



United States
Department of
Agriculture

Forest
Service

Southwestern
Region

September 2008



Travel Analysis Process Report

Carson National Forest

Prepared by:



Jack Carpenter,

Travel Team Leader

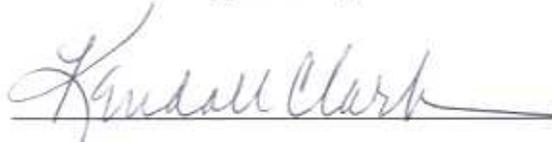
Accepted by:



Steve Okamoto,

Forest Engineer

Approved by:



Kendall Clark,

Forest Supervisor

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because of all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means of communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 79503272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Printed on recycled paper – September 10, 2008

Contents

Introduction	1
Background	1
Purpose and Objectives of the Analysis	1
Definitions	2
Road Maintenance Levels	4
Trails	5
Process	5
Step 1: Setting Up the Analysis	7
Step 2: Describing the Situation	8
Current Road System	8
Existing Direction (Formal Transportation System)	9
Scale of the Analysis	9
General Location Maps	10
General Location maps showing the existing road system by district.	11
Identification of Information Sources	17
Analysis Plan – The Approach	17
Science Based Roads Process	18
Step 3. Identifying the Issues	20
Initial Meetings	20
Written comments	20
Travel Route-Related Concerns Criteria	22
Recent funding	22
Step 4. Assessing Benefits and Concerns	31
Product	31
Benefits	31
Concerns	31
Unauthorized Routes	31
Motorized Access for Camping	32
Specialist Reports	32
Aquatic Habitat and Species	32

Evaluation.....	32
Fire Suppression and Fuels Treatment	33
Heritage Resources.....	33
Lands and Realty.....	35
Minerals.....	36
Range.....	36
Recreation.....	37
Forest Recreation Use Statistics	38
Soils	40
Water Resources	41
Step 5. Describing Opportunities and Setting Priorities	42
Introduction	42
Methodology.....	42
Accesses to Recreation Sites/Viewing Opportunities/Hunting Access.....	42
Known Public Desire for Motorized Access	43
Step 6. Reporting	44
National Forest System Roads (NFSR).....	44
Cross-Country Travel.....	44
Motorized Access for Camping.....	44
NEPA.....	44
Public Scoping.....	44
Appendices	45
Appendix A: References	47

Introduction

Background

In August 1999, the Washington Office of the United States Department of Agriculture (USDA) Forest Service published Miscellaneous Report FS-643 titled Roads Analysis: Informing Decisions about Managing the National Forest Transportation System (USDA-Forest Service 1999a). The objective of roads analysis is to provide decision makers with critical information to develop road systems that are safe and responsive to public needs and desires, are affordable and efficiently managed, and have minimal negative ecological effects. (Forest Service Manual 7712.1)

In January 2001, the Forest Service published the Transportation Final Rule and Administrative Policy authorizing units to use, as appropriate, the road analysis procedure embodied in FS-643 Roads Analysis, to assist land managers making major road management decisions.

In April of 2003 the Carson National Forest prepared a Roads Analysis Plan covering road Maintenance Levels 3, 4, and 5. This document identified road related issues on the district and roads considered to be high priority for maintenance. Some of the information in this document has been used for the travel analysis process.

In November 2005 the Forest Service published in the Federal Register 36 CFR parts 212, 251,261, and 295 Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule (Travel Management Rule). The Travel Management Rule requires designation of those roads, trails, and areas that are open to motor vehicle use by class of vehicle and time period, and prohibits the use of motor vehicles off the designated system as well as use of motor vehicles on routes and in areas not consistent with the designations. This rule changes the Forest Service regulates motor vehicle on the National Forest and Grasslands. On the Carson National Forest, motor vehicle travel will be restricted to designated roads, trail, and possibly some areas – cross-country motor vehicle travel will on longer be allowed unless designated. The use of Roads Analysis is consistent with the rule and forms the framework of Travel Analysis.

The travel management rule requires each unit to publish a motor vehicle use map (MVUM) displaying roads, trails, and areas open to motor vehicle use. To inform responsible officials on what should be included in the Carson MVUM a Travel Analysis Process (TAP) has been completed on the Carson National Forest. The TAP is summarized in this report. The TAP will be used to inform future project-level decisions related to motorized travel management. The TAP also meets requirements of agency policy and other existing federal regulations related to roads and motor vehicle management.

TAP is not a National Environmental Policy Act (NEPA) process, rather it is an integrated ecological, social, and economic approach to transportation planning, addressing both existing and future roads. TAP is a broad-scale analysis that encompasses the entire forest. TAP is a comprehensive undertaking to match the transportation system to the desired future condition, as determined thorough existing direction, public input, and agency resource specialist suggestion. The outcome from this TAP is a set of proposals.

Purpose and Objectives of the Analysis

This analysis focuses on the motorized transportation system on the Carson National Forest. The existing condition of the transportation system is measured by the consistencies and

inconsistencies with the forest plan, the Travel Management Rule, and by the socio-cultural, economic, and environmental consequences relative to the travel route network designated for motorized use.

The objective of this analysis is to identify an optimal motorized transportation system that provides access to multiple use opportunities (such as forest product gathering and recreation) while addressing the effects to the environment. The product of this analysis is not a decision. Because actions taken on National Forest System Roads (NFSR) may affect other agencies and entities, this analysis does consider those socio-cultural, economic, and ecosystem components that may overlap jurisdictional boundaries. However, in terms of presenting opportunities and priorities, only routes under Forest Service jurisdiction are included.

Definitions

Administrative unit. A National Forest, a National Grassland, a purchase unit, a land utilization project, Columbia River Gorge National Scenic Area, Land Between the Lakes, Lake Tahoe Basin Management Unit, Midewin National Tallgrass Prairie, or other comparable unit of the National Forest System. (36CFR212.1)

Area. A discrete, specifically delineated space that is smaller, and in most cases much smaller, than a Ranger District. (36CFR212.1)

Designated road, trail, or area. A National Forest System road, a National Forest System trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to § 212.51 on a motor vehicle use map. (36CFR212.1)

Forest road or trail. A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. (36CFR212.1)

Forest transportation atlas. A display of the system of roads, trails, and airfields of an administrative unit. (36CFR212.1)

Forest transportation facility. A forest road or trail or an airfield that is atlas, including bridges, culverts, parking lots, marine access facilities, safety devices, and other improvements appurtenant to the forest transportation system. (36CFR212.1)

Forest transportation system. The system of National Forest System roads, National Forest System trails, and airfields on National Forest System lands. (36CFR212.1)

Maintenance. The upkeep of the entire forest transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization (FSM 7700)

Motor vehicle. Any vehicle which is self-propelled, other than:

(1) A vehicle operated on rails; and

(2) Any wheelchair or mobility device, including one that is battery powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area. (36CFR212.1)

Motor vehicle use map. A map reflecting designated roads, trails, and areas on an administrative unit or a Ranger District of the National Forest System. (36CFR212.1)

National Forest System road. A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority. (36CFR212.1)

National Forest System trail. A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority. (36CFR212.1)

Off-highway vehicle. Any motor vehicle designed for or capable of cross country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain. (36CFR212.1)

Over-snow vehicle. A motor vehicle that is designed for use over snow and that runs on a track or tracks and/or a ski or skis, while in use over snow. (36CFR212.1)

Public road. Any road or street under the jurisdiction of and maintained by a public authority and open to public travel (23 U.S.C 101(a)).

Road. A motor vehicle route over 50 inches wide, unless identified and managed as a trail. (36CFR212.1)

Road construction or reconstruction. Supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a road. (36CFR212.1)

Road decommissioning. Activities that result in the stabilization and restoration of unneeded roads to a more natural state (36 CFR 212.1), (FSM 7703).

Road maintenance. The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective (FSM 7712.3)

Road maintenance levels. Road Maintenance levels define the level of service provided by, and maintenance require for, a specific road. Maintenance levels must be consistent with road management objectives and maintenance criteria (FSH 7709.58,10)

Road management objectives. A formal document that establishes the design criteria and operation and maintenance criteria for each road. The road management objectives require approve by the Responsible Official (usually the District Ranger) and are included in the forest transportation atlas. (FSM 7712.5)

Road subject to the Highway Safety Act. National Forest System roads that are open to use by the public for standard passenger cars. This includes roads with access restricted on a seasonal basis and roads closed during extreme weather conditions or emergencies, but which are otherwise open for general public use. (FSM7705).

Route. A road or trail

Temporary road or trail. A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or trail and that is not included in a forest transportation atlas. (36CFR212.1)

Trail. A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail. (36CFR212.1)

Travel management atlas. An atlas that consists of a forest transportation atlas and a motor vehicle use map or maps. (36CFR212.1)

Unauthorized road or trail. A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas. (36CFR212.1)

Road Maintenance Levels

There are five Maintenance Levels (ML) used by the Forest Service to determine the work needed to preserve the investment in the road. These ML's are described in FSH 7709.58 – Transportation System Maintenance Handbook (1992) and are defined as follows:

Table 1: Maintenance Level Definition

Maintenance Level	Definition
ML 1	Basic Custodial Care (closed to motor vehicle traffic)
ML 2	High Clearance Vehicles
ML 3	Suitable for Passenger Cars
ML 4	Suitable for Passenger Cars, Moderate Degree of User Comfort
ML 5	Suitable for Passenger Cars, High Degree of User Comfort

These ML's are described in FSH 7709.58 –Transportation System Maintenance Handbook (1992).

- **Maintenance Level 1.** Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resource to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate". Roads receiving level 1 maintenance may be of any type, class or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, but may be open and suitable for non-motorized uses. (FSH 7709.58, 12.3)
- **Maintenance Level 2.** Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting

of one or a combination of administrative, permitted, dispersed [scattered locations] recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to (1) discourage or prohibit passenger cars or (2) accept or discourage high clearance vehicles. (FSH 7709.58, 12.3)

- **Maintenance Level 3.** Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users. (FSH 7709.58, 12.3)
- **Maintenance Level 4.** Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times. (FSH 7709.58, 12.3)
- **Maintenance Level 5.** Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double-lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage." (FSH 7709.58, 12.3)

The Carson National Forest has no Level 5 roads. Most level 4 roads on the Carson National Forest are paved. The majority of Level 3 roads on the Carson National Forest have a gravel surface, although some Level 3 roads are native surface. Level 2 roads are native surface.

Trails

The Carson National Forest manages 91 miles of motorized trails. Some of these motorized trails came into existence to access mining claims, range allotments, hunting, recreation, and other historical uses. The forest has trails designed for single track motor vehicle use.

