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Forest
Service

Southwestern
Region

Coconino
National
Forest



Travel Analysis Process Report

Coconino National Forest

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Introduction

This report describes the Travel Analysis Process for the CNF. Before the FS adopted the Travel Management Rule, the Roads Analysis Process was used, as described in the Forest Service Manual (7712.1) and publication FS-643, Roads Analysis: Informing Decisions About Managing the Transportation System. As required by Federal regulations (36 CFR §212), the Travel Analysis Process (TAP) revises and updates the Roads Analysis Process, adding motorized trails into the analysis. The Forest Service Manual, supplemented by FS 643, requires this report as one of the steps in implementing the Travel Management Rule.

The purpose of this report is to document the planning concerning motorized travel on the Coconino National Forest (CNF) to inform. This planning is required before beginning the environmental analysis process to designate routes according to the Travel Management Rule.

The Travel Analysis Process is adopted from FS-643 as follows:

- Step One: Setting up the analysis
- Step Two: Describing the situation
- Step Three: Identifying the issues
- Step Four: Assessing benefits, problems, and concerns
- Step Five: Describing the opportunities and setting priorities
- Step Six: Reporting

Maps are included as appendices that show existing condition and direction, and the routes recommended for designation for motorized use. Appendix A is a spreadsheet of all the roads on the Forest and information about these roads (the spreadsheet is more than 500 pages when printed).

Travel Analysis is an iterative process. When conditions change, additional analysis may point to the need for revisions in the recommendations. The designation process to follow will likely result in additional information and, perhaps, decisions that will not be exactly as recommended in this report.

The TAP is not a decision-making process. Travel Analysis provides the analytical framework from which to make recommendations that may be examined in the National Environmental Policy Act (NEPA) process that provides the basis, including formal public involvement, for making decisions.

In identifying a recommended minimum road, trail and area system, we considered risk- and value-related issues for resource protection and use, the following were considered:

- provision for recreational opportunities,
- access needs for adjacent property owners,
- conflicts among uses of National Forest System lands,
- natural and cultural resources
- road maintenance needs , and
- administrative access needs.

During numerous public meetings, the public provided information on these issues, particularly on recreational opportunities on the Forest. The public also provided information about the other issues and asked questions that helped to focus internal evaluations. Using this information, FS specialists and experts evaluated the routes for these issues and designated a minimum road system that provides both resource protection and necessary Forest access to be included as the Proposed Action in the CNF’s Travel Management Rule EIS.

Step 1: Setting Up the Analysis

Table 1 lists the travel analysis team members and the area of expertise for which they contributed to this process.

Table 1. Travel Analysis Core Team Members

Specialty	Name
Landscape Architect/ Forest Recreation Staff	James Beard
Recreation/ District Liaisons	Bill Stafford (Red Rock RD) Jerry Gonzales (Mogollon Rim RD) John L. Nelson/Brian Poturalski (Peaks/Mormon Lake RD)
Heritage	Peter Pilles
Engineering	John O’Brien
GIS	Carl Beyerhelm
Hydrology/ Watershed	Rory Steinke
Wildlife	Cecelia Overby
Botany	Barbara Phillips Debbie Crisp

There is also an extended team composed of timber and range specialists at the forest level, and district specialists in wildlife, heritage and soils/hydrology.

Geographic Information Systems and the Roads Database

The routes on the CNF came into existence for different reasons. Some were built to provide a route between two places. Some were built for timber sales, to allow for mining, or to provide access to trailheads for hiking. Others were built as part of a campground or a picnic area. Some were created by people driving wherever they wanted. Over time, more and more people drove on the same places and the two-track roads gradually became routes.

Two tools are available to manage these routes. The roads database stores engineering information about the roads, and geographic information systems (GIS) spatially represent them on maps.

