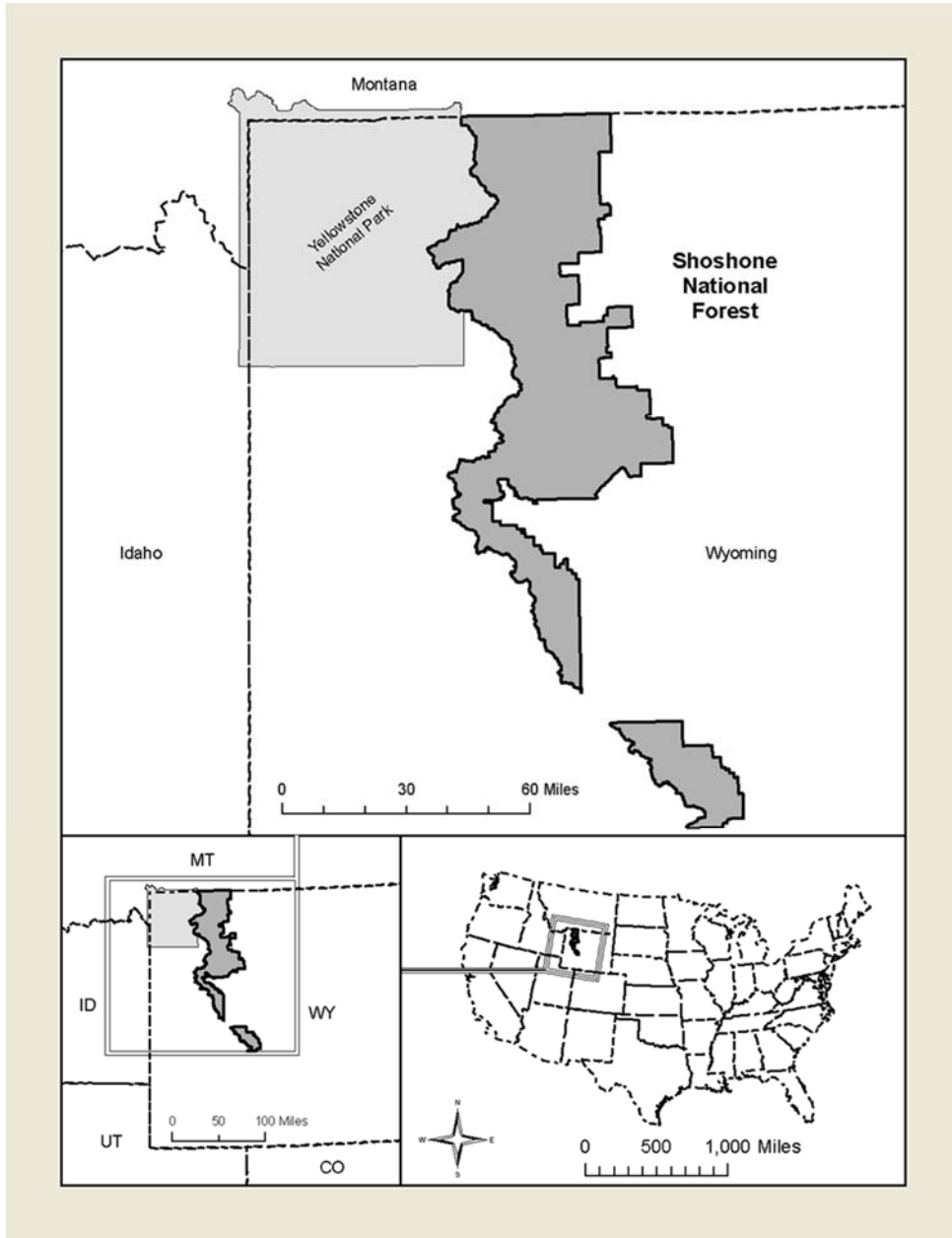
The Shoshone consists of 2.4 million acres in Fremont, Hot Springs, Park, Sublette, and Teton counties. 1.4 million acres, or 55%, of the Forest is within Wilderness areas. It is divided into five ranger districts: the Clarks Fork, Greybull, and Wapiti Ranger Districts are administered from Cody, Wyoming; the Washakie Ranger District is administered from Lander, Wyoming; and the Wind River Ranger District is administered from Dubois, Wyoming. The Supervisor's Office is located in Cody, Wyoming.

The Shoshone National Forest is part of the Greater Yellowstone Area. The Greater Yellowstone Area is a vast, important, and largely intact northern temperate zone ecosystem. The Shoshone plays an integral role in this ecosystem, providing habitat for wide-ranging wildlife including grizzly bear, elk, bison, and wolf. The Shoshone also provides a huge expanse of natural landscapes, a breathtaking backdrop of natural resources, and outdoor lifestyles for local communities.

The terrain varies widely from sagebrush flats to rugged mountains because the Shoshone is situated on the western edge of the Great Plains and the eastern side of the continental divide. Elevations on the Shoshone range from 4,600 feet at the mouth of Clarks Fork Canyon to 13,804 feet on Gannett Peak, Wyoming's highest point. The higher mountains are snow clad most of the year with immense areas of exposed rock interspersed with meadows and forests.

Most of the Shoshone is within the upper Missouri River Basin, subdivided by the Wind/Big Horn and Clarks Fork of the Yellowstone River basins. The southern tip of the Shoshone is in the Sweetwater Drainage, which flows into the Platte River System. Principal rivers within the Shoshone boundary are the Clarks Fork of the Yellowstone River, North and South Forks of the Shoshone River, and the Greybull, Wind/Big Horn, and Popo Agie rivers.

Figure 1. The Shoshone National Forest



2.2 The Shoshone National Forest Transportation System

The transportation system within the Shoshone consists of roads and trails that provide access to public lands and to private inholdings. Virtually every activity that takes place on the Shoshone uses the transportation system (including outdoor recreation, wildfire management, commercial livestock grazing, vegetation and wildlife management, natural resources development, electronic and communication site and utility corridor maintenance, as well as the management and administration of public lands).

There are 1,137 miles of National Forest System (System) roads on the Shoshone. The miles of System roads have declined by about 10 percent since 1989. Beginning in the late 1990s, unauthorized, or non-System, routes have been partially inventoried. These may be user-created routes or old temporary roads receiving motorized use. Recommendations for disposition of these routes are included in project-level planning. Annual adjustments to the Shoshone's road system occur due to the gathering of data that is more accurate, additions from new construction and non-system routes, and reductions due to decommissioning of system roads.