There has been some motorized use occurring in areas of the Forest that are to be managed for non motorized opportunities, including in wilderness areas. The travel planning process will clarify and designate routes where motorcycles and all-terrain vehicles can travel.

Process

The Travel analysis process is adopted from FS-643 which is a six-step process. The steps are designed to be sequential while understanding the process may require feedback and iteration over time as an analysis matures. The analysis process provides a set of issues and questions to help managers make choices about transportation system management. Decision-makers and analysts determine the relevance of each question. The following six steps guide the process:

- Step 1. Setting up the analysis,
- Step 2. Describing the situation,
- Step 3. Identifying the issues,

- Step 4. Assessing benefits, problems and concerns,
- Step 5. Describing opportunities and setting priorities, and,
- Step 6. Reporting.

The product is a report containing recommendations and supporting information for decision-makers and the public that documents the information and analysis used to identify opportunities and priorities for motorized use designations on the Carson National Forest.

Maps showing existing condition, forest plan direction, recommended routes for designation for motorized vehicle use, and appendices are included on a CD which is a part of this report.

TAP is an iterative process, not a one-time process. When conditions change, additional analysis may point to the need for revision in the recommendations.

The TAP is not a decision process. It provides the analytical framework from which to make recommendations that may be examined in the National Environmental Policy Act process that provides the basis, including formal public involvement, for making decisions. The TAP will identify a minimum road system needed.

Identification of a recommended minimum road system utilized best available science for the following criteria:

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

During our public meetings and written comments, the public provided information on these issues, particularly on recreational opportunities on the Forest. The public also gave us information about the other issues and asked questions that helped us focus our internal evaluations. With all this information, our staff specialists and experts evaluated the routes for these issues.

Step 1: Setting Up the Analysis

Table 2 lists the primary motorized travel management team members and their specialties. In addition each district has a travel management team made up of the members of the appropriate districts. The district team members are listed in the appendix.

Table 2: Primary Travel Management Team Members

Steve Okamoto	Forest Recreation, Lands, Engineering Staff
Allan Lemley	GIS Specialist
Melissa Schroeder	Forest Heritage Resources
Chirre Keckler	Forest Wildlife Biologist
Jack Carpenter	Team Leader

The Carson National Forest had an advisory committee, the Board of Directors, which reviewed and insured consistency across the district and the forest. Table 3 lists the members of the Board of Directors.

Table 3: Carson Board of Directors

Steve Okamoto	Forest Recreation, Lands, Engineering Staff
Kurt Nelson	Forest Planning Staff Officer
Dan Rael	Forest Resources Staff Officer
Mark Catron	Jicarilla District Ranger
Travis Moseley	Canjilon District Ranger
Genevieve Masters	Questa District Ranger
Kathy Delucas	Forest Public Affairs Officer
Kendall Clark	Forest Supervisor
Jack Carpenter	Travel Management Team Leader (attendee only)

The public was involved through series of open meetings and written comments. Table 4 gives the meeting dates, places and attendance.

Table 4: Public meetings, locations, dates and attendance

Location/District	Date	Attendance (approximate based on sign in sheets)
Canjilon	March 28, 2007	35
Taos-Camino Real	July 10, 2006	19
	August 10, 2006	35

Location/District	Date	Attendance (approximate based on sign in sheets)
	July 15, 2006-	29
Taos-Forestwide	March 29, 2007	48
Taos-Questa-Camino Real	March 22, 2007	21
Bloomfield-Jicarilla	March 19, 2007	14
Tres Piedras	July 10, 2006	23
El Rito	July 18, 2006	24
Questa	July 10, 2006	20

In addition, several hundred written comments were received.

Step 2: Describing the Situation

Current Road System

Every National Forest has a land and resource management plan that we call our forest plan. The forest plan establishes management areas in the Forest, areas that 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, from wilderness areas to mineral development, from motorized travel to campsites.

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 (wilderness and wilderness study areas)—199,956 acres
- Travel on existing roads or designated trails only—692,645 acres
- Cross-country travel OK—597,927 acres
- Travel on existing roads only (Valle Vidal) – 101,794 acres

Approximately 40% of the Forest is under management direction that allows cross-country travel with no restrictions. These areas are located on the Tres Piedras-El Rito-Canjilon Ranger Districts and the Camino Real Ranger District.

The Carson National Forest Land and Resource Management Plan (forest plan), as amended currently restricts motor cross-country travel along the Canjilon Ranger District western boundary in the Chama River Canyon wilderness, in the Trout Lakes-Canjilon Mountain-Canjilon Lakes-Canjilon Meadows area, and in the Ghost Ranch-Comanche Canyon area; the central

western portions of the El Rito district in the Trout Lakes-Canjilon Mountain-Canjilon Lakes-Canjilon Meadows-Fifteen Springs-Upper El Rito Creek area, and along the southern boundary in the Sierra Negra area; and the entire Jicarilla District; the majority of Camino Real Ranger District and the Tres Piedras Ranger District north of US highway 64 from Tres Piedras to the western district boundary north to the Colorado state line. These restrictions were implemented in December 1986. Wilderness and wilderness study areas were also closed at this time or before.

Most of the Questa district had been closed to cross country travel in 1986. The Questa Ranger District was closed to motorized off road vehicle travel except for designated motorized trails by forest closure order (#02-301) in 1997.

The existing system for the Carson National Forest must meet all the following conditions:

- Route system – existing road
- Jurisdiction – Forest Service
- System – National Forest System Road
- Maintenance Level –Suitable for high-clearance vehicles or passenger cars (level 2-5)

Many roads or sections of roads do not meet all these criteria. Some roads are decommissioned or closed. Some roads may be under control of other Federal agencies, state, local governments or private ownership.

Existing Direction (Formal Transportation System)

Table 5 lists the number of miles of road that meet all the above four criteria. This is our *existing direction*. Any road or section of a road that does not meet all the criteria is not included. So existing direction means the system of roads currently managed as the formal transportation system for the Carson National Forest.

Table 5: Existing Direction Roads

District	Existing roads in miles
Canjilon	394
El Rito	688
Camino Real	451
Jicarilla	171
Tres Piedras	708
Questa	215
Total	2, 641

Scale of the Analysis

This travel analysis is conducted at the Forest level. The analysis concentrates on Maintenance Level (ML) 2 and 5 roads and may include maintenance level 1 roads, motorized trails, areas and

unauthorized routes. Maintenance Level 3, 4, and 5 roads were addressed in the forest-wide Roads Analysis Report prepared in 2003. Existing information was used in conjunction with new or updated resource inventories and public input. This analysis only addresses wheeled motorized vehicle use (highway legal vehicles and non – highway legal vehicles). Over-the-snow motorized use is not considered in this analysis.

General Location Maps

The following maps give the general location of each district, district boundary, and the existing system roads within the district boundaries.

General Location maps showing the existing road system by district.