Both of these tools are dynamic. The roads database includes detailed information about the roads, including the road number, road length, beginning and ending locations, ownership, ranger district, road surface, etc., which is edited as often as necessary to reflect actual ground conditions. The database also includes features along the road, (such as culvert pipes, signs, cattle guards, and gates) and maintenance information. GIS uses spatial information to create maps of the forest road system. These are not like typical maps in a road atlas; GIS maps are dynamic and can produce maps that show roads, streams, wildlife areas, land ownership, and a host of other information. GIS was used to produce all the maps in the appendix for this report. The database lists all the roads on the CNF and includes information about the roads.

The Forest Service has not always kept detailed records of roads and trails. In 1992, the FS began to inventory all existing roads and assign each a road number. On the CNF, existing topographic maps, aerial photographs and timber sale maps were used to locate roads to begin this inventory process. This was intended to be followed up with verification on the ground to eliminate those lines that were in fact other features that appeared to be roads on aerial photographs. That follow-up process was never fully completed, however, and in some places across the Forest, features that are not roads may still be identified in the inventory as roads with formal road numbers. Some of these may be fence lines and other non-road features; others are unauthorized or user-created routes that were never intended to be a National Forest System Road or Trail.

Step 2: Describing the Situation

The Forest Landscape

The elevation ranges from 3,500 feet along the Verde River on the southern end of the forest to over 12,000 feet above sea level in the San Francisco Peaks. Vegetation ranges from open desert grassland through pinyon-juniper at the lower elevations through Ponderosa pine up to mixed conifer and tundra at the highest elevations. Recreation resources at the lowest elevations are used most of the year, while motorized uses at the highest elevations are restricted in winter to plowed roads, except for a minor level of snowmobile use. Recreation activities include skiing, hiking, biking, horseback riding, hunting, fishing, camping, birding, scenic driving, four-wheel driving, and motorcycle and ATV riding. Some also consider pinyon seed, firewood and landscape rock gathering as recreational activities.

The Current Road System

The land and resource management plan for the CNF is also referred to as the Forest Plan (FP). The FP is a plan of operations for a period of approximately 10 to 15 years, which establishes management areas in the Forest. Management areas (MAs) have common characteristics, like water resources, soils, timber, or cultural divisions. The plan sets out standards and guides for each management area and has information about many aspects of operations, such as wilderness areas, mineral development, motorized travel and dispersed and developed recreation sites.

Current forest plan direction relating to motorized travel can be summarized as follows. The acres reflect National Forest System land within the proclaimed forest boundary and exclude private land inclusions.

- Non-motorized—173,000 acres
- Travel on existing roads only— 199,000 acres
- Seasonally closed to motorized travel—63,000 acres
- Cross-country travel allowed— 1,370,000 acres

Approximately 74 percent of the Forest is under management direction that allows cross-country travel with no restrictions.

The roads database tracks, for example, the type of surface the road has, who maintains the road, and which Ranger District the road is on. Four road attributes are particularly important to the Travel Management Rule. These attributes are:

- Route status
- Jurisdiction
- System
- Maintenance level

These indicate which roads are currently managed for motor vehicle use. Route Status indicates whether the road exists or has been decommissioned. Over 85 percent of the National Forest System Roads (NFSRs) in the database are existing roads. A decommissioned road is a road that has been removed from service. It is no longer a road, but is tracked as legacy data.

States, counties, and other federal agencies may control roads that cross National Forest System lands, which is indicated in the Jurisdiction attribute of the database. Over 89 percent of the roads on the Forest are under Forest Service jurisdiction. Arizona Highway 89A is an example of a road that crosses NFS lands but is under other jurisdiction. Arizona has jurisdiction over the road and has an easement to operate and maintain the road on forest land.

All roads are part of a system of roads. Interstate 17 is part of the Interstate Highway system and Arizona Highway 87 is part of the State Highway system. A road that is part of a county or city road system may go through part of the forest. In our database, roads that are part of the system of roads on the CNF are listed as NFSRs.