New construction, which averaged about 4 miles per year in the first decade following the 1986 Forest Plan, dropped to less than 1 mile per year in subsequent decades. New construction generally results from the need for vegetation management projects. The amount of new construction varies from year to year, depending on the areas needing access.

Decommissioning, averaging about 6 miles per year between 1990 and 2010, occurred on both System roads and non-System routes.

The availability and popularity of four-wheel drive and off-highway vehicles have resulted in an increased demand for motorized opportunities on the Shoshone. The demand for this type of motorized recreation results in the continued presence, and sometimes creation, of unauthorized routes on the ground.

Public use of some roads may be allowed seasonally, or permitted year-round. Some roads are reserved for administrative purposes.

Generally, the higher the maintenance level, the more often a road receives maintenance and the better the condition of the road. The majority of the NFS road mileage on the Shoshone is in maintenance level 2. Roads meeting identified long-term, single-purpose needs but not constant need or use may be placed in the maintenance level 1 category. Level 1 roads are physically closed and not open for motor vehicle use until needed for management activity.

Roads are characterized in a variety of categories, two of which are most prominent—operational maintenance level and functional class.

Operational maintenance level is a description of the current maintenance level of a road considering today's needs, road condition, budget constraints, and environmental concerns. It defines the level to which a road is being maintained. Table 2-1 illustrates the number of miles by operational maintenance level. Operational maintenance levels are described as follows:

Level 5 —Roads that provide a high degree of user comfort and convenience.

Level 4 — Roads that provide a moderate degree of user comfort and convenience at moderate travel speeds.

Level 3 — Roads that are open and maintained for travel by a prudent driver in a standard passenger car.

Level 2 — Roads that are open for use by high-clearance vehicles.

Level 1 — Roads that have been placed in storage (for longer than one year) between intermittent uses. Basic custodial maintenance is performed. Road is closed to vehicular traffic.

Table 2-1. Summary of Shoshone roads by operational maintenance level

Operational maintenance level	Miles Forest System Roads
Level 5	10
Level 4	4
Level 3	170
Level 2	768
Level 1	185
Total	1,137

System roads are categorized into one of three functional classes—arterial, collector, or local. Functional class describes the way a road services land and resource management needs and the character of service it provides. The branching system of arterial, collector, and local roads is the network that provides access to NFS lands.

Arterials are the main travel corridors across the Shoshone. They provide access to large land areas, usually connect with other arterials or public highways, and are the primary travel corridors for goods, services and access to and from the Forest. They connect main highways to collector and local roads, tend to be the longest in length, receive the highest traffic volumes, and are generally aggregate-surfaced. Arterials may be in maintenance level 3, 4, or 5. They are designed and maintained for passenger car use.

Collectors serve smaller land areas than arterials and usually connect arterials to local roads or terminal facilities. They tend to be moderate to long in length and receive moderate traffic volumes. Collectors may be aggregate-surfaced or native-surfaced. Collectors are generally in maintenance level 3 or 4, but may be in maintenance level 2.

Local roads provide access to specific locations and tend to be the shortest in length. They generally connect terminal facilities to collectors, arterials, or public roads. They often serve as access to specific points of use, such as timber harvest units, campgrounds, trailheads, physical features, etc. They may serve a single purpose or they may serve multiple uses. Local roads may be paved, aggregate-surfaced or native-surfaced. They generally serve lower volumes of traffic. Local roads may be in any of the maintenance levels.

There is no direct correlation between functional class and maintenance level. Table 2-2 shows road miles by functional class.

Table 2-2. Summary of Shoshone roads by functional class

Functional class	Miles FS System
Arterial	55
Collector	165
Local	917
Total	1,137

Timber harvest continues to involve road maintenance, frequent road reconstruction, and occasional construction. The need to maintain and improve the road system for motorized recreation opportunities and other uses continues. It is anticipated that the trend for construction will remain low. Expectations are that increases in traffic volume related to higher levels of and demand for motorized activity will result in an upward trend in the need for road maintenance and reconstruction. Miles of reconstruction and maintenance accomplishment generally fluctuate on an annual basis, based upon prioritization of available funding and urgency and magnitude of need. Reconstruction and maintenance may occur on local, collector, and arterial roads, and on roads in all maintenance levels.

Open system road miles may fluctuate over time due to changes in resource management activities, wildlife habitat needs, resource damage, changing demands for access, and availability of funds for maintenance and improvement.

In the last decade, new construction averaged less than 0.5 mile per year. Timber harvest activity created the primary need for new road construction. New construction has occurred almost exclusively on local, maintenance level 1 or 2, roads in this time period.

In the last decade, road reconstruction averaged approximately 18 miles per year. Timber harvest and recreational use generated the need for most reconstruction on the Forest. Reconstruction is road-specific and has included activities, such as replacement of bridge and culvert structures, repair of flood damage, aggregate placement, road relocation, and restoration of road templates. Reconstruction has occurred on roads in nearly every maintenance level. Road reconstruction will continue to be necessary for managing and protecting resources, providing for increasing traffic volumes and recreational uses, and resolving safety concerns.

The term “decommission” encompasses varying types of activities meant to eliminate motorized use. Decommissioning activities may include: complete obliteration and rehabilitation; physically blocking, restoring natural drainage and revegetating; or scarification and seeding to return to natural production. A decommissioned route is not a system road. Much of the decommissioning that has been done has been related to watershed protection and improvement, changes in traffic patterns on highway reconstruction projects, elimination of multiple or braided tracks to the same area, and removal of user-created routes. In the last decade, decommissioning of system roads averaged approximately 1 mile per year. In that same timeframe, decommissioning of non-system routes averaged 3 miles per year.

Road maintenance is accomplished by the Forest Service on an annual basis and through authorizations, permits, and cooperative agreements with other agencies, commercial operators, and private parties. Road maintenance is not static in location or amount of investment. Maintenance of roads is dependent upon a number of factors, including:

- Total miles of open roads;
- Allocated funding for road maintenance;
- Miles of road maintained through commercial activities, such as timber sale contracts, and by cooperators or other parties;
- Funding allocated for reconstruction and improvement projects to support emergency repairs, mitigation of safety concerns, and other management activities;
- Funding needed for large projects, such as bridge replacement;
- Resource protection needs;
- Assigned operational maintenance levels; and
- Traffic use levels and season of use.