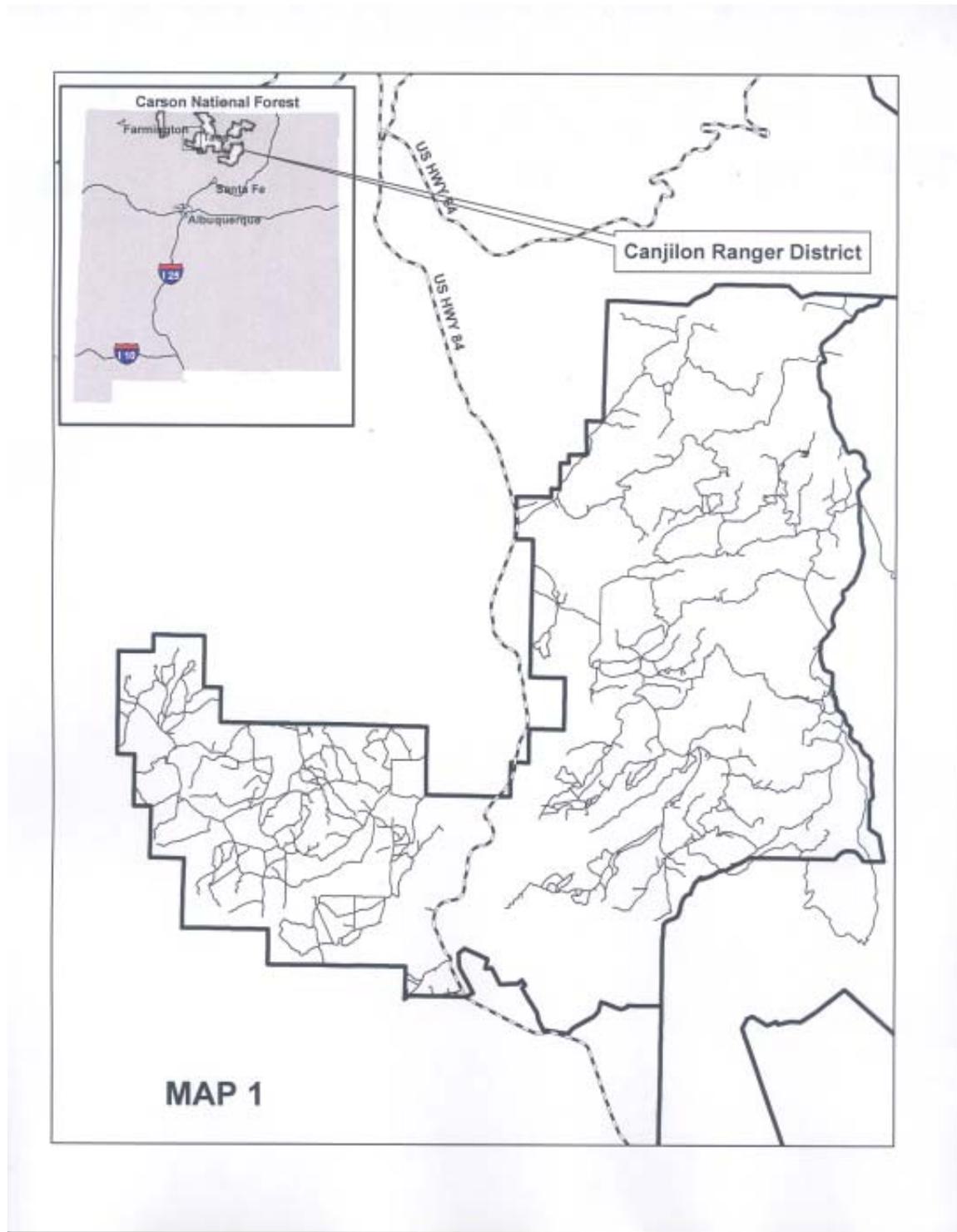


Figure 1 General Location Map Canjilon Ranger District, Carson National Forest

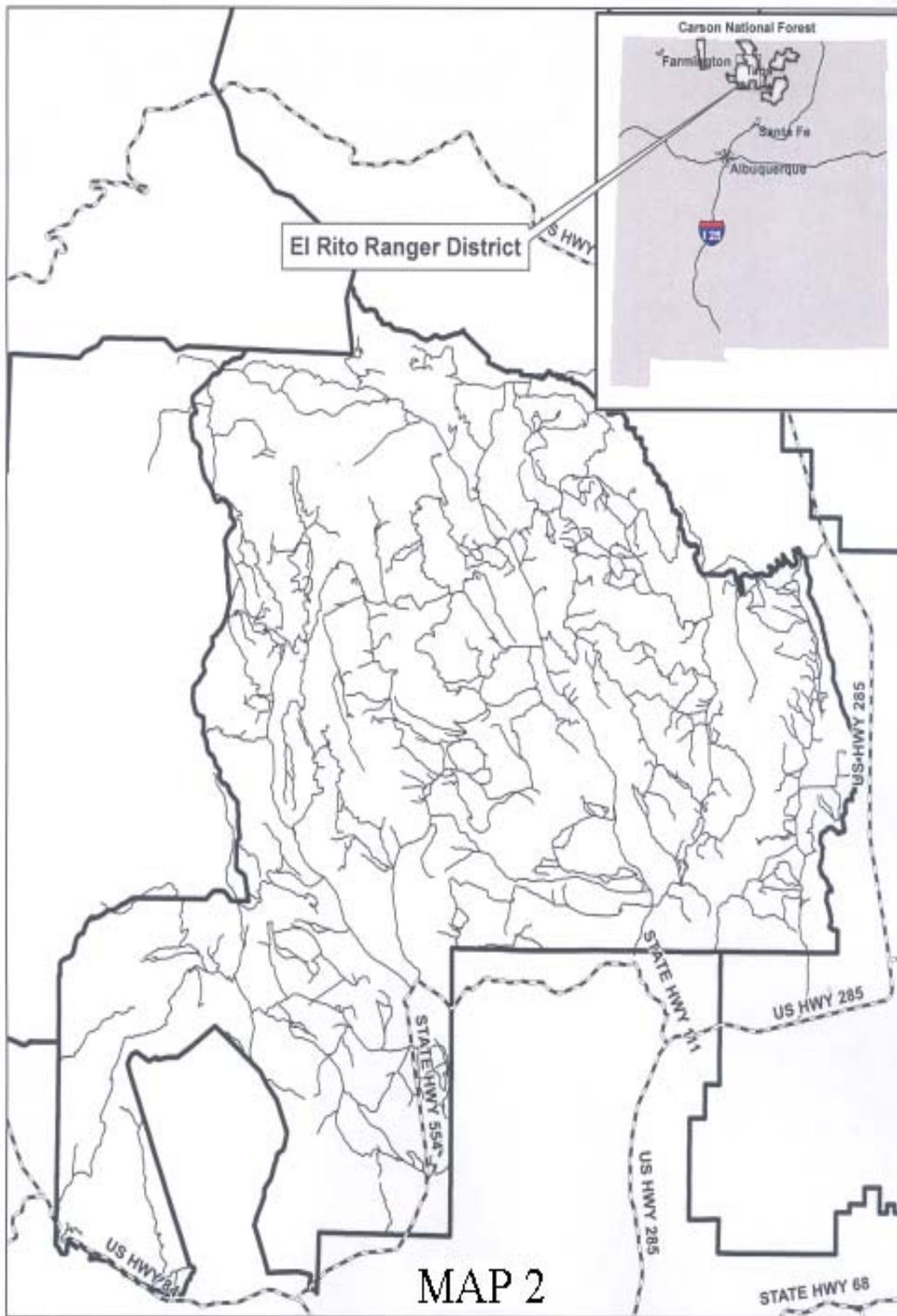


Figure 2 General Location map El Rito Ranger District, Carson National Forest.

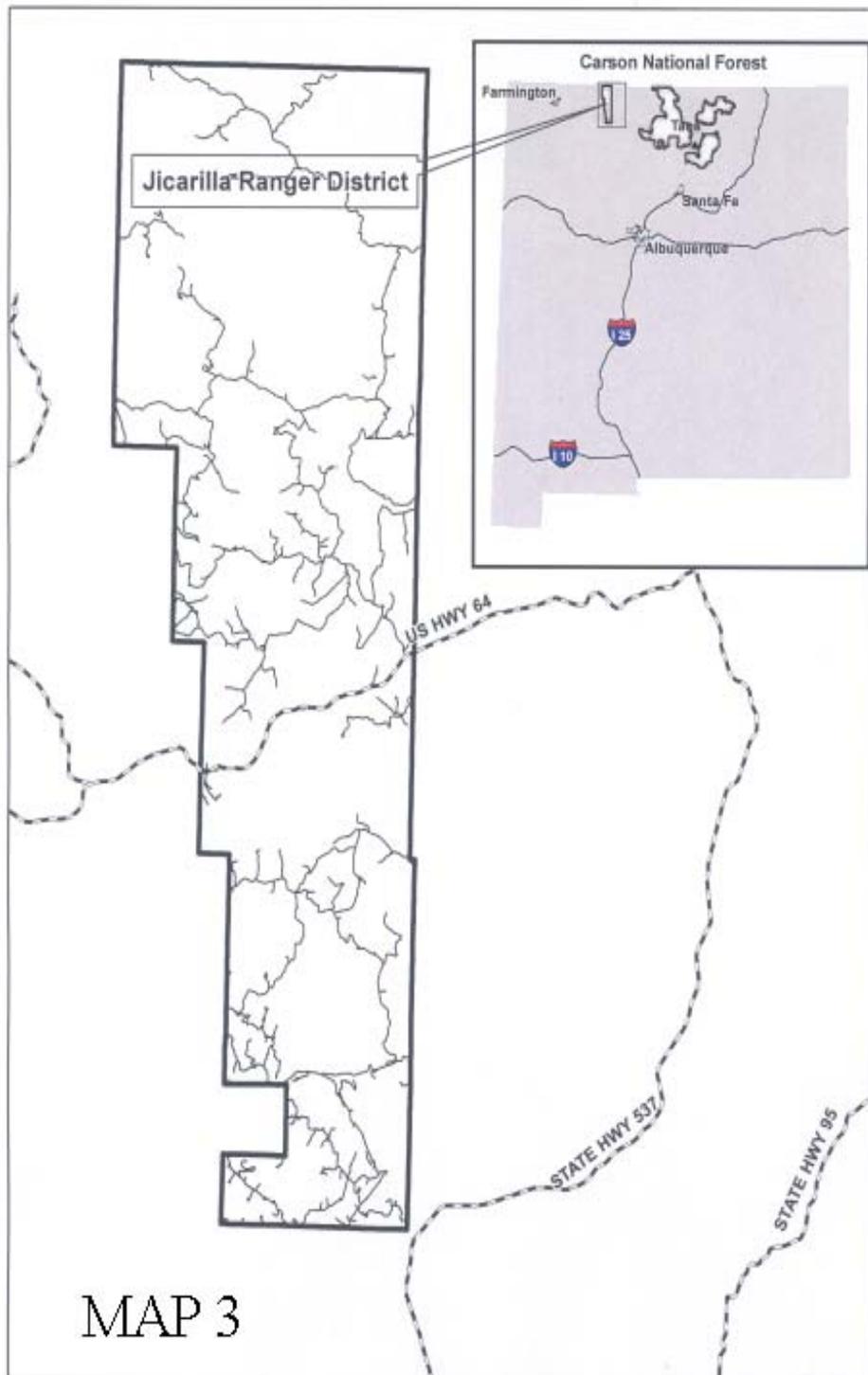


Figure 3 General Location map Jicarilla Ranger District, Carson National Forest.



Figure 4 General Location map Camino Real Ranger District, Carson National Forest

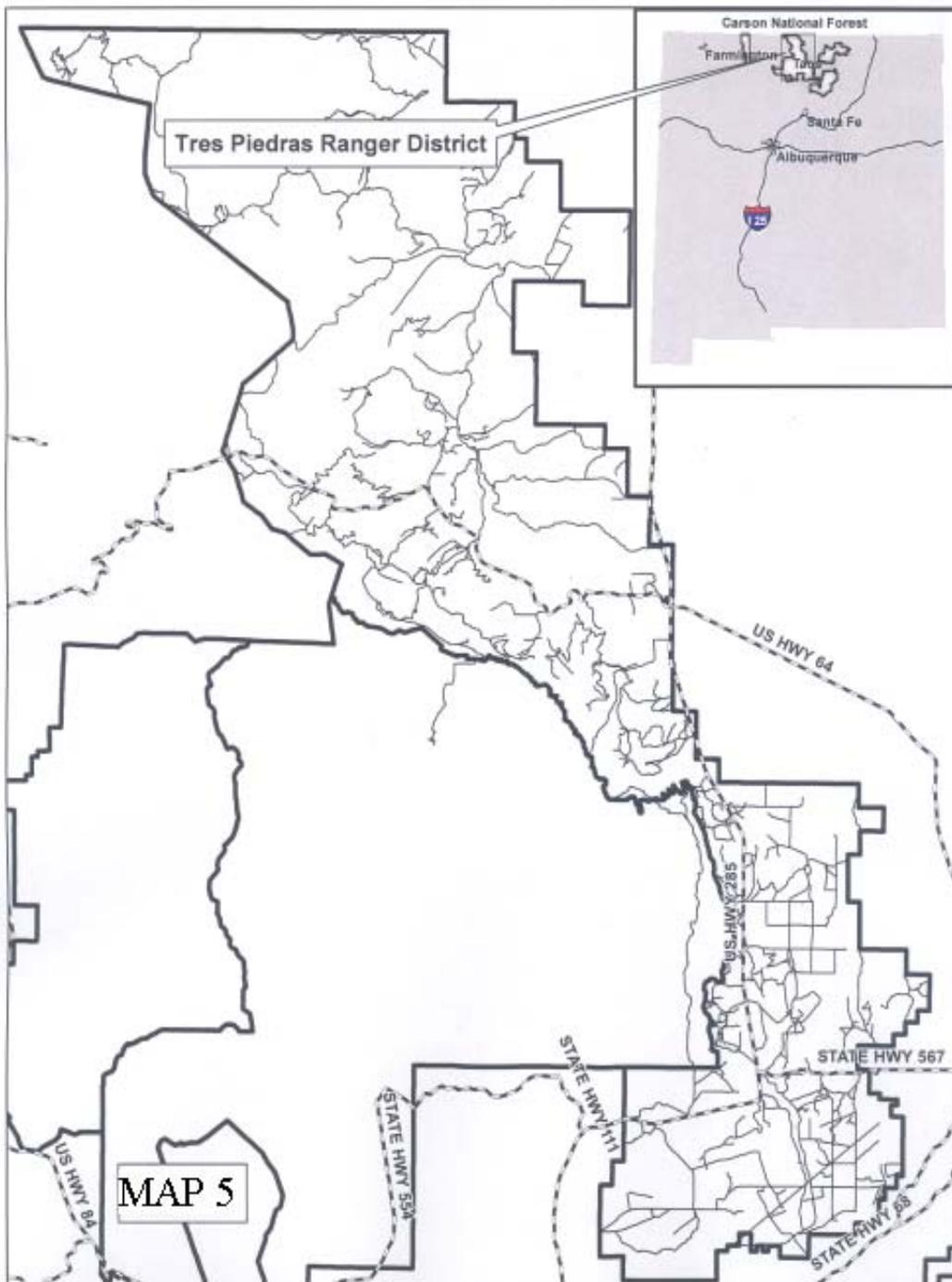


Figure 5 General Location Map, Tres Piedras Ranger District, Carson National Forest