Roads that have the following values in the database are considered open to the public :

- Route status - *existing*
- Jurisdiction - *Forest Service*
- System - *National Forest System Road*
- Maintenance level - Suitable for *high-clearance vehicles* only or all *passenger cars*

Many roads or sections of roads do not meet all of these criteria. Some roads are decommissioned and are kept in the database as legacy information. Some roads may be under the jurisdiction of other federal agencies or in private ownership.

Existing Direction

Table 2 lists the number of miles of roads on the CNF that meet all the above criteria. These figures come from the database described above. Any road or section of a road that does not meet all the criteria is not included. Existing direction means the system of NFSRs open for public use. See Appendix B and C for maps of existing direction.

The roads database is used to keep track of the roads on the Forest. For this report, geographic information systems (GIS) data was used for the analysis. GIS is an efficient way to analyze the data and in the environmental analysis because GIS data on roads can be combined with wildlife, soils, water resources, and a host of other data to answer questions about specific roads. Miles in the engineering database are not exactly the same as miles for the same road segments in GIS, though across the forest as a whole, the differences are slight.

In this type of analysis, spatial data interpretation is simple and easy to understand. GIS staff can create maps and perform analyses with minimum effort. Using tabular data from the engineering roads database would make the analysis more difficult and complicated. A road location, for example, is only generally described in the database and it is not shown in relation to other features. The GIS data show individual roads and how they relate to other features. The GIS data are also linked to the engineering roads database; roads information is instantly accessible if a specialist needs it for the analysis.

Table 2. : National Forest System Roads open to the public on the CNF.

Road Type	Miles
Suitable for high-clearance vehicles	4,790
Suitable for passenger cars	800
TOTAL	5,590

Existing Condition

While 5,590 miles of roads are shown as open for public motorized use, there are other “roads” that are used on the Forest. Also, some of the roads in the database may already be closed or are not passable. Even though inventory data is not 100 percent accurate, it is important to track the roads data as well as possible. The existing condition is the best estimate of where people are driving now.

Table 3 shows the miles of roads by road type.

Table 3: Existing Condition

Road Type	Estimated Miles
Closed or decommissioned	60
High-clearance vehicle (open)	4,300
Passenger car	800
User- created	960
TOTAL	6,120

The user-created roads included above were those routes provided by the public, or discovered by FS employees that were not on open or closed system roads. There are also additional user-created routes on the Forest that we don’t know about or haven’t inventoried. Based on this information, Table 3 is the best estimate at this time of the number of miles of road in each category for the existing condition. Finally, there are 540 miles of closed roads that are not in use and are not shown in Table 3.

Road Maintenance Levels

Maintenance Level (ML) 1 roads are closed to motorized travel because they are not currently needed, but may be needed later on. For example, after a timber sale, roads used to haul logs may be downgraded to ML1. Occasionally, these roads are reviewed to decide if decommissioning is needed.

Maintenance Level 2 roads are suitable for high clearance vehicles. Most of these roads are open to the public; anyone can drive on them, but they are not suitable for passenger cars. There are some ML 2 administrative use roads that are not open to the public but available for Forest Service use or for use by people who hold Forest Service special use permits or road-use permits. ML2 roads are used for many activities including personal firewood gathering, camping, hunting, and by people out for a drive. Many are rutted and eroded and are difficult to drive, even in a

high-clearance vehicle. Some roads that were built for passenger cars have deteriorated due to lack of maintenance and are in fact suitable only for high-clearance vehicles.

Maintenance Level 3, 4, and 5 roads are those suitable for passenger cars. Some of these roads are dirt, some are gravel, and a few are paved. For dirt and gravel roads, the main distinguishing characteristic is the maintenance effort that we put into the roads. It is impossible to generalize about how often we maintain these roads; some roads require more maintenance than others. For example, a dirt road that is suitable for passenger cars and has a lot of traffic may require more maintenance than a gravel road with less traffic.

The CNF has no ML 5 roads under Forest Service jurisdiction. Most ML 4 roads on the CNF are paved, and most of the ML 3 roads are gravel, although some are native-surfaced. By state law, ML 2 or High Clearance roads are available for use by non-highway legal vehicles. ML 3, 4 and 5 roads or passenger car roads, are only available for use by highway legal vehicles.