Road maintenance budgets fluctuate from year to year. Traffic volumes on the Shoshone's open road system have risen. Commercial user contributions are variable in location. Costs for equipment and materials increase over time. Repair of road damage caused by natural events such as flash flooding or intense storm and runoff events occurs. Occasional needs for high financial investment, such as bridge and major culvert replacement and aggregate placement, divert available maintenance funds. These factors affect the amount of road maintenance that is accomplished on an annual basis.

Appropriated funding is below that needed to annually maintain the entire road system at operational maintenance level standards. On average, the Shoshone physically maintains approximately 17 percent of the open road system on an annual basis. Generally, this includes surface blading most of the maintenance level 3, 4, and 5 roads (approximately 140 to 150 miles annually), which receive the most use, once a year. Approximately 30 miles of level 2 roads are maintained annually. As a result, roads are maintained on a priority basis, which includes user safety, resource protection, and resource management and administrative needs.

Road program funding is anticipated to remain static or decrease in the short term. Although not every road requires annual physical maintenance, roads in maintenance levels 3, 4, and 5 generally receive a higher level of attention as they are the primary access routes through the Shoshone and receive higher volumes of traffic. The trend for the majority of the Shoshone's roads is toward declining condition and service level due to the reduction in overall funding and increases in traffic volume and use.

Motor vehicle use maps have been created, per 36 CFR 212.51, which identify roads, trails, and areas that are open to wheeled motor vehicle use. The maps enforce the prohibition at 36 CFR 261.13. Wheeled motor vehicle use on other than those roads, trails, and areas shown on the motor vehicle use maps is prohibited. Motor vehicle use maps are subject to annual review and re-issuance. All roads allow non-motorized use.

It is anticipated that demand for roads and access would remain high to meet the needs for administration of the public lands, management of resources, and public use. Public use is anticipated to increase. Use of roads for vegetation and hazardous fuels treatments is expected to increase, at least in the short term. Funding needed to maintain and reconstruct/construct roads to meet the demand for road uses would increase. Conversely, road program allocations are expected to remain stable or decrease in the short term. Competition for road funds is anticipated to remain high. Vegetation treatment activities would continue to support road work necessary for those activities to occur.

2.3 Maintenance Funding

National Forest Roads are assigned a specific maintenance level that is based on a set of criteria

which describes how each individual road will be maintained. This criteria includes consideration for resource protection, user comfort, design speed, season of use, traffic volume and type and need for dust abatement.

This discussion displays dollar estimates for annual maintenance which includes blading, cleaning culverts and cattleguards, and maintaining draining structures and signing on level 2 through 5 roads. This recurring maintenance is important for keeping the surface drivable (blading out ruts and washboards), and limiting resource damage that could occur from blocked culverts or improper drainage. In addition to annual maintenance are various other funding needs such as checking level 1 roads periodically, installing or fixing gates, unexpected events such as wind throws, mudslides or slumps, brushing every 10 years, and surface rock replacement. It is difficult to calculate on an annual basis the total for these intermittent funding needs.

Maintenance for level 4 and 5 roads are primarily performed by other jurisdictions. With this being said, Forest staff is often consulted or input sought prior to maintenance work being performed.

Current Maintenance Funding

The Shoshone National Forest appropriated budget for road maintenance and management of roads was \$504,000 in fiscal year (FY) 2015. Approximately \$287,280 (57%) was available for on-the-ground road maintenance needs. Additional funding is available from Construction and Maintenance of Legacy Road and Trails (CMLG) and deposits from Timber Sales. CMLG funds are used to support Forest-wide projects but not all of these projects are related to maintenance of existing roads (ie. some funds may go to road decommissioning). Surface rock replacement and road maintenance deposits are intended to be used on roads used for logging haul. The Shoshone has been successful in applying for and receiving funds from the Federal Highway Administration for road repairs on maintenance level 3 and above roads.

Intermittent Funding Needs

Intermittent funding needs in addition to the annual maintenance include the following:

- Brushing is needed every 10 years, and is important for safety on Level 3 roads.
- Maintaining and replacing signs and signposts on system roads, gates, and cattleguards are considered in annual maintenance costs.
- Gate replacement and repairs on Level 1 roads, and or roads seasonally closed, also comes from annual maintenance funding.
- Damage from unexpected events such as slides or slumps is corrected with maintenance dollars unless the damage is large enough to qualify for alternative funding.
- Surface rock replacement on Level 3 roads requires a large influx of funds for the year the rock is replaced. Many of these roads require surface rock replacement, at least every 10 years.
- Bridge maintenance needs such as replacing running surfaces and guardrails.

Desired Maintenance Funding

The following tables describe the desired funding needed to maintain Level 2 through 5 roads consistently and according to maintenance level specification. These costs estimates are based on

annual maintenance needs such as blading, cleaning culverts and maintaining drainage structures.

**Table 2-5 Desired Annual Maintenance Costs by Maintenance Level
(based on average costs in INFRA)**

Maintenance Level	Cost/Mile	Desired Interval	Annual Maintenance Cost/Mile
2	\$800	5 Years	\$160
3,4&5	\$1,500	1 Year	\$1,500

**Table 2-6 Estimated Desired Annual Road Maintenance Need
(Does not include intermittent items listed above)**

Maintenance Level	Miles	Annual Cost/Mile	Total Cost Per Year
1	185	-	-
2	768	\$160	\$122,880
3,4&5*	184	\$1,500	\$276,000
TOTAL	1,137		\$398,880

* ML 4 and 5 roads are primarily maintained by other Jurisdictions.

Table 2-7 Estimated Desired Annual Road Maintenance Need if roads shown as “Likely Not Needed for Future Use” are downgraded to ML1 or removed from the system and existing non-system roads are added to the system.

(Does not include intermittent items listed above)

Maintenance Level	Miles	Annual Cost/Mile	Total Cost Per Year
1	232	-	-
2	748	\$160	\$119,680
3,4&5*	184	\$1,500	\$276,000
TOTAL	1,164		\$395,680

* ML 4 and 5 roads are primarily maintained by other Jurisdictions.