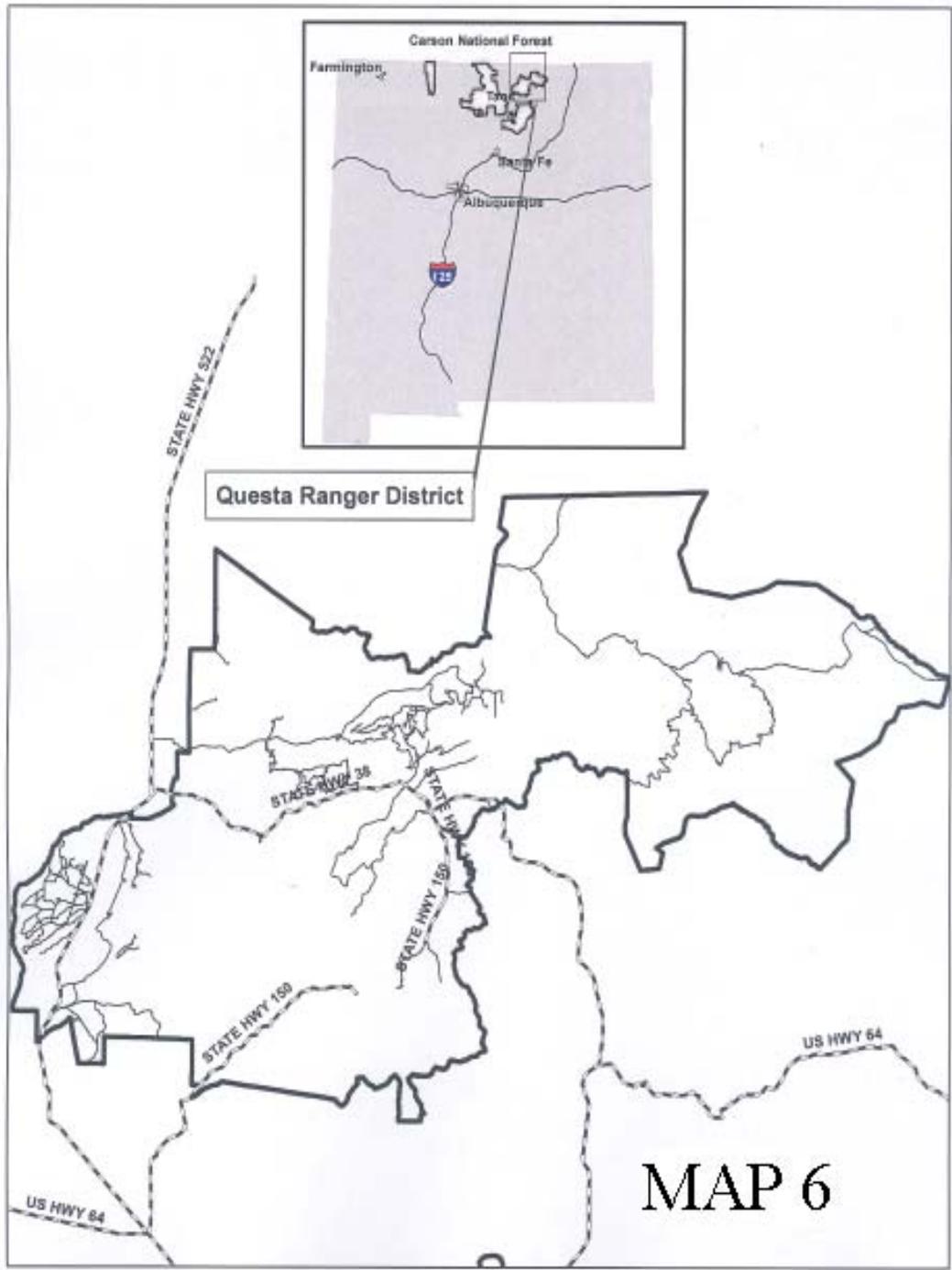


Figure 6 General Location map, Questa Ranger District and Valle Vidal Unit, Carson National Forest

Identification of Information Sources

The following sources of information were reviewed for this analysis:

- Geographic Information System (GIS) database information on the transportation system, 1986 Plan amendment travel map, heritage data, land ownership, minerals leasing data, perennial streams, wildlife data, heritage resource data, botanical data and management area information from the Carson Forest Plan, as amended.
- Forest budget as it relates to annual maintenance costs, deferred maintenance records, capital improvement costs and oil and gas industry contributions.
- 2003 Roads Analysis Plan for the Carson National Forest (USDA Forest Service, 2003) for road related issues on the district and roads considered to be high priority for maintenance.
- Data from the FEIS (USDA Forest Service, 1986) and Forest Plan (USDA Forest Service, 1986) concerning history, acres, management emphasis, current/future management directions, location/status of landownership, rights-of-way, easements and leased areas, wildlife, social and economic concerns, and heritage resources.
- Public and agency comments relating to motorized access.
- The analysis process considers National Forest System lands, and National Forest System roads (NFSR) relative to the Carson National Forest Plan as amended, existing legal prohibitions to motorized use (as issued under 36 CFR 261), and the 2005 Travel Management Rule.
- Opportunities for motorized access considered social benefits and ecological concerns. Additionally, the Travel Planning Handbook (FSH 7709.55) directed the travel analysis to consider “conflicts among users and accessibility for persons with disabilities; right-of-way acquisition needs, the interrelationship of State, county, tribal, and other Federal agency transportation facilities and travel management decisions on adjacent NFS administrative units; the availability of resources for maintenance and administration of designated trails, roads and areas; and the access needs of all landowners in areas of intermingled ownership.”

Analysis Plan – The Approach

The district level interdisciplinary teams (IDT) reviewed the existing road system, presented the information to the public and then made recommendations. District and Supervisor Office specialists then set up the analysis using the criteria that is identified in the Travel management rule including: impacts to natural and cultural resources, public safety, provision of recreational opportunities and access, conflicts among uses, and transportation system sustainability (the need for maintenance an administration and the availability of resources these purposes) (36 CFR 212.55(s)). The primary purpose of a route as well as the associated values and risks were then identified. Examples of identifying the purpose of a route was documenting that the road provided access to oil and gas leases or provided motorized access to camp sites used during the hunting season. Values include those natural resource and social values associated with a road/route. Risks identify threats to resource conditions or wildlife habitat. Opportunities for improving the existing transportation system were also documented.

Science Based Roads Process

The designated road system is based on a science based roads process. This includes specialist analysis (soil, watershed, wildlife, heritage, and recreation, etc.) resource issues. They rated roads based on the value and risk. All the analysis was gathered, compared, and a recommendation was completed for each road. This analysis is shown in Appendix A and B.

The process focused on forest system ML 2 – 5 roads using the evaluation criteria. Roads with a National Forest System Road (NFSR) number that are under the jurisdiction of others (such as county roads and state highways) were not included. In alignment with Travel Management Rule direction, the following evaluation criteria were used to describe resource risks and benefits:

- 1) Soil limitations and known soil conflicts (erosion)
- 2) Watershed – Known watershed issues and how each road segment is affecting watershed condition
- 3) Wildlife – Any known conflicts with factors such as big game winter range and threatened and endangered (T&E) habitat (Mexican spotted owl Protected Activity Areas and Northern goshawk Protected Fledgling Areas).
- 4) Other resources – Any known conflicts including heritage, range, and recreation,
- 5) Identification and description of conflicts between uses (hunting, oil and gas operations, rangeland management)
- 6) Identification and description of known conflicts between vehicle classes (semis commingling with passenger vehicles)
- 7) A review of whether existing uses are compatible with vehicle class (indicators include common speed, vehicle volume, vehicle composition, time of week, time of year)
- 8) A review of conflict between existing mixed uses (motorcycle and ATV's with passenger vehicles and commercial vehicles)
- 9) A review of trail restrictions and documenting a preliminary need for change
- 10) Review of public and agency input (suggested changes)
- 11) Consistency with the forest plan and determining the need for a plan amendment.
- 12) Jurisdiction review, and,
- 13) A general location description to accompany road numbers

The IDT then developed measures to quantify the risks and values. For example, the miles of road that crosses a perennial stream would indicate the sedimentation risk to the stream. The IDT then considered the value that roads provide to Forest Service natural resource managers and forest users and assigned an indicator as a way to quantify the value. The ranking used a three part system. The following table gives the brief description of the values used for ranking. The ranking was based on readily visible items. The ranking sum and professional knowledge of district needs, on the ground knowledge, and discussions among district personnel lead to the determination of the minimum road system.

Table 7 Brief description of ranking criteria for natural resource groups

Resource/Ranking	Soils	Watershed	Wildlife	Other	Sum
1	No noted impact	No noted impact	No specialized habitat designated	No noted impact	1-4 = low resource impacts likely
2	Some rutting of road surface, road drainage still somewhat intact	Low or minimal impacts noted	Important wildlife habitat such as winter habitat	Heritage resource expected, moderate to light use by public, moderate concentration of users	5-8 = moderate resource impacts
3	Rutting damage to soils likely, poor drainage	Sediment entering perennial water systems,	Known habitat or critical habit for TES species	Known heritage resources, heavy use by public, high concentration of users	9-12 = high resources impacts

The following access needs were identified:

1. Vegetative and Fuel Management Access,
2. Range Allotment Access,
3. Recreation access,
4. Motorized access to camping (big game hunting) sites,
5. Access to private property,

Access needs were determined from visual observations of GIS layers and maps tempered with professional knowledge of the responsible officer and the district staff. A ranking system could not be established for the access needs. Where possible the needs were noted with other resources and considered anecdotally.