Motorized Trails

There are about 30 miles of trails that are designed and managed for motorized use. There has also been some motorized use occurring in areas of the Forest that are managed for non-motorized opportunities, including in wilderness areas. The travel planning process will clarify and designate exactly where motorcycles and all-terrain vehicles can travel. There are also a number of user-created routes that we don't have accurate inventory data about. Users provided location data for over 100 miles of trails that are not on system trail or road locations. There are, undoubtedly, other user-created trails which are not in our inventory. Some of these may be considered in future travel planning processes.

We keep track of system trails in a computer database, similar to our roads database. The database includes detailed information about each trail such as number, length, designed use, class, and beginning location and terminuses. This also includes any features a trail may have such as waterbars, culverts, retaining walls or signs.

Areas for Cross-Country Motorized Recreation

There is currently one area for off-road motorized travel on the CNF, the Cinder Hills OHV Area. It consists of 13,711 acres that lie northeast of Flagstaff.

Step 3: Identifying the Issues

Issues Raised Internally

The IDT identified the following areas as areas of concern:

- wildlife
- soils
- archeology
- water resources
- recreation
- forestry
- fire suppression/fuels treatment

In addition, access needs to be considered for recreation activities, permit holders, private property owners, and FS administrative needs.

Issues Raised by the Public

One component of issue identification has been informing the public about the designation process, describing the current road system and learning how the public uses the road system. During the public involvement phase of this process we held 8 public meetings, with a total of approximately 1,000 people that attended the initial meetings.

Kick-off Meetings

We conducted informational public meetings at the beginning of the process to explain to the public what the Travel Management Rule was all about. We explained why the Travel Management Rule came about, the potential threat of unrestrained motor vehicle use on the Forest, and our need to protect resources. We explained the minimum road system. We also explained that motor vehicle use is essential to forest operations, and that recreational off-highway vehicle use is a legitimate and rapidly-growing use of forest land.

We explained the travel management process. We told the public what we needed to do to arrive at a minimum road system, a designated route system, and a motor vehicle use map. We asked for information about how the Forest is used. We asked for information related to user-created routes so that we would have complete information on how people use the Forest. These meetings were held in Winslow, Phoenix, Flagstaff, Happy Jack, and Camp Verde.

During the kickoff meetings, we tried to identify use patterns on the Forest. We looked for information about camping, travel, hiking, recreational use, or anything else that might be related to motor vehicle use on the Forest. We asked what people liked to do on the Forest and how these different uses might conflict with each other. We asked again for information about user-created routes, roads and trails on the Forest that are not on our maps, but are used by the public.

Phase II Meetings

After receiving and collating comments from the kickoff meetings, another round of public meetings was held. During these meetings, we showed the maps that included public comments from previous meetings. More comments and map corrections were received from the public.

During the Phase II meetings, we introduced the screening criteria that we would use during our science-based analysis that we describe later in this report. We described these criteria as filters that we used to determine what uses would be appropriate in different areas of the Forest. If, for example, the public wanted to use a road or trail through an area with archeological resources, we would filter this use request to arrive at a recommended condition. These meetings were held in Flagstaff, Happy Jack and Camp Verde.

Results of Public Collaboration

We received about 220 public comments during the travel analysis process. We received comments from the following groups:

- Coconino Trail Riders
- Center for Biodiversity
- Sierra Club
- Grand Canyon Wildlands Council
- Grand Canyon Trust
- Arizona Wilderness Coalition
- Forest Guardians
- Great Old Broads for Wilderness
- The Wilderness Society
- Blue Ribbon Coalition
- Diablo Trust
- Backcountry Horsemen of Arizona
- Cornville Community Association
- Verde Valley 4-Wheelers

We did not respond to these comments and suggestions in this report. We answered comments and suggestions at the public meetings and workshops. In some cases we met with individuals and groups for field trips where we had discussions and answered questions.