3.0 IDENTIFYING THE ISSUES

3.1 Description of the issues

The ID team and line officers identified the most important road-related issues. Information gathered from the recent Forest plan revision effort, public input on projects, and other responses from a variety of project proposals was incorporated into this list of issues. The issues are listed by three general categories: Environmental, Sociocultural, and Economic.

Category #1: Environmental Issues

- Effects on stream water quality and aquatic habitat due to increased sediment loads from roads.
- Impacts to aquatic species due to the presence of roads near streams.
- Impacts to certain terrestrial wildlife living in the Forest due to roads through terrestrial wildlife habitat and travel corridors.
- Impacts to plant species in certain areas of the Forest due to the presence of roads.
- Impacts of road-related activities due to the spread of invasive species on the Forest.
- Adequacy of Forest access to meet fuels management and fire suppression goals and objectives.
- Adequacy of Forest access to meet timber management objectives and goals.
- Adequacy of Forest access to meet range allotment goals and objectives.

Data needed to address these concerns:

- Various GIS feature classes for roads and resource themes.
- INFRA databases for roads attributes.
- Management Objectives

Category # 2: Sociocultural Issues

- Impacts on paleontological, archeological, and historic sites within the Forest due to the current system of roads.
- Adequacy of roads to satisfy the variety of motorized recreational needs on the Forest.
- Impacts on non-motorized recreation activities due to the amount of roads on certain parts of the Forest.
- Adequacy of Forest access to meet the demand for special uses on the Forest.
- Adequacy of Forest access to meet administrative management objectives and goals.

- Effects on water quality due to increased sediment loads from roads.

Data needed to address these concerns:

- GIS features classes for roads, watershed themes such as streams, riparian, water bodies, watershed condition assessment rating; ownership, heritage sites, recreation features, timber production areas, wildlife ranges, botanical areas, developed sites, and other areas of concern.
- INFRA databases for roads and heritage sites.
- SUDS database for special uses
- Management Area objectives (Forest Plan)

Category #3: Economic Issues

- Adequacy of funding for road maintenance for the current road system under Forest Service jurisdiction.

Data needed to address these concerns:

- GIS accuracy for roads
- INFRA databases for roads and condition survey data
- Forest Service records for road and trail maintenance

4.0 ASSESSING BENEFITS, PROBLEMS AND RISKS

Purpose

The purpose of this step is to:

- Describe the analysis process
- Describe the criteria and rankings used in the benefit and risk analysis
- Summarize the results of the benefit and risk analysis

The Analysis Process

The benefit and risk criteria categories (Table 4-1) were developed by considering the issues from Step 3 and additional knowledge and information from the District staff. Each road was then evaluated against the identified benefits and risks.

Criteria and Rankings Used in the Benefit and Risk Analysis

Roads on the Shoshone National Forest provide access for many uses and users. They also provide the infrastructure to facilitate motorized recreation and Forest management. However, their presence has possible negative effects on the natural and cultural resources of the Forest, maintenance and repair costs in excess of recent budgetary allocations. The IDT identified the

following benefits and risks of roads as the most important resource issues for managing the transportation system on the Shoshone National Forest.

Table 4-1: Road Benefits and Risks

Benefits	Risks
<ul style="list-style-type: none"> • Recreation Access • Timber Access • Fuels Treatment Access • Range Access • Special Uses 	<ul style="list-style-type: none"> • Water Resources • Aquatic Organism Passage • Wildlife • Botany • Heritage Resources • Public Health & Safety / Financial Burden

The IDT evaluated each road for each of these benefits and risks and assigned a numerical value for each category. This was based on field knowledge of the routes, data contained in GIS layers, maintenance and repair cost data contained in INFRA, and professional knowledge of the routes, their resource impacts and benefits for various uses. High risks and benefits were assigned a numerical value of two (2), medium benefits and risks were assigned a numerical value of one (1), and low benefits and risks were assigned a numerical value of zero (0). Within the watershed rating, it was felt a High value of 2 was not significant enough when combined with the other resources and the High value was weighted to a 3; this was the only special case during this process. Assignment of a High (2), Medium (1), or Low (0) rating for each benefit and risk category generally followed the guidelines presented below.

Table 4-2: Road Benefit and Risk Guidelines

Benefits		
Issue	Rating	Criteria Guidelines
Recreation Access	High	Roads/trails that provide access to numerous or high value recreation opportunities and/or connectivity to many other motorized routes.
	Medium	Roads/trails that provide access to some recreation opportunities and/or connectivity to some other motorized routes.
	Low	Roads/trails that provide access to limited recreation opportunities and do not provide connectivity to other motorized routes.
Timber Access	High	Roads/trails that provide access to areas that periodically undergo management in multiple resource program areas (e.g. timber, range, fuels, fire, minerals, law enforcement etc.).
	Medium	Roads/trails that provide access to areas that infrequently have active management in more than one resource program area.

	Low	Roads/trails that provide access to areas that rarely have active management and serve only one resource program area.
Fuels Treatment Access	High	Roads/trails that are frequently used or will likely be needed for emergencies (such as fire suppression).
	Medium	Roads/trails that are infrequently used or needed for Fuels Treatment.
	Low	Roads/trails that are rarely used and will likely not be needed for Fuels Treatment.
Range Access	High	Roads needed in areas with no other access to range allotments.
	Medium	Roads where other routes are available
	Low	Roads desired for convenience rather than access.
Special Uses	High	Roads needed and are frequently used associated with Special Uses on the Forest
	Medium	Roads moderately used associated with Special Uses
	Low	Roads that are rarely and infrequently used associated with the Special Use program on the Forest.