Appendix A contains the chart showing the road number, district, resource information, ranking values and the minimum road system.

Step 3. Identifying the Issues

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 7 public meetings. Approximately 158 people attended the meetings.

We conducted informational public sessions at the beginning of the each meeting 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.

Initial Meetings

During these meetings, we tried to identify use patterns on the Forest and sought 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.

After we received and collated comments from the initial meetings and polled the districts on use patterns, we held several more public meetings. During these meetings, maps were displayed which included public comments from previous meetings.

We received more comments and made pen and ink corrections to the maps while discussing the maps with the public.

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.

Written comments

At each meeting, on the radio, in newspaper stories we encouraged the public to give us written comments. We received comments on the transportation system from numerous individuals and the following groups:

- New Mexico Game and Fish
- Carson Forest Watch
- Amigos Bravos
- Forest Guardians
- New Mexico Trials Association
- North American Trails Council
- Blue Ribbon Coalition
- New Mexico Wilderness Alliance
- Red River Chamber of Commerce

- Center for Biodiversity

The comments were used to help develop use motorized use patterns on the forest. The comments will be addressed in National Environmental Policy Act (NEPA) decisions in the future. Each comment was and will continue to be valuable information for the Carson National Forest.

The list below is a summary of the bulk of public comments.

- No resource damage
- More law enforcement
- Road density
- Access for commercial operations
- No public access to private land
- Better road maintenance
- Loop trails
- More restrictions for off road vehicles (OHV)
- Safety of users
- Access to forest products
- Big game retrieval
- More/keep as is- motorized trails
- Handicapped access
- More single-track trails for motorcycles
- Smaller/close motorized route system
- Motorized access to camping sites
- Recreation without OHVs
- Access to inholdings
- Good economic benefits
- No increased motorized activity
- No motorized recreation near residences
- Less noise, natural and non-motorized
- No OHVs in certain communities

The number of comments and suggestions reflects the passion the public has for the Carson National Forest, its resources and recreation opportunities. The comments and suggestions also highlight the difficulty that we face in the designation process. 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 ATV loops. Someone else suggested that we already have too many loops for ATVs.

All transportation planning has to deal with conflicting issues. Some people want more OHV access to the Forest and other want no OHVs 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 develop our proposals.

Travel Route-Related Concerns Criteria

User Conflict

Some Forest visitors value non-motorized recreation opportunities. User conflict can occur where motorized traffic impinges on areas designated as semi-primitive and/or non-motorized. Most trails on the District are managed for hiker and non-motorized use. The noise and dust associated with motorized traffic may conflict with the recreational experience these users are anticipating.

User Safety

OHV technology has improved over the last decade as to allow motorized access on steeper and more challenging terrain. Land type characteristics and trail location/condition may include safety concerns for motorized users.

Management Area Standards

Management area direction may include motorized use prohibitions or limitations for protection of natural resources and/or to minimize user conflict.

Wildlife Concerns

The impact of motorized travel routes on wildlife is mostly negative. Many scientific studies have documented the direct mortality of wildlife due to motorized route use. Generally speaking, roads alter wildlife habitat and/or disrupt movement or migration corridors. Displacement, harm, or death to species on or near motorized routes increases due to the increased human access. Motorized routes increase open road densities and often provide access to specialized habitat such as northern goshawk and Mexican Spotted Owl habitat.

Heritage Concerns

The impact of motorized travel routes on heritage sites is mostly negative on the Carson National Forest. Motorized routes through sites cause direct impacts through soil disturbance of site sediments and can cause indirect impacts through associated activities. Soil disturbance negatively affects sites by displacing artifacts, features, and the context information contained in the site.

Watershed and Aquatic Concerns

Watershed and aquatic resources are the resources at greatest risk from route-related impacts. In a given watershed basin, aquatic health depends on watershed health. Sediment delivery from road and trails surface can be exacerbated by regular motorized traffic.

Spread of Noxious Weeds

Motorized routes are known vectors for the introduction and spread of noxious weeds. Soil materials, seeds on machinery, and plant material introduced to a new area aid in spreading invasive plants. Many populations are adjacent to open roads or single purpose roads. Continued motorized travel has the potential to increase the spatial population centers (spread over the landscape) of invasive plants.

Recent funding

Roads are necessary for almost any activity on the Carson National Forest. Timber harvesting, mining, and cattle grazing all require roads. Even activities that we normally don't associate with roads, such as hiking and horseback riding, still require roads to access trailheads. All the roads that people use on the Carson National Forest need maintenance and funding is not available to maintain all the roads to an ideal

standard. This section explains funding directly spend on road maintenance on the Forest. It explains how we use our portion of road maintenance money (the remainder going for timber support), and briefly describes options for optimizing available budget on the most important maintenance tasks.

Table 8 shows the annual miles of road maintenance by road type on the Carson National Forest from 2005 to 2007. The information is from accomplishment reports.

Table 8 Completed Road Maintenance

Year	Miles	Funding
2005	286	397,000
2006	260	362,000
2007	373	363,000

In 2007, we maintained 373 miles of roads. Because of legal requirements in the Highway Safety Act, we must maintain the passenger car roads. The maintenance we do on the roads is mostly using a roadgrader to blade the roads. The operator smoothes and crowns the road surface, pulls gravel from the ditches, and fills and compacts potholes. We occasionally repair sections of a road by applying additional quantities of gravel.

Most roads on the Carson National Forest are suitable only for high-clearance vehicles. While we wouldn't necessarily put gravel on these roads, high-clearance vehicle roads require 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 filled with potholes. The surface erodes from gravel roads. Dirt roads become rutted and impassable.

It is unlikely that we will ever have enough 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 be downgraded 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. Without the rigid requirements of the Highway Safety Act, we would be able to cover at least drainage issues on far more of our road system. Another partial resolution will be to reduce the miles of the designated road system.

We know that downgrading all our passenger car roads to high-clearance vehicle status and closing all our roads except those that can be maintained to an ideal standard is not a tenable solution. On the other hand, we need to maintain our open road system to at least minimally meet Highway Safety Act requirements for passenger car roads and to a standard that acceptably protects resources. Finding an acceptable solution to this dilemma will be resolved in the Travel Management designation analysis that will follow this process.

Minimum Road System Criteria

The minimum road system is the system of roads needed to administer forest resources. This may be the existing system, a portion of the existing system or additions to the existing system. In general, the minimum road system on the forest is the roads 1) open to public use, 2) closed to the public

(administration use), or 3) special use roads for gas and oil leases and other permitted uses. The various district staff specialists, district rangers, and supervisor office staff discussed each road on the existing system. The discussions used the criteria listed below to determine the minimum road system needed to administer the forest resources. Redundant roads – two or more roads accessing the same location – were important determining criteria. Appendix A and B show the criteria used and the determination by the minimum road system. The minimum system totals approximately 1,399 miles of road.

The following criteria were used to determine the minimum road system:

1. Maintenance Level 3, 4, 5 are a part of the minimum road system.
2. Roads accessing high use recreation sites, campgrounds, concentrated motorized access camping sites and trail heads or communities remain on the minimum system.
3. Roads that are redundant – two or more roads accessing the same general location – were limited where possible to a single road accessing the general location. This was done visually using generated existing system maps.
4. Roads (Maintenance Level 2) receiving or should receive maintenance annually, every two years, or every three years all surfaces leave on the minimum road system.
5. Roads within Threatened, Endangered, or Sensitive (TES) species habitat remove from the minimum system unless needed for other resources.
6. Roads within specialized wildlife habitat (delineated winter range, calving areas, post fledging areas are examples) remove from the minimum system unless road accesses other resources.
7. Road with other values or impacting other values such as sensitive soils, adjacent to streams, rutting problems remove from the minimum system unless needed for access to other resources.

Forest Plan Direction

The Carson National Forest published its Forest and Land Management Plan (Forest Plan) in December 1986 to comply with the National Forest Management Act of 1976 (NFMA), the regulations for National Forest Land and Resource Management Planning (35 CFR part 219) and the National Environmental Policy Act of 1969 (NEPA). This Forest Plan guides natural resource management activities and establishes management standards for the Forest. The Forest Plan describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management. It presents the goals, objectives and standards to be applied forest wide and for specific subdivisions of the Forest called Management Areas (MAs). The following table, Table summarizes the Forest Plan direction.

Table 10 Forest Plan Direction

Chapter Management Area	Page in Forest Plan	Current Plan Direction	Consistency with Plan Direction	Proposed Plan Amendment
		Off Road Vehicle Use	Need for Change	<p>Motor Vehicle Use</p> <p>(1) All motorized vehicle use would be limited to designated open roads and motorized trails. General cross country motorized use would be prohibited except motorized uses approved through written authorization issued under Federal law or regulation by the authorized officer; (2) vehicles may park on the side of the designated road when it is safe to do so without causing damage to national forest system resources or facilities, unless prohibited by State laws, traffic sign, or by order (36 CFR 261.54).and, (3) In the Valle Vidal Unit, vehicles may park on the side of the designated road when it is safe to do so without causing damage to national forest system resources or facilities, unless prohibited by State laws, traffic sign, or by order (36 CFR 261.54).</p>
FP Amendment 4: Cultural	p.4	Specific sites or areas may be closed to ORV use and withdrawn from mineral entry. Parties known to have damaged cultural resources	Consistent	No Change

Chapter Management Area	Page in Forest Plan	Current Plan Direction	Consistency with Plan Direction	Proposed Plan Amendment
Resources - Forest Wide Prescription		willfully or through negligence will be held legally and financially liable for the costs of stabilization and repair.		
FP Amendment 11: Mexican Spotted Owl Standard:	p. 87	Limit human activity in protected activity areas during the breeding season	Consistent	No Change
	p.88	Generally allow continuation of the level of recreation use activities that was occurring prior to listing.	Consistent	No Change
FP Amendment 11: Northern Goshawk Standard:	p.91	Limit human activity in protected activity areas during the breeding season	Consistent	No Change
	p.91	Manage the ground surface layer to maintain satisfactory soil conditions i.e., to minimize soil compaction; and to maintain hydrologic and nutrient cycles.	PA is consistent with direction	No Change
	p.93	Within PFA's limit human activities in or near nest sites and post fledgling family areas during the breeding season so that goshawk reproductive success is Not affected by human activities.	Consistent	No Change