The list below is a summary of public comments/concerns.

- Better road maintenance
- More funding for implementation
- More restrictions for OHVs
- Safety of users
- Access to forest products
- Big game retrieval from ATVs
- Handicapped access
- More single-track trails for motorcycles
- Smaller route system
- Access to the Forest
- Dispersed camping access
- Recreation without OHVs
- Birding
- Motorized impacts on wildlife
- No ATVs used for hunting
- No ATVs in wilderness areas
- No increased motorized activity
- More trails for motorcycles
- No more trails for motorcycles
- No motorized recreation near residences
- Less noise
- Less road closures
- More road closures
- No resource damage
- Access to National Parks
- Rock Crawling
- Scenic vistas

The number and type of comments and suggestions reflects the passion the public has for the CNF's resources and recreation opportunities. Some of the comments and suggestions are inconsistent or ask for completely opposite things. Some people, for example, suggested that we need to provide a network of single-track loops. Someone else suggested that we already have too many loops for motorcycles.

All transportation planning has to deal with conflicting issues. Some people want more OHV access to the Forest on or off of system roads and others want fewer roads and no OHV access on the Forest. Even the regulations that require us to designate roads, trails, and areas require that we consider competing interests. In our analysis and proposal we have to consider all competing interests. The next section describes the science-based analysis that we used to analyze the existing road and trail systems

Step 4: Assessing Benefits and Risks of the Existing Road System

This step in the travel analysis process is to complete a science-based analysis of the existing routes and make recommendations for changes to the existing system. We have to consider, for example, wildlife, soils, archeology, water resources, recreation, forestry, and fire suppression. In addition, we need to consider access for recreation activities, permit holders, private property owners, and our own administrative needs. This analysis was a science-based, rational, iterative process.

The Motor Vehicle Route and Area Designation Guide produced by the National OHV Implementation Team lists the screening criteria that we need to consider during the route designation process.

Generally, the following must be considered:

- National Forest System natural and cultural resources
- Public safety
- Provision of recreation opportunities
- Access needs
- Conflicts among uses of National Forest System lands
- Need for maintenance and administration of roads, motorized trails, and areas that would arise if the used under consideration are designated and; as well as the availability of resources for that maintenance and administration that would arise if the roads and motorized trails under consideration are designated.

For trails and areas, we consider the following specific criteria:

- Damage to soil, watershed, vegetation and other forest resources
- Harassment of wildlife and significant disruption of wildlife habitats
- Conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring Federal lands
- Conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring Federal lands
- Compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors

Considerations for roads include speed, volume, composition, and distribution of traffic on roads, and compatibility of vehicle class with road geometry and road surfacing. Finally, for rights of access to private property, valid existing rights and the rights of use of National Forest System roads and trails must be considered under 36 CFR §212.6(b).

We have engaged and consulted with resource specialists such as foresters, wildlife biologists, soil scientists, archeologists, social scientists, and others throughout this process. All are familiar with scientific technique and regularly use established science methods in their work. They gather and analyze data using standard methods and then make their recommendations. They monitor programs and review consequences. While many of the CNF staff are scientists, other employees, such as recreation specialists, regularly work out in the Forest, and they are familiar with local conditions. They also provided input to this process based on their knowledge of the ground.

In this part of the report, we describe the process that we used to involve our staff experts in the travel management process. There were 4 formal Roads Analysis Processes (RAPs) completed on the Coconino prior to the initiation of the TMR process. These were the Coconino Forestwide RAP for Passenger Car Roads (MLs 3, 4 and 5), the East Clear Creek RAP, the Anderson Mesa RAP and the Mountaineer RAP. The East Clear Creek and Anderson Mesa RAPs were associated with large-scale land management planning efforts and the last was associated with a small scale vegetation management project. In addition, there were several planning efforts that used the process to make initial evaluations of the opportunities and priorities for road management on the Coconino. These were referred to as RAPS, but were not considered formal RAPs

RAP process

RAP efforts used a standard process. A list of benefits and risks associated with roads in the area to be analyzed was determined by the members of the interdisciplinary team. Generally, the risk and benefits were represented using forest GIS data. For instance, the road layer was intersected with polygons representing Mexican Spotted Owl Protected Activity Centers (MSO PACs). Those roads that intersected a PAC were assigned a risk to Wildlife, or a risk to Spotted Owls, specifically. Another example of the risk/benefit assessment is when a road provides beneficial access to a developed recreation site, or a private in-holding or other feature or use, it was coded as providing a benefit.