Risks		
Issue	Rating	Criteria Guidelines
Water Resources	High	If greater than 25% of a road segment is within 300 ft. of a water resource and mass wasting is high (from watershed framework).
	Medium	If greater than 10% of a road segment is within 300 ft. of a stream and mass wasting is moderate OR If greater than 10% but less than 25% of a road segment is within 300 ft. of a water resource and mass wasting is high.
	Low	If neither of the above qualifications is met, the default for the rating is low.
<ul style="list-style-type: none"> The qualifications for a High, Moderate, or Low rating were articulated in the ruleset previously provided. Roads are one of the largest contributors of sediment into water resources which, in turn, can result in degradation and impairment. In particular, the literature identifies that the geomorphic effects of the contribution of fine sediment from Forest roads due to both chronic and road-slope mass-failure events can alter channel morphology, alter surface flow paths, and divert or extend channels. Given the risk of roads to water resources, the rating was weighted more heavily than that of the other resource areas. The Watershed Condition Framework (WCF) was used to the maximum extent possible to estimate the watershed risk ratings. The WCF “Road and Trail Condition Rating Rule Set”, specifically the overall “Road and Trail Condition Indicator” and the “Open Road Density” and a modification of the “Proximity to Water”, attributes were used to develop rating criteria. Site-specific road information and professional judgment were used to adjust the rating when appropriate. 		
Aquatic Organism Passage	High	<u>Road Segment Criteria:</u> If any road segment meets the following criteria: <ol style="list-style-type: none"> Aquatic Organism Passage = Two or more stream crossings impede any life stage aquatic organism passage at any flow

		level.
	Medium	If road segments do not rate as High (2), then rate as Medium (1) if the following criteria apply: <u>Road Segment Criteria:</u> If any road segment meets the following criteria: 1. Aquatic Organism Passage = One stream crossing impedes any life stage aquatic organism passage at any flow level.
	Low	If road segments do not rate as High (2) or Medium (1), then rate as Low (0).
Wildlife Resources	High	High levels of motorized and non-motorized use on roads/trails in highly roaded area.
	Medium	Moderate levels of motorized and non-motorized use on roads/trails in moderately roaded area.
	Low	Low levels of motorized and non-motorized use on roads/trails in minimally roaded area.
Botany	High	Numerous known populations of noxious weeds in vicinity of route corridor.
	Medium	Some known populations of noxious weeds in vicinity of route corridor.
	Low	No or few known populations of noxious weeds in vicinity of route corridor.
Heritage Resources	High	Known historic properties within road/trail prism or in vicinity of corridor.
	Unknown	Area of unknown archaeological potential, little or no archaeological survey and/or the presence of “needs data” sites.
	Low	No known or located historic properties within prism or in vicinity of corridor where archaeological potential has been largely assessed (through Class III archaeological inventory) or Level 3 or higher road where cultural resources are likely to be compromised.
Public Health and Safety	High	Heavy amount of non-motorized trail use and/or known user group conflicts.
	Medium	Moderate amount of non-motorized trail use and/or known user group conflicts.
	Low	Low amount of non-motorized trail use and/or known user group conflicts.

The same benefit and risk categories were used for all roads, regardless of maintenance level. This was done for simplicity and consistency. However, it is apparent that the benefits for open and closed roads are different.

Results of the Benefit and Risk Analysis

The Benefit/Risk Analysis matrices is shown in Appendix A and lists the benefits and risks associated with each road on the Shoshone National Forest. This benefit and risk analysis was based on GIS layers available at the time this analysis was being conducted. A matrix was created displaying each road and each benefit and risk category. This analysis resulted in nine possible benefit/risk pair categories discussed in chapter 5.

Appendix B contains maps illustrating roads classified into one of two designations. These are “Likely Needed for Future Use” and “Likely Not Needed for Future Use”.

5.0 DESCRIBING OPPORTUNITIES AND SETTING PRIORITIES

5.1 Introduction

In order to identify opportunities to improve the transportation system, the Shoshone National Forest Objective Maintenance Level 1 – 5 system roads were evaluated based on key benefits and risks associated with each individual road. Each road was assigned a High, Moderate, or Low benefit rating for six priority management areas: recreational use, fire/fuels access, timber access, special use access, and resource management/range access. Each road was also assigned a High, Moderate, or Low risk rating to show the degree of risk it posed to watersheds, wildlife, botany, archeology, aquatic organism passage, financial burden/public health and safety. Those ratings were then converted to numerical indices so that numerical value factors (score) could be totaled to produce a weighted Total Benefit Factor, and numerical risk factors could be totaled to produce a Total Risk Factor.

A critical need weighting factor was added to account for some roads that were identified as part of the minimum transportation system. A few examples of a critical needs include: access to utilities on National Forest Lands, access to Wyoming Department of Transportation facilities, or access to adjacent private and/or public lands.

5.2 Road Management Opportunities and Priorities

The Total Benefit factors and Total Risk factors discussed above resulted in a total benefit/risk number for each road. The Total Benefit factors ranged from 0 to 15, and the Total Risk factors ranged from 0 to 10. Those roads with a Total Benefit factor greater than 5 represent high benefit roads, and those roads with a Total Risk factor greater than 5 represent high risk roads. Based on this analysis, each road was assigned to one of four road management categories as follows:

- High Benefit/High Risk (H/H)
- High Benefit/Medium Risk (H/M)
- High Benefit/Low Risk (H/L)
- Medium Benefit/High Risk (M/H)

- Medium Benefit/Medium Risk (M/M)
- Medium Benefit/Low Risk (M/L)
- Low Benefit/High Risk (L/H)
- Low Benefit/Medium Risk (L/M)
- Low Benefit/Low Risk (L/L)

Roads with a high benefit represent those roads that provide important access for management on the Forest. Roads with a medium benefit represent those roads that constitute a moderate road system for management and access on the Forest. Those roads with a low benefit provide limited benefit to the multiple resource areas.

Roads with a high risk represent those roads that may be causing unfavorable resource and financial impacts. Roads with a medium risk present roads with moderate resource impact concerns. Those roads with a low risk represent roads that are not a major resource impact concern.

Road management options for each of the nine road management categories are as follows:

- High Benefit/High Risk – Priority roads for capital improvements
- High Benefit/Medium Risk – Priority roads with varying improvement needs
- High Benefit/Low Risk – Roads with ideal conditions
- Medium Benefit / High Risk- Priority roads for capital improvements
- Medium Benefit / Medium Risk – Medium priority roads with moderate improvement needs
- Medium Benefit / Low Risk – Priority roads in adequate condition
- Low Benefit/High Risk – Low priority roads for capital improvements
- Low Benefit/Medium Risk - Roads identified with moderate improvement needs
- Low Benefit/Low Risk – Roads with low improvement needs

6.0 TRAVEL ANALYSIS REPORT (TAR)

6.1 Key Findings

The roads analyzed in this report have been separated into categories by operational maintenance level and risk benefit rating as shown in Tables 6-1, 6-2, and 6-3.