Chapter Management Area	Page in Forest Plan	Current Plan Direction	Consistency with Plan Direction	Proposed Plan Amendment
Ground Surface Layer Standard:	p.93	Manage road densities at the lowest level possible.	The Purpose and Need for action is to move toward the Forest Plan desired condition for road densities in big game habitat	No Change
FP Amendment 7 Forest Wide Prescription: Recreation – Vision	p.1	Provide a balanced level of developed and dispersed recreation experience (515 MRVD developed recreation and 390 MRVD dispersed recreation)	Consistent – The purpose and need for action addresses the need to provide motorized access opportunities for dispersed (motorized access) recreation.	No Change
		Establish a full spectrum of trail opportunities, considering all modes of travel ranging from opportunities for challenge and adventure to		No Change

Chapter Management Area	Page in Forest Plan	Current Plan Direction	Consistency with Plan Direction	Proposed Plan Amendment
		opportunities for people with disabilities.		
Standards and Guidelines Recreation – Roaded Natural (RN)	2-3	Manage areas within ½ mile of highways and Forest all weather and heavy used dirt roads to provide RN recreation opportunity. This will include most of the recreation sites that are Not near villages and towns.	Consistent – The purpose and need for action addresses the need to provide motorized access opportunities for motorized access recreation	No Change
Recreation - Roaded Natural (RN)	2-3	The environment should be predominantly natural appearing with moderate evidence of human intervention. Resource modification and utilization practices may be evident but should be in harmony wit the natural environment. Interaction with others should be low to moderate, but evidence of other users may be prevalent. Facilities should be designed for conventional motorized use, ranging from travel trailers to passenger cars to moderate clearance tow wheel drive trucks.		No Change
Recreation - Semi Primitive		Manage areas within ½ mile of lower standard Forest roads and areas where off road vehicles		No Change

Chapter Management Area	Page in Forest Plan	Current Plan Direction	Consistency with Plan Direction	Proposed Plan Amendment
Motorized (SPM)		<p>are permitted to provide a SPM recreation opportunity. This includes Forest system roads where use is light and maintenance levels are low. Remote recreation areas where few facilities are provided are also included in this category (Goose lake and Middle Fork fishing sites, etc) Areas designated on the Travel Mgt Map as Area 2 may change from Semi Primitive Non Motorized (SPN) to SPM during the winter season. highways and Forest all weather and heavy used dirt roads to provide RN recreation opportunity. This will include most of the recreation sites that are Not near villages and towns.</p>		

New Mexico Habitat Protection Act

The New Mexico Habitat Protection Act prohibits motorized travel off roads (cross-country) in designated areas. Under this Act motorized wheeled cross-country travel to a campsite is permissible within 300 feet of a designated open motorized road or trail. Many areas of the forest are under concurrent closure with this act.

Road Definitions (36 CFR 212.1)

The Final Rule and Administrative Policy published January 12, 2001 and the Final Travel Management Rule published November 9, 2005 established new definitions for road and trail management on the National Forests. The new definitions are listed in the introduction.

2005 Final Travel Management Rule Direction (36 CFR 212, 251, 261& 295)

Implementation of the Travel Management Rule, in approximately October 2009, will be by publication of a Motor Vehicle Use Map (MVUM), roads, trails, and cross country travel on National Forest System lands are considered closed to motorized travel unless otherwise designated as open to motorized travel. Forest Orders designating roads where motorized use is prohibited have been promulgated over the past two decades through numerous decisions. Prohibitions on cross-country motorized travel have been addressed under specific area closure such as under the New Mexico Habitat Protection Act. The implementation of a decision to prohibit motorized travel provides for wildlife habitat security, protection of water resources, and limits the spread of invasive plants through motorized vehicle use.

Step 4. Assessing Benefits and Concerns

The purpose of this step is to examine the major uses and effects of a designated motorized route system to generate the information against which the existing and future travel route system can be compared. The main element of this step is to assess the various benefits, problems, and concerns of the current travel route system and whether the objectives of Forest Service policy and forest plans are being met. Benefits are the existing and potential uses provided by travel routes and related access. Concerns are conditions for certain environmental, social, and economic attributes that the IDT deem to be unacceptable. They represent a chance of loss in environmental, social, and economic attributes if the travel route system remains unchanged.

The desired condition for the designated motorized travel route system in this analysis area is one where NFS travel routes:

- provide for safe access for forest users
- are responsive to public needs
- allow for economical and efficient management
- are environmentally sound and constructed to minimize adverse ecological impacts
- fulfill requirements of the minimum road system

Product

A list of actions requiring NEPA decisions such as road conversion from ML 2 to ML 1 is contained in the appendices. First priority is to post the motorized visitor use map (MVUM) on the website and distribute to the public. Second inform the public of the implementation. Next is the on the ground implementation (first remove signs on roads no longer open to the public, post all open roads with signs, then close roads/trails).

Benefits

Open roads provide motorized access for the public to their public lands.

Concerns

Unauthorized Routes

The forest is well roaded providing motorized access throughout the forest, except wilderness, wilderness study areas and inventoried roadless areas. Previous vegetative management, domestic livestock activities, mining, and homesteading prior to becoming national forest lands all have contributed to the existing road system. Unauthorized routes usually attempt to access single use roads by avoiding a road closure device. These routes then use the existing closed road for access. The forest locates road closure devices in logical places to make undesignated roads

difficult to bypass. Non-motorized users of the district often provide input on new unauthorized routes.

Motorized Access for Camping

Motorized access for camping has been allowed off both sides of many routes in the analysis area. Generally the access has been less than 100 feet, with some use to 300'. As popular camping locations are identified, there may be opportunities to designate existing unauthorized routes as a NFS roads open for motorized use or designate motorized access for camping locations from milepost to milepost a specified distance of 100 feet or less.

Specialist Reports

Aquatic Habitat and Species

The effects of roads on aquatic habitat are documented through mechanistic effects, such as fine sediment, changes in water temperature, migration barriers, and increased fishing pressure.

Increased sediment production and fine sediment in stream gravel associated with roads have been linked to decreased fry emergence, decreased juvenile densities, loss of winter carrying capacity, and increased predation of fishes. Pools that lose volume from sediment support fewer fish and fish that reside in them may suffer higher mortality. Increased sediment reduces populations of benthic organisms by reducing interstitial spaces and flow used by many species and by reducing alga production, the primary food source of many invertebrates. Changes in water temperature are generally associated with removing the riparian canopy. Negative effects include increased stream temperatures beyond the range of preferred rearing, increased disease susceptibility, and reduced metabolic efficiency. Culvert placement at road-stream crossings can reduce or eliminate fish passage, and road crossings are common barriers to fish. Barriers can be an advantage or disadvantage, depending on the fish species and habitat condition above and below the barrier. Roads may also increase access to streams increasing fishing pressures in some locations.

Evaluation

The process used to evaluate the impact of the current road system on terrestrial and aquatic species and their habitats focused on reducing threats to threatened, endangered, sensitive, and management indicator species or their habitats, and reducing open road density, as identified in the Forest plan. This included reducing impacts on:

- Mexican spotted owl protected activity centers
- Northern goshawk post-family fledging areas
- Peregrine falcon areas
- Rio Grande cutthroat trout Core Conservation areas
- Elk crucial winter range
- Elk calving areas.

Habitat maps were overlaid on the route system to evaluate the potential effect of the route on wildlife and fish resources. As a result of this assessment, routes were recommended open, not open, or seasonally closed to reduce traffic and human disturbance in the area.

Based on this assessment, routes were not recommended open or were recommended for seasonal closure because of potential impacts to terrestrial species and their habitats. These routes were considered to be “harassing” or “disrupting” threatened, endangered, sensitive, and management indicator species or their habitats. Not leaving these routes in use will directly reduce negative impacts to terrestrial species and their habitat. All of the unneeded routes will ultimately reduce habitat fragmentation, edge effects, poaching, disturbance, collisions, movement barriers, displacement or avoidance, and human interactions on the Forest as they are decommissioned and restored.

In addition, routes were not recommended for open designation because of potential effects to the riparian resources and watershed or water quality. These routes are directly and indirectly related to reducing impacts to aquatic species and their habitat. All these unneeded routes will ultimately lead to reductions in fine sediment, changes in water temperature, migration barriers, and fishing pressure on the Forest as routes are decommissioned and restored.

Fire Suppression and Fuels Treatment

Road access to areas on the Forest for purposes of fire suppression was considered in relation to recommendations for the minimum road system. Most fires on the Carson National Forest are lightning caused. The few human caused fires are abandoned campfires in established campgrounds. The minimum road system recommendation should not change overall response time.

The risk of a smaller road system would be that some fires will get larger because of a longer response time. Assuming a continuation of helicopter initial attack resources in the most severe part of fire season, this response time would not necessarily be longer as long as the number of fires detected does not overwhelm the combined engine and helicopter resources.

Emergency response for fire suppression is not subject to the prohibition of administrative use on Maintenance Level 1 roads, would be available. Roads recommended as unneeded and subject to consideration for decommissioning will not be actually decommissioned and made impassable to vehicular traffic in the immediate future because of limitations in funding and need for site specific NEPA on those roads and the method(s) to be used for decommissioning. Those unneeded roads that are creating resource damage currently would be the priority for decommissioning treatments, and would not be needed for fire access because of their natural resource concerns.

Roads to access needed fuel treatment areas not included in the designated road system would be addressed in NEPA documentation for the project. Access needed in the short term would be provided on open roads. Longer-term needs would be addressed in individual project documentation.

Heritage Resources

Heritage Resources include archaeological sites with prehistoric and/or historic components including limited-activity sites, habitation sites, linear sites and special use sites. Additional heritage resources include sites with traditional cultural resource values for living communities and are referred to as Traditional Cultural Places. Within the framework of the National Historic Preservation Act these “sites” are referred to as historic properties which may have the potential

to be affected by undertakings, in this case, activities associated with management of the transportation system on the Santa Fe National Forest. Miscellaneous Report FS-643, Road Analysis: Informing Decisions About Managing the National Forest Transportation System, offers guidance regarding questions to be asked when evaluating a forest's transportation system's impacts on Heritage Resources:

- How does the road system affect access to archaeological and historical sites?
- How does the road system affect cultural and traditional uses, such as plant gathering, and access to traditional and cultural sites, and American Indian Treaty rights?
- How are roads that are historic sites affected by road management?