In the formal RAPs, these risks and benefits were compiled, and a recommendation to keep a road open or closed was made. This information was converted to a map of open and closed roads,

and then reviewed for consistency and compared to local on the ground knowledge that was not in the GIS. For example, when two roads go to the same location, local knowledge was used to determine which one to keep open based on the condition of both the roads.

For the Forestwide TAP, staff compiled the results of all the RAPs, and created a table of recommendations for each road, as well as a list of the risks and benefits (the risks and benefits were combined from the individual RAPs). See Appendix A.

Resource Risks and Access Benefits

The following sections describe in more detail how we assessed the benefits, problems and risks of the existing road system. These considerations shaped the preliminary recommendations about identifying the minimum road system needed for safe and efficient travel, and for administration, utilization and protection of National Forest System lands; and identification of unneeded roads that are no longer needed to meet forest resource management objectives and that, therefore, should be closed to public travel, decommissioned or considered for other uses, such as for trails.

Wildlife

- Mule Deer Habitat
- Terrestrial Threatened, Endangered, and Sensitive Species
 - Mexican spotted owl and northern goshawk

Aquatic Habitat and Species

- Native Fish Habitat

Water Resources

- Wetland Road Location
- Stream Crossing Density
- Riparian Zone – Stream Proximity

Soils

- Severe Erosion Hazard
- Meadow/Grassland Road Location

Heritage Resources

- Cultural Resources
- Sinagua Circle Access

Recreation

- Access to Public Developed Recreation Access
- Semi-Primitive non-motorized (ROS) criteria
- Designated Roadless Areas and Wilderness areas
- Trail Access
- Road/Trail Conflict
- Administrative Site Access

Other Access

- Fire Suppression
- Fuels Treatment
- Vegetation Treatment
- Private Access
- Minerals/Pits
- Grazing allotments

Funding

Maintenance Needs/Economics

All the roads that people use on the CNF need maintenance, and funding is inadequate for maintenance of existing forest system roads. This section briefly describes funding for road maintenance on the Forest, how the CNF uses road maintenance money, and options for optimizing available funding on the most important maintenance tasks.

Table 5 shows the annual miles of road maintenance by road type from 2005 through 2008. The information is from roads accomplishment reports.

Table 5.: Miles Maintained Annually on the CNF.

Year	Passenger Car Roads	High-clearance Roads	Closed Roads	TOTAL
2008	392	297	0	689
2007	600	125	0	725
2006	298	120	0	418
2005	250	47	0	297

In 2008, the CNF maintained 392 miles of passenger car roads. Because of legal requirements in the Highway Safety Act, we must maintain the passenger car roads to a higher standard than for high clearance roads. The maintenance on the roads is mostly using a grader to blade the roads. The operator smooths the road surface, pulls gravel from the ditches, and fills the potholes and compacts the material. Sections of roads are occasionally repaired by applying additional quantities of gravel. While this maintenance is important—it would be difficult to drive a

passenger car down the road without it—it is still inadequate. Gravel needs to be regularly replaced on all gravel-surfaced roads.

There is a need to regularly replace the gravel on all gravel-surfaced roads maintained for passenger cars in order to maintain the road to acceptable standards. Gravel is not a permanent surface on a road. Constant vehicle traffic and regular maintenance erode the surface. The fine material can blow away and the larger material gets pushed off the road and eventually lost. Each maintenance cycle recovers less and less of the gravel, and eventually the road becomes a native dirt road again. Without regular gravel replacement, the passenger car road will eventually become one that is suitable only for high clearance vehicles.