Table 6-1. Summary of Likely Needed Roads by Benefit and Risk

Operational Maintenance Level	Benefit / Risk Rating	Road Numbers	Totals: Miles & number of Roads
Level 1:	High / High	None	0 miles, 0 roads
	High / Medium	200.5D, 200.5E, 420.1B, 420.1C	2 miles, 4 roads
	High / Low	126.1C, 217.1A, 334, 464.1B, 511, 538, 622	7.1 miles, 7 roads
	Medium / High	None	0 miles, 0 roads
	Medium / Medium	201.1D, 222, 336, 474.1U, 544, 814, N475.2B	6.7 miles, 7 roads
	Medium / Low	106.1A, 106.2A, 109.1J, 117.1D, 117.1Z, 118.1E,	26 miles, 30 roads

		128.1B, 130.2D, 133, 133.1C, 134, 144, 144.1A, 204.2A, 204.2H, 205, 205.2A, 212.1B, 212.1C, 215.1AA, 222.1A, 318.1B, 510.1A, 513.2H, 532.2I, 541, 562, 585.1A, 635, U213.3J	
	Low / High	None	0 miles, 0 roads
	Low / Medium	116.1A, 202.2C, 215, 219, 223, 223.1A, 230, 371.NG, 474.2I	10.6 miles, 9 roads
	Low / Low	103.3A, 103.3F, 109.1G, 109.2A, 114.1A, 114.1B, 114.1C, 114.1J, 114.1K, 114.2A, 115.1A, 115.1B, 115.1C, 115.1D, 115.1F, 115.1M, 116.1B, 116.1F, 116.B, 117.1BD, 117.1F, 117.2F, 117.2G, 117.2H, 117.2J, 117.2O, 117.3A, 117.3B, 117.3C, 117.3D, 117.BD, 117.G, 117.GA, 125, 125.1A, 125.1B, 125.1C, 125.1D, 125.1E, 125.1F, 125.1J, 126.1D, 133.1A, 136.203.1A, 203.1G, 212.1J, 212.1P, 213.3A, 213.3B, 213.3BA, 213.3C, 213.3D, 213.3DA, 215.2C, 217, 218, 218.2B, 225, 225.2A, 226, 226.1A, 226.1C, 226.1D, 227, 227.1A, 227.1B, 227.1D, 230.1A, 234, 234.2, 234.2A, 285.2H, 285.2M, 296.1B, 296.2R, 296.3I, 300.3R, 401.2E, 474.1B, 474.2H, 474.2H, 475.2A, 509.1A, 511.1A, 511.1C, 511.1D, 511.2E, 511.3A, 511.3F, 511.4C, 513.2F, 513.2G, 513.3B, 513.3C, 513.3D, 513.3E, 532.2D, 538.1D, 540.1N, 544.1C, 549.1E, 553, 558, 560, 562.1A, 562.1B, 564, 570, 572, 588, 605, 633, 900, 961, 961.1B, N296.3J	109.8 miles, 116 roads
Level 2:	High / High	101, 101.1O, 101.3I, 101.3K, 108, 119, 120, 182, 200.3C, 326, 352, 364, 431, 515, 945.2	71 miles, 15 roads
	High / Medium	101.J, 118, 123, 188, 200.3C, 200.3E, 200.5B, 201.1A, 201.1C, 202.2B, 202.2C, 202.2D, 203, 204.1A, 205, 213, 223, 223.1A, 224, 2421 , 302.1C, 306, 306.1A, 320.1A, 325.1A, 326.1K, 328, 351, 352.1B, 361, 362, 401, 401.1A, 401.1J, 402, 406, 406.1A, 409, 414, 415.1B, 417, 429, 429.1A, 431.1A, 431.1B, 431.1C, 432, 435, 435.1C, 435.1D, 438.1A, 439, 475, 510.1H, 515.3A, 554, 945, 945.2C, N101.1N, N101.1O	86.3 miles, 60 roads
	High / Low	100, 100.2A, 102, 103, 103.2C, 105, 107, 107.1A, 109, 109.1A, 109.1F, 111, 114.1M, 115, 117.1I, 118, 119.1E, 121.1A, 122, 128.1C, 130, 130.1B, 130.1Z, 130.2A, 130.2B, 130.2C, 140, 142, 142.1B, 146.1E, 149.1B, 168.1A, 178, 202, 204.2F, 206, 207, 208.1C, 209, 214, 217, 217.1A, 218, 277, 296.2E, 296.3B, 296.3P, 300.1L, 305, 309, 310, 310.1A, 310.1B, 310.1C, 312, 313, 313.1D, 313.1T, 316, 317, 319, 320, 320.2A, 320.2C, 322, 322.1A, 323, 324, 325.1B, 327, 329.1C, 329.2A, 330, 331, 334, 335, 350, 351.1C, 351.1D, 355, 363, 364.2A, 364.J3, 364.J4, 367, 371, 371.2A, 371.2B, 372, 376, 401, 401.2A, 401.2B, 402.3A, 405, 408, 408.1C, 411.1A, 420.1D, 424, 429.1B, 442, 443, 445, 447, 447.1A, 450, 450.1A, 453, 455, 455.1A, 455.1B, 455.1C, 456.1D, 456.1E, 457, 458, 463, 464, 464.1A, 465, 465.1C, 465.1D, 468, 468.1A, 468.1B, 470, 470.1B, 470.1C, 470.1D, 470.1E, 470.1F, 470.1G, 470.1H, 470.1I, 470.1J, 470.1K, 470.1L, 473, 474.2A, 474.2F, 479.1M, 479.2N, 479.2V, 479.2W, 479.2Y, 479.2Z, 483, 501, 504, 505, 505.1C, 505.1D, 506, 506.1A, 510, 511, 512, 512.1B, 515.1C, 515.2F, 516, 521, 521.2A, 528, 531, 533,	282.2 miles, 189 roads