In general on the Carson National Forest the existing road system is quite extensive and provides access to many significant heritage resources on the Forest. While the guidance in FS-643 asserts that this may be in keeping with the wishes of the public for access to enjoy and appreciate its resources, it provides a certain management problem in that increased and unmanaged visitation to heritage resources raises the potential for damage to those resources. The existing road system also provides access to cultural and traditional uses on the Forest. The Forest also has roads that overlie linear historic sites. If a road has been repeatedly maintained in the past, site documentation has shown that historic features may have been obliterated by road construction or repeated maintenance. In cases where intact features of historic roads have been documented during inventory, consultation under Section 106 of the National Historic Preservation Act has been completed to address the potential for adverse effects.

The following questions were used during the designation process to guide district staffs in making determinations about what roads, trails or areas would be designated in terms of impacts to Heritage Resources:

- Does a system of roads, trails or areas lead to or occur in an area with multiple historic properties that may be affected by access on those roads, trails or areas, or having those roads, trails or areas cross or directly impact historic properties?
- Does a system of roads, trails or areas lead to or occur in an area where Traditional Cultural Properties may be affected by access on those roads, trails or area or will those roads, trails or areas have an impact on the values that make the Traditional Cultural Properties eligible for the National Register?
- Does the Area of Potential Effects for a proposed road, trail or area have the potential to adversely affect historic properties whether they are archaeological or Traditional Cultural Properties?
- Can a different road, trail or area be used for access that will decrease or eliminate potential impacts to historic properties?
- Are there circumstances when it might be better to recommend placement of a road, trail or area through, within or adjacent to a historic property to limit or deflect access away from significant properties or features?
- If a road, trail or area is currently being used by motorized vehicles and is within, adjacent to or in close proximity to a historic property is it best to continue the use or discontinue it?
- What is the potential for historic properties to be adversely affected by roads, trails and areas in areas that have not been subject to valid inventory?

- Will the road, trail or area be used to interpret or enhance the knowledge and appreciation of heritage resources on the Forest?
- If use is continued on a road, trail or area on, adjacent to or in the vicinity of historic properties, can the Forest provide adequate monitoring of site condition?

Rationale for recommendations involved assigning codes for each road segment. Coding may include impacts to heritage resources as a rationale for not recommending opening a road, trail or area, or conversely to recommending open roads, trails or areas important for heritage resource interpretation or protection. In some cases the rationale for designation of a road, trail or area may be the result of several reasons.

Lands and Realty

Federal law requires that the Forest Service provide reasonable access to private inholdings, and the property owner must accept reasonable regulation. (16 U.S.C. 3210, Sec. 1323) The right of access to the private land is not unqualified. The access provided to the private landholder is a discretionary decision (Forest Service) based upon individual facts, laws, and circumstances.

When ingress and egress to private land is via an existing open to public access National Forest System Road, the private landowner needs no special separate written authorization to use the road. However, the private landowner does not have the right to relocate, construct, reconstruct, or maintain the National Forest System Road. On occasion the private landowner finds themselves in a situation where the minimum road maintenance standards (Forest Service) do not meet their needs and/or desires. When ingress or egress to private inholdings within national forest boundaries requires surface disturbance, or the use of a non National Forest System Road, or the landowner does not want open and unrestricted public use of the access route, the landowner must apply for and receive a special use authorization or road use permit.

We have many inholdings within the Carson National Forest. Inholdings are subdivided multiple times, resulting in a large number of different property owners forest-wide. Many of these divisions do not provide adequate access to the internal parcels, thereby encouraging the use of multiple roads for access to ones inholding. The majority of these properties are currently accessed by existing National Forest System Roads. The Forest Service is unable at this time to identify every specific road necessary for private access. In an effort to find some kind of balance between our statutory requirement to provide a reasonable right of access to private inholdings, and our need to meet the goals of the Travel Management Rule, we analyzed our system of roads, using the following factors as guidance:

- Is road primarily for private land access, or does it serve another purpose or need?
- Likely historical use and designation.
- Natural resource concerns.
- Whatever institutional knowledge we may have with the real estate development patterns specific to the parcel and in general with the area.
- The financial cost to private landowners of closing a given System road, and issuing the landowner a special use authorization for their access needs.

Minerals

Mineral extraction activities, by their very nature, require disturbance of surface resources. At times, the disturbance may be short-term, such as removal of a small quantity of surface rock for landscaping by an individual; but in some cases, the extraction activity may continue for up to 60 years, as may be the case for many of the natural gas wells on the Forest. In most cases, the exploration and extraction of mineral resources will require road access.

Most mineral extraction activities require frequent access on a year round basis. Seasonal restrictions on construction or major maintenance operations are generally acceptable to the operators.

The Carson National Forest has some “hobby” mining, such as gold panning; has active oil and natural gas production, occasional sales of landscaping rock, and the potential for uranium and other mineral developments.

The Forest needs to provide adequate access to active or reasonably foreseeable mineral exploration and extraction activities while minimizing damage to natural resources. We need to ensure access to the mineral resources on the Carson National Forest in accordance with Federal law and policy.

There are numerous patented mining claims scattered throughout the Forest, but no minerals production is occurring from any of them. As with any private inholding, the Forest will work with the landowner to assure reasonable access.

There may be potential for geothermal development over parts of the Forest, no development plans or studies have been submitted to the Forest. This potential is evidenced by the hot springs adjacent portions of forest lands.

Range

Livestock grazing on the Carson National Forest is important part of local economies, and livestock grazing is deeply rooted in Northern New Mexico culture. Livestock grazing in New Mexico has existed since the sixteenth century. Managed, permitted livestock grazing on the Forest began in the early twentieth century. Federal law requires that public rangelands were to be “managed ... so that they become as productive as feasible for all rangeland values.” The Carson National Forest administers term grazing permits on 76 grazing allotments forest-wide.

The network of roads on the Forest lands has both positive and negative effects on rangelands and the administration of the grazing program. The vast majority of grazing permittees on the Forest truck their livestock onto their grazing allotments. Livestock trailing still occurs on the Forest, primarily to facilitate the movement of livestock to adjacent private land or to other grazing allotments administered by the BLM. Some of this livestock trailing occurs along FS road corridors.

Forest roads allow range managers and grazing permittees to access allotments efficiently by using vehicles rather than horses. Roads can reduce permittee operating costs by providing motorized access to allotments. However, the same roads can produce conflicts between users of the national forests, such as between livestock grazing and recreation interests.

Road corridors are a major contributor to the spread of weeds that adversely effect native grassland and forest communities. The overall trends indicate that the human activity along roads, trails, and recreation areas, along with disturbance at oil and gas well pads and the movement of seed or other vegetative propagules by water along riparian corridors, are the main transportation vectors at this time. However, this human activity can include the hauling of livestock on trailers which could contribute to the spread of weeds if the vehicle comes from an infested area or drives through an infested area. Transport of horses and feed into the national forest for recreational use, often from areas far outside the local area to recreational sites and wilderness areas is another transportation vector of invasive weeds.

Roads also contribute to the fragmentation of open grassland and forest communities. User-created roads and trails and the cross country motor vehicle use causes physical disturbance to vegetation and soils which can compromise the ecological integrity of grassland communities by influencing species composition and rangeland hydrology.

Motor vehicle use by grazing permittees is exempt from the Travel Management Rule as long as the permittee complies with the terms of the permit. Some permittees may be allowed to use roads that will not be designated, and these roads will be part of the minimum road system. The district staffs considered permittee access needs for grazing management and maintenance of fences and other infrastructure when they selected roads for the minimum road system.

Recreation

The Forest covers land in the Sangre de Cristo and lower end of the San Juan mountains (Tusas mountains), in the San Juan Basin, and surrounding foothills. Elevations range from 6,460 on the Jicarilla Ranger District to 13,161 feet the highest point in New Mexico – Wheeler Peak, with the highest ground in the Wheeler Peak Wilderness. Vegetation ranges from open grassland, sagebrush flats, and piñon-juniper at the lowest elevations through Ponderosa pine, mixed conifer, spruce-fir up to alpine conditions at the highest elevations. Recreation resources at the lower elevations are used most of the year, while these same uses at the higher elevations are restricted during the late fall to early spring by snowfall except for snowmobiling and the spring thaw. Recreation activities include skiing, hiking, biking, horseback riding, hunting, fishing, camping, scenic driving, four-wheel driving, and motorcycle and ATV riding. Many local residents also consider piñon seed, firewood, and landscape rock gathering as recreational activities.

Nearly all the public recreational uses of the forest depend on roads for access. In *Forest Roads: A Synthesis of Scientific Information* (May, 2001; Pacific Northwest Research Station, PNW-GTR-509), the authors noted that the relationship between roads and recreation is complex. They noted indirect evidence and admittedly incomplete research to formulate the following insights and hypotheses (p. 53): *“Roads provide corridors of access to a variety of national forest sites, settings and viewing opportunities for widely diverse users. Almost all recreation use on national forests depends to some degree on road access. . . Less road mileage, maintenance, or both can lead to uneven shifts in recreational opportunities across different user, socioeconomic and ethnic groups who depend differently on roads for access.”*

“Roads provide access to trail heads and staging area to remote and wilderness areas, but the presence of roads can at the same time reduce opportunities for solitude and perceptions of wilderness.”

“As demand for forest recreational opportunities continues to increase. .. A static forest road system and condition of forest roads will likely result in increased congestion, lowered user satisfaction, and increase in user conflicts.”

Forest Recreation Use Statistics

The National Visitor Use Monitoring project was implemented as a response to the need to better understand the use and importance of and satisfaction with National Forest System recreation opportunities. This level of understanding is required by National Forest plans, Executive Order 12862, Setting Customer Service Standards, and implementation of the National Recreation Agenda. The Carson National Forest sampling was conducted in fiscal year 2003, and the report was published in June 2004. The National Visitor Use Monitoring methodology and analysis is explained in detail in the research paper entitled: Forest Service National Visitor Use Monitoring Process: Research Method Documentation; English, Kocis, Zarnoch, and Arnold; Southern Research Station; May 2002 (<http://www.fs.fed.us/recreation/programs/nvum>). Table 7 and Table 8 derived from the National Visitor Use Monitoring report summarize use statistics derived from sample interviews and other proxy data, such as trail counters.

Table 11 shows information about the number of visits per year on the Carson National Forest.

Table 11: Annual Carson National Forest Recreation Use Estimate

Visit Type	Visits
Site Visits	1,110,662
National Forest Visits	1,010,218
Wilderness Area Visits	41,203

Table 12 shows information from the 2003 National Visitor Use Monitoring report summarizing use statistics for the Carson National Forest. The percentages do not add to 100 percent because some visitors chose more than one primary activity.