A gravel surface usually lasts 10 to 15 years. If we assume a generous 15-year life, we would need to replace gravel on approximately 6.5 percent of the gravel roads (roads maintained for passenger cars) each year, approximately 45 miles. Based on current costs, a 20-foot average road width, and a six-inch layer of gravel, regular gravel replacement would cost \$3 million per year. We are currently able to allocate approximately \$150,000 per year for gravel replacement. The present gravel replacement rate is less than 5 percent of what it should be to maintain the road surface.

Most roads on the CNF are suitable only for high-clearance vehicles. Comparison of Tables 3 and 5 shows that only a small percentage of these roads are ever maintained to standard. While gravel is generally not placed on these roads, high-clearance vehicle roads still require some maintenance. The most important maintenance item on high-clearance vehicle roads is drainage. Rutted roads are certainly difficult to drive on, but rutted roads also cause road and natural resource damage. Rains and spring snowmelt cause water to run down the roads, erosion increases, the road is damaged, and the erosion also damages the surrounding forest. Any road that is not maintained deteriorates at a faster rate. Asphalt roads become cracked and riddled with potholes. The surface erodes from gravel roads. Dirt roads become rutted and impassable.

As Table 6 shows, we estimate that the Coconino National Forest needs over \$6.8 million per year for adequate maintenance for all of our roads, using recommended maintenance frequencies and costs.

Table 6. Annual Maintenance Needs.

Road Type	Annual Maintenance Needs
Closed Roads	\$59,424
High-clearance Vehicle Roads	\$1,842,610
Passenger Car Roads	\$4,938,318
TOTAL	\$6,840,352

It is unlikely that the CNF will ever have that much money, so we must prioritize the maintenance we do. We currently prioritize maintaining passenger car roads. The difficulty with our limited budget, however, is that our inadequate gravel replacement means that the passenger car roads will eventually deteriorate to high-clearance vehicle roads.

Converting passenger car roads to high-clearance vehicle roads—or allowing them to convert themselves—is certainly one approach to solving the maintenance dilemma. Another partial solution would be to reduce the miles of the designated road system.

This TAP recommends a minimum road system; the rest of the roads currently on the system will be identified as unneeded. Downgrading all passenger car roads to high-clearance vehicle status and closing all system roads except those that can be maintained is not a viable solution.

However, the open road system must be maintained to at least minimally meet Highway Safety Act requirements for passenger car roads and to a standard that acceptably protects resources.

Working toward an acceptable solution to this dilemma will be resolved in the Travel Management designation analysis that will follow this process.

Step 5: Describing the Opportunities and Setting Priorities

Unneeded Roads

The minimum road 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.

Federal regulations require that we identify roads that we no longer need to meet forest resource management objectives, and that should be decommissioned or considered for other uses, such as trails. For example, the CNF engineering roads database lists almost 4,000 roads that are less than a quarter of a mile long. Only 95 of these roads are passenger car roads. There are over 600 roads that are less than 500 feet long. Approximately 60 of these roads are passenger car roads. These tend to be in campgrounds, picnic areas, or at trailheads, and are needed to operate forest facilities. Most of the other short roads are closed roads or high-clearance vehicle roads. Many are probably dead-end roads or unnecessary connector roads. Some roads may cause resource damage and have little recreation or other value. Some roads may be in areas where the road density is greater than necessary. Other roads may have little or no use and continuing to maintain them makes no sense.

We have evaluated roads and recommended a minimum road system (Appendix A). Roads not identified in the proposed minimum road system are not needed. As our travel analysis process moves forward, we will set priorities considered unnecessary for forest management or visitor

access needs and may be considered for decommissioning roads that remain in the unneeded category.