		537, 538, 542, 542.II, 548.1D, 552, 552.1H, 555, 581, 717, 732, 733, 745, 802, D465.1A, N117.C, PL515.A, PVT 101.F, U111.2, U420.1E, U465.1B, U465.1C	
	Medium / High	300.1A, 300.1K, 326.1L, 423, 479.2P, 479.2Q, 715	3.9 miles, 7 roads
	Medium / Medium	100.1B, 101.T, 101.V, 116, 121, 121.1B, 183.1A, 200.5A, 200.5G, 202.2A, 203.1B, 203.2A, 300.1H, 300.1P, 300.3A, 315, 315.1A, 326.1D, 336, 337, 354, 359, 370696, 402.2B, 408.1A, 438.1B, 474.1S, 475.2A, 480.1A, 480.1E, 505.1A, 534, 540.1B, 544, 544.1B, 692, 734.1A, 945.2B	52.9 miles, 38 roads
	Medium / Low	100.1E, 100.3E, 101.1Y, 101.2A, 102.1B, 103.1A, 105.1A, 105.1F, 106, 110, 110.1A, 112, 114, 114.G, 115.1F, 117.2R, 118.1A, 118.1C, 118.1E, 127, 167.1A, 168, 172, 178.1A, 178.1B, 200.4A, 200.6B, 204, 207.2C, 207.2F, 208.1A, 209, 212.1L, 212.1N, 213.3B, 263.2A, 285.3B, 285.3C, 285.4A, 296.1A, 300.2C, 300.3C, 300.3G, 300.3M, 302.1B, 302.1E, 302.1G, 304, 304.1A, 304.1B, 304.1C, 305.1A, 305.1AA, 305.1B, 309.1A, 309.Z, 311, 311.1A, 311.1B, 314, 316.2, 316.3, 318, 326.1A, 326.1E, 329.1A, 330.1B, 331.1A, 333, 352.1A, 352.2A, 358, 358.1A, 360, 360.1B, 366, 366.1D, 366.1DA, 366.1E, 366.3A, 368, 368.1N, 369, 370699, 378, 378.1A, 378.1B, 379, 381, 402.2A, 402.2C, 402.2F, 402.2G, 402.2I, 446.1A, 446.1B, 446.1E, 474.1U, 474.2, 474.2C, 474.2G, 479.1A, 479.1K, 503, 504.1A, 507, 509, 513.2A, 513.2H, 515.2E, 528.2D, 532.2H, 532.2I, 533, 534.1C, 535, 540.1D, 540.1E, 545, 548, 548.1F, 549, 549.1C, 551, 556, 556.2A, 561, 600, 645, 734, 736, 903.1D, 904, 912, N402, N402.4A, P333.Z	161.2 miles, 137 roads
	Low / High	480.1F	0.3 miles, 1 road
	Low / Medium	100.2B, 123.2D, 136, 200.5F, 200.5H, 200.6A, 204.2E, 207.2C, 211.3A, 211.3B, 211.3C, 242120, 253.2G, 408.1B, 479.2O, 489, 491, 515.2D, 532.2B, 540.1K	6 miles, 20 roads
	Low / Low	100.1A, 100.1D, 101.1B, 101.3A, 101.D, 101.H, 102.1A, 102.1O, 104, 104.1A, 104.1B, 104.1E, 109.1C, 109.1E, 113, 117.1X, 117.2P, 123.1B, 130.1F, 130.2E, 135, 149, 149.1A, 152.2A, 161, 165, 182.1B, 200.4D, 200.4F, 208.1B, 209.4A, 210, 210.1A, 210.1B, 211, 212.1K, 263.2B, 277.2A, 277.2B, 277.2D, 28.1Z, 285.2H, 285.2K, 285.3L, 296.2F, 296.3L, 296.3R, 300.1N, 300.3D, 300.3E, 300.3S, 309.1O, 325, 327.1A, 327.1D, 327.2E, 329.1BS, 401.2D, 401.2K, 474.2B, 479.1B, 479.1F, 479.1N, 479.2A, 480.1I, 483.1B, 483.1P, 502, 505.1F, 505.1G, 506.1B, 510.1D, 510.1E, 514, 515.2H, 516.1B, 524, 529, 529.1A, 529.1C, 529.2A, 531.1A, 532.2A, 532.2D, 536, 540.1A, 540.1P, 542.1A, 543, 546, 554.1B, 554.1E, 582, 584, 585, 586, 589, 605, 617, 629, 654, 672, 701, 708, 719, 730, 747, 801, 907, 920, N104, PVT 101.2D	75 miles, 112 roads
Level 3:	High / High	None	0 miles, 0 roads
	High / Medium	200.3A, 200.3D, 285, 415, 419, 421, 426.1A, 426.1B, 435, 436, 438, 456.1C, 477, 515, 515.1F, 515.1G, 518, 518.1B, 540	30.9 miles, 43 roads
	High / Low	101, 101.1M, 109, 109.1B, 109.1D, 117.2K, 142.1A, 146, 146.1A, 146.1B, 146.1D, 148, 148.1A, 148.1B, 148.1C, 148.1D, 154, 157, 166, 167, 178, 200.3B, 201, 204, 208,	135.3 miles, 201 roads

		263, 277, 296.2A, 296.2B, 296.2G, 296.2H, 296.3D, 300, 300.1C, 300.1I, 300.2D, 300.2E, 300.2F, 300.2G, 300.2H, 300.5T, 302, 302.1A, 307, 308, 326, 327, 329, 329.1B, 411, 424, 427, 444, 444.1B, 446, 446.1D, 448, 451, 452, 461, 465, 466, 469, 474, 479.1L, 479.2S, 479.2X, 511, 513, 515.1D, 518.1A, 522, 532	
	Medium / High	None	0 miles, 0 roads
	Medium / Medium	510.1C	0.3 miles, 1 road
	Medium / Low	117.2M, 285.3E, 308.1B, 479.1A	1.3 miles, 4 roads
	Low / High	None	0 miles, 0 roads
	Low / Medium	410, 433	0.5 miles, 2 roads
	Low / Low	160, 178, 285.2B, 296.3A, 307.1A, 532.2C	1.7 miles, 6 roads
Level 4:	High / High	None	0 miles, 0 roads
	High / Medium	422, 422.1A, 422.1B, 426	0.9 miles, 4 roads
	High / Low	126, 126.1A, 126.1B, 129, 137, 147, 169, 170, 176, 212.1A, 212.1M, 296.3Q, 420, 456, 456.1A, 456.1B	2.9 miles, 16 roads
	Medium / High	None	0 miles, 0 roads
	Medium / Medium	None	0 miles, 0 roads
	Medium / Low	300.1B	0.4 miles, 1 road
	Low / High	None	0 miles, 0 roads
	Low / Medium	None	0 miles, 0 roads
	Low / Low	None	0 miles, 0 roads
Level 5:	High / High	None	0 miles, 0 roads
	High / Medium	412, 415.1A, 416, 434, 434.1A, 434.1B, 435.1A, 435.1B, 438.1C, 438.3	1.5 miles, 10 roads
	High / Low	139, 171.3, 212.1R, 296.2D, 300, 420.1A, 469.1A, 470.1A	7.7 miles, 8 roads
	Medium / High	None	0 miles, 0 roads
	Medium / Medium	None	0 miles, 0 roads
	Medium / Low	300.1E, 300.3P	0.2 miles, 2 roads
	Low / High	None	0 miles, 0 roads
	Low / Medium	None	0 miles, 0 roads
	Low / Low	472	0.1 miles, 1 road