Table 12: Recreational Activity, visitors participating, and main activity

Activity	% Participating	% as Main Activity
Developed Camping	8.38	3.33
Primitive Camping	9.53	1.68
Backpacking	3.58	0.33
Resort Use	0.89	0.01
Picnicking	11.14	2.68
Viewing Natural Features	37.67	4.38

Activity	% Participating	% as Main Activity
Visiting Historic Sites	6.97	0.35
Nature Center Activities	2.73	0.10
Nature Study	4.67	0.21
Relaxing	34.86	4.64
Fishing	8.19	2.53
Hunting	6.35	6.15
OHV Use	6.58	2.50
Driving for Pleasure	17.36	1.11
Snowmobiling	2.59	0.36
Motorized Water Activities	0.00	0.00
Other Motorized Activity	1.40	0.67
Hiking / Walking	38.74	18.28
Horesback Riding	1.82	0.67
Bicycling	2.19	0.70
Non-motorized Water	7.98	5.04
Downhill Skiing	47.18	48.74
Cross-country Skiing	2.44	0.27
Other Non-motorized	6.12	1.44
Gathering Forest Products	1.90	0.61
Viewing Wildlife	31.13	2.97

Of the categories cited in Table 12, 27.93% of interviewees cited their participation in one of the categories that specifically refer to motorized use. However, only 4.64% of interviewees reported that motorized use as their principal activity. And, as noted above, almost all national forest based recreation depends on motorized use to at least access the point of beginning. The National Visitor Use Monitoring sampling is a peer- under- or over-represented because of the design of the sampling scheme which may result is somewhat skewed results.

On average across the Forest, off-road motorized use is still at relatively low levels. There are exceptions in specific locations. Damage from ATV and four-wheel drive vehicles has occurred in certain locations, and forest supervisor closure orders have been imposed to stop further damage.

Since about 40 percent of the Forest has been open to cross-country travel, motorized access camping has occurred for many years in numerous locations across the Forest. The Cabresto Canyon area (Questa District) is a good example of the long-term motorized access camping practices, with many user-created routes accessing camping sites along the stream. This practice has been restricted due to damage to riparian vegetation, in the last several years by the

installation of pipe barriers, and reducing access along the road and restricting off-road travel to just a few routes into the camping sites.

Local residents gathering firewood and piñon seeds have created many cross-country routes by driving off the road. These practices have been acceptable under forest-wide permitting systems over the years.

Soils

Roads are developed for forest uses by removing vegetation, grading the native soil surface, and compacting the soil to provide a surface suitable for the intended use. The result of this road construction is development of road corridors that are virtually impermeable, with little or no infiltration capacity. Forest roads directly and indirectly affect the soil resource through the loss of site productivity, and can act as a major contributor to soil erosion and sediment transport on forest lands.

The most obvious direct effects of forest roads upon the soil resource is the reduction or loss of on-site soil productivity, where constructed roads occupy formerly productive land. Forest roads can have significant effects on site productivity by removing and displacing topsoil and vegetation, altering soil properties, changing microclimate, and accelerating erosion. Forest roads alter soil physical properties including depth, density, infiltration capacity, water holding capacity, and gas exchange rate, nutrient cycling, and microclimate. Site productivity for open roads is lost on the road surface tread, or the area occupied by the road, and diminished on cut slopes, road fills, and road treads on closed roads.

Losses of soil productivity from accelerated erosion associated with roads are variable and depend on the location, road surface (i.e. - native, gravel, paved), road gradient, road drainage features, hill slope gradient, surface soil texture, and precipitation. Forest roads intercept, collect, and concentrate surface and subsurface water flow; they divert, and accelerate surface water runoff from flow paths that it would otherwise take if the road were not present. This can result in indirect effects to the soil resource through erosion, the detachment and transport of sediments from the road surface, ditches, and fill slope material, and these effects can extend downslope of the road. Across the Carson National Forest there are a few areas of mass soil movements (debris slides, rotational slumps, earth flows, and debris flows) associated with roads.

Virtually all forest roads contribute to soil erosion and sediment transport. However, some closed roads are generally stable, often well vegetated due to the lack of vehicle traffic, and have adequate road drainage structures that minimize erosion and sediment transport. Most often, they are not as much of a problem as most of the open dirt-surfaced roads. Some closed roads are receiving un-authorized use by wood cutters, hunters and recreationists. Many of these roads have inadequate surfacing, vegetative cover and drainage features to accommodate the level of use they receive.

Open, high-clearance vehicle roads typically do not receive road maintenance due to funding limitations; therefore, they are often rutted, sometimes having blocked culverts, and often poorly defined road drainage structures, which results in higher levels of erosion and sediment delivery than closed roads. Generally, sediment generated from passenger car roads is less than that from dirt roads because they are graveled or paved, and generally receive maintenance (grading, ditch clearing and culvert cleaning) on a more frequent basis. Traffic levels, timing of road use and

road maintenance have the potential to influence soil erosion and sediment transport from forest roads. Across the Carson National Forest, yearly road maintenance typically occurs only on passenger car roads. Maintenance of these roads through grading and maintaining drainage structures can minimize downslope impacts to soil resources. However, maintenance operations have the potential to increase soil erosion in the near term by removing armoring layers on the road surface and removing stabilizing vegetation in drainage ditches.

Water Resources

Watershed resources—soil, water, and air quality—are the natural resources most affected by roads within national forest lands. While providing important access to valid use areas, roads can also negatively affect the physical, chemical and biological environments of the Forest, particularly where the roads are not surfaced or paved, or when maintenance levels are not adequate.

Physically, roads intercept and concentrate flow by collecting and transporting water from rainfall and snow melt runoff and sub-surface flow. Roads re-distribute the flow and cause increased evaporation and sedimentation. Roads expose raw soil at cutbanks, fillslopes and all locations where topsoil is removed, and contribute aerial dispersion of dust-size particulates into air and streams. Roads intersect with and damage stream channel geomorphology except where protected by culverts or other engineered structures. Such disturbances can cause channel re-routing and headcuts. Roads can damage the sensitive structure of wet soils thru rutting, displacement and compaction, especially where system roads and/or user-created tracks cross wetlands. Roads can cause mass soil movement such as landslides when located on overly steep terrain where land stability may be altered by road construction.

Chemically, roads expose raw mineral soil to weathering within the road corridor, particularly where moist. Roads can deliver sediment into stream channels, which impacts water quality. When this occurs, water quality and aquatic habitat is impaired by increasing turbidity as suspended solids, colloidal material and organic matter and dissolved solids limits light transmission through the water. Solids that are not dissolved but entrained in the flow of water eventually settle on the stream bottom and alter the physical condition of stream substrate by filling interspaces, reducing habitat for aquatic invertebrates and fish spawning. New Mexico Surface Water Quality Bureau monitors water quality, and Forest staff evaluated the Integrated List of for Assessed Surface Waters (303(d) list) as one of the criteria for recommending the proposed road system. .

Biologically, roads deliver sediment to topographic lows, which is where streams are located in forested land. Fine particulates especially can diminish dissolved oxygen needed by aquatic life forms. Roads damage wetland vegetation which helps stabilize soils.

Step 5. Describing Opportunities and Setting Priorities

Introduction

The purpose of this step is to:

- Compare the current travel route system where there are no legal prohibitions to motorized use with what is desirable or acceptable to designate for motorized use.
- Describe options for modifying the travel route system that would achieve desirable or acceptable conditions.
- Analyze areas where motorized use is not prohibited and may or may not be occurring and areas with legal prohibitions in effect but where illegal use is occurring. Describe opportunities for designating areas where motorized use could be allowed.
- Consider opportunities for camping along routes designated for motorized use.

Methodology

The assessment considers benefit criteria versus concern criteria. The benefit criteria are:

- Accesses Recreation Sites/Viewing Opportunities/Hunting Access
- Known Public Desire for Motorized Access

The concern criteria are:

- User Conflict
- User Safety
- Management Area Standards
- Wildlife Concerns
- Heritage Concerns
- Aquatic/Watershed Concerns

Accesses to Recreation Sites/Viewing Opportunities/Hunting Access

Motorized routes access recreation destinations for camping, wildlife viewing, and popular hunting locations.

Known Public Desire for Motorized Access

Public meetings held for the Forest Plan, public comment on District project scoping, and data from the Carson National Forest Social Assessment (draft, 2006) all reveal a consistent desire for motorized access opportunities on public lands.

Step 6. Reporting

National Forest System Roads (NFSR)

The existing restrictions covering the NFSRs in the analysis area were established to help provide wildlife habitat security. Another benefit has been protection of watershed resources, and indirectly reducing the spread of noxious weeds. The 2,641 miles of roads open to the public provide a variety of opportunities for motorized recreation. Prohibiting motorized travel off the designated NFSR's, consistent with the Travel Management Rule, provides an opportunity to prevent future resource damage from additional user created routes.

Cross-Country Travel

Cross country travel will be prohibited. Cross country travel has been restricted on the forest by the Carson Forest Plan as amended. Approximately 60% is closed and 40% open.

Motorized Access for Camping

Under the OHV amendment, Forest Plan amendment 9, 1993, motorized travel for camping has been allowed 300 feet off open road where camping is allowed. Many motorized camping locations on the forest have been mapped and will be accessed via specific open routes at implementation. There are no additional opportunities to designate motorized access off open routes for camping purposes.

NEPA

This travel analysis is not a decision document and will be used as an assessment for the environmental documentation needed in compliance with the National Environmental Policy Act (NEPA) to produce the Motor Vehicle Use Map and or individual project planning and subsequent environmental analysis. This travel analysis does not need any NEPA analysis, as it exists solely to provide information and identify potential opportunities for the analysis area. Any decisions concerning individual road, trails or areas will be made through the NEPA process.

Public Scoping

For complete public scoping refer to Step 3. Once finalized, this document will be available to the public on the Carson website and upon request. It will be part of the administrative record for the MVUM environmental analysis or individual project planning.

Appendices

Appendix A: References

Appendix B: Table showing Road, Wildlife, Watershed and other Resource Concerns, Minimum road System

Appendix C: Table showing Conflicts, Uses, Traffic and Road Surface

Appendix D: Table showing Mixed Use, Trail, Changes, County, Jurisdiction, Other Comments

Appendix A: References

United States Department of Agriculture, Forest Service 1999. Road Analysis: Informing Decisions about Managing the National Forest Transportation System. Washington, D.C.

United States Department of Agriculture Forest Service Southwestern Region. 1986. "Carson National Forest Land and Resource Management Plan."

United States Department of Agriculture Forest Service Southwestern Region. 1986. "Carson National Forest Land and Resource Management Plan." Environmental Impact Statement.

United States Department of Agriculture Forest Service. 2005. Travel Management Rule Washington, D.C.