The last step in developing a minimum road system and identifying unneeded roads was to integrate the considerations we made in the individual resource by resource analysis described in the previous Step 4, Assessing the Benefits, Problems and Risks of the Existing Road System. District and Forest staff reviewed the entire engineering roads database and GIS layer and made recommendations on each road. The following questions represent the logic for these recommendations and proceed generally as follows:

- is the route necessary to provide private land access;
- does the route create unacceptable resource impacts;
- if resource impacts are acceptable, does the route provide access needed by the public or the Agency or its permittees; and
- is the route redundant?

Additional more specific questions considered include:

- Is the route duplicated within one-half mile?
- Does the route impact wetlands or riparian areas?
- Does the route impact wildlife habitat?
- Could the route encourage encroachment into wilderness?
- Does the route cause soil erosion?
- Does the route contribute to cumulative impacts, such as many stream crossings or high route density?
- Is the route in an inventoried roadless area or forest plan management area that prohibits motorized use?
- Is this a primary access route for recreation?
- Does the route have a unique destination, such as an overlook or campsite?
- Does the route provide a unique recreation opportunity?

Recommendations

The recommendations resulting from this final step of integrating all the considerations can be found IN Appendix D, C,E, and F. Reasons were documented in Appendix A. The CNF presently has a high number of redundant routes in some areas of the forest that were identified as “unneeded”. Table 9 is a summary of our recommendations for different road types on the forest. See Step 6 that follows for a list of recommendations.

Table 9. Route Summary*.

Recommendation	Miles
Open High Clearance Roads	2990
Motorized Trails	30
Minimum Road System	4197
Closed/Administrative Use Roads	2050
Unneeded Roads/Routes	2320

*This table shows 925 miles more than the 5590 miles shown in Table 2 as existing direction. Existing direction is defined as roads open to the public. The 925 additional miles are roads that were not open to the public, including some that have been decommissioned; and roads under other jurisdiction.

Chapter 6 — Step 6: Reporting

List of key issues identified:

- provision of recreational opportunities,
- access needs for adjacent property owners,
- conflicts among uses of National Forest System lands,
- protection of natural and cultural resources, and
- need for maintenance of roads and
- need for administrative access

List of risks and benefits:

Risks to:

- wildlife,
- soils,
- archeology,
- water resources,
- recreation,
- forestry, and
- fire fighting/fuels treatment

Access for, or benefits to:

- recreation activities,
- permit holders,
- private property owners, and
- FS administrative needs.

Prioritized list of opportunities for addressing those risk and benefits:

1. Prohibit cross-country travel (prevents route proliferation and resource damage).
2. Designate a more affordable route system that still provides access while protecting resources.
3. With input from the public, plan a sustainable motorized trail system, utilizing existing open and closed high clearance roads (provides managed recreational opportunities).
4. Decommission as budgeted, unneeded roads and routes creating the most damage.

Recommendations:

- Remove approximately 1300 miles of high clearance roads from public travel.
- Convert approximately 180 miles of passenger car roads to high clearance roads.
- Maintain 2050 miles of road in closed status or for limited administrative use.
- Eventually decommission 2318 miles of un-needed roads and user-created routes.
- Maintain 30 miles of existing and planned motorized trails.
- Work with the public to identify opportunities for additional motorized trails, especially looking at closed and low use high clearance roads.

The recommended open system of roads would be approximately 3600 miles of roads, and 78 percent of the non-wilderness forest lands would be within a half mile of an open road.

Appendices

Appendix	Document Name	Description	Size
	Existing System		
A	Risk_Benefit_Table.xls	List of the roads and criteria considered	3.21 MB
B	Existing Condition North_11x17.pdf	Existing direction on the North side of the Forest	228 KB
C	Existing Condition South_11x17.pdf	Existing direction on the South side of the Forest	257 KB
	Recommended System		
D	Recommendation_Table.xls	List of the roads and recommendations	2.62 MB
E	MinimumRoads_South_11x17.pdf	Recommended minimum road system for the South side of the Forest	913 KB
F	MinimumRoads_North_11x17.pdf	Recommended minimum road system for the North side of the Forest	768 KB
G	Road Distance.pdf	Distance to an open road, recommended system	256 KB