Table 6-2. Summary of Likely Not Needed Roads by Benefit and Risk

Operational Maintenance Level	Road Numbers	Totals: Miles & number of Roads
Level 1:	103.2C, 103.Q, 107.1B, 116.D, 121.1F, 125.1G, 150, 200.4A, 200.4C, 202.1A, 209, 209.3A, 209.4C, 209.4D, 213.3I, 215.2A, 215.2B, 222.2A, 300.2Q, 285.2J, 296.2J1, 296.2J3, 329.1D, 329.1F, 329.1J, 401.1, 475.2A, 540.1N, 552.1B, 552.1C, 553.1B, 900.1A	22.4 miles, 32 roads
Level 2:	108, 119.1D, 121.1H, 123.1A, 123.2C, 263.2B, 300.3K, 300.3RA, 300.3T, 325, 355.3, 354.1C, 356, 356.1A,	29.2 miles, 58 roads

	356.1B, 359.1A, 377.S, 401.1M, 401.2L, 423, N945.2, 445.1A, 479.1C, 483.1Q, 496, 498, 501, 505.1E, 513.2E, 515.2G, 529.1B, 540.1F, 545.3E, 554.1B, 556.2B, 590, 632, 649, 801.A, 915, N112.1A, N401.1A, N402.2E, N402.2G, N402.2H, N402.2I, 351.1F, 402.2C, 402.2D, 402.2E, 402.2F, 402.2I, 402.2L, 402.2M, 402.2N, N402.2K, N402.2M, 474.1T	
Level 5:	212.1S	0.2 miles, 1 road

Table 6-3. Summary of existing non-system roads that have been identified as having a potential need for land management activities.

Operational Maintenance Level	Road Numbers	Totals: Miles & number of Roads
Level 1:	D536.1E, U715.1, N102.1H, N102.3, N102.4, N102.5, N102.6, N102.7, N102.E, N102.F, N102.G, P963, U528.2C, U528.2CA, U651, U651.6A, D711, D712.1B, U513.3G, U533.1D, U536.1C, U545.2A, U660, U661, U680, D532.6AA, D620, D726, D726.2, P304.1L, U303.2, U509.A, U533.1C, U533.2I, U542.A, U545.2C, U548.2H, U551.1E, U554.1K, U554.1K2, U563, U569, U571, U573, U578.1, U608, U609.1B, U615, U617, U617.1A, U645.1A, U659.1, U680.A, U680.B, U680.C, U724, U727.A, U728, U744, N125, N182.1A, U674, U674.1A, N296.B, U572.D2, U572.T, U604, U615.D, U621, U676	70.1 miles, 70 roads
Level 2:	401.1A, P285.4F, U302.1Z, U538.1M, D102.1K, PL515.1J, U532.1BA, U554.1L, U554.1M1, WR72, WR73, WR74, P303, U534.A, 277.xxx, 300.3J, D312.1A, D320.B, D583, NZ40, U309.1DA, U325.Y, U350.1A, U532.3B, WK34, WR75, WR76, NZ37, NZ36, NZ38, P277.2C, U312.2C, U313.1E, U908, WK32, WR67, WR69, WR70	9.1 miles, 38 roads

Note: Some road numbers may appear in multiple table cells. In these cases, the road was divided into segments because a section of a road crossed significant enough risk boundaries to have individual segments analyzed separately. For example, if a 20 mile long road is analyzed and the last mile is within high resource risk area; this last mile will have a different rating when compared to the rest of the road without any resource risks.

6.2 Recommendations

These recommendations are subject to change based on an on-the-ground site specific analysis. The following summary outlines recommendations for the Likely Needed roads shown in Table 6-1. These roads are shown as Likely Needed in Appendix B.

Roads listed in the H/H (High Benefit and High Risk) category should be considered for future capital improvements. These roads have resource and/or financial concerns. Action should be taken in order to reduce the risk impacts along these roads. These roads should receive the highest priority for maintenance and mitigation.

Roads in the H/M (High Benefit and Medium Risk) should be considered as a priority for maintenance and mitigation, but of a lesser in priority when compared to the roads in category H/H.

Roads in the H/L (High Benefit and Low Risk) category are ideal roads because they provide high benefits to Forest management and pose low risks.

Roads in the M/H (Medium Benefit and High Risk) category should be considered for priority mitigation of resource impacts, but of a lesser in priority when compared to the roads in category H/M.

Roads in the M/M (Medium Benefit and Medium Risk) category should receive mitigation and maintenance, though secondary in priority to roads with higher benefits or higher risks. These roads create some resource impacts but also provide benefits.

Roads in the M/L (Medium Benefit and Low Risk) are important and present a relatively low resource risk.

Roads in the L/H (Low Benefit and High Risk) category should receive mitigation and maintenance, though lower in priority to roads with higher benefits or higher risks.

Roads in the L/M (Low Benefit and Medium Risk) category should be considered as a low priority for maintenance.

Roads in the L/L (Low Benefit and Low Risk) category are relatively low resource risk.

Roads shown as Likely Not Needed in Table 6-2 should be decommissioned at the earliest available opportunity as funding allows. These roads are shown as Likely Not Needed in Appendix B. Not Likely Needed roads were selected by the Interdisciplinary team as roads that are not needed by resource specialists for the long term management of the National Forest.

Roads identified in Table 6-3 are existing non-system roads that have been identified as having a potential need for land management activities. The roads are shown as Likely Needed in Appendix B.