

Final Travel Analysis Report

Grand Mesa, Uncompahgre and Gunnison National Forests

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Executive Summary

This document is the Travel Analysis Report for the Grand Mesa, Uncompahgre and Gunnison National Forests (GMUG) which documents a route-by-route analysis of all National Forest System roads (and a few selected non system roads) on the GMUG.

Key Findings and Results

Routes were rated based on their risks to natural ecological functions. Benefits were identified as access for forest management, special use access and recreation opportunities.

Recommendations and Opportunities to manage the Transportation System were identified and summarized below in Table 1.

TABLE 1. TRANSPORTATION SYSTEM RECOMMENDATION – GMUG NATIONAL FOREST

RECOMMENDATION	MILES OF ROAD
Road Needed and open for Public Use	2782
Place Road in Storage (ML 1) ¹	127
Road Needed for Administrative Use	367
Add Road to System	15

TOTAL ROAD MILES MAINTENANCE RESPONSIBILITY	3291
Place Road under Permit	36
Convert Road to Trail	25
Road not NFSR ² – remove from Database ³	9
Road Likely Not Needed	380
POTENTIAL MILES OF ROAD REMOVED FROM EXISTING TRANSPORTATION SYSTEM	450
FRTA ⁴ Easement granted to County	83

¹ML1 = Operation Maintenance Level 1 – a road in storage.

²NFSR = National Forest System Road

³Road coded incorrectly as FS Jurisdiction in database.

⁴County easement currently granted by US under Forest Road and Trail Act. Seven miles of which are incorrectly identified as NFSR.

A complete list of the individual rankings for each road can be found on the Analysis Results Table located in *Appendix C*.

Travel Analysis Process – Grand Mesa, Uncompahgre & Gunnison National Forest

Travel Analysis is an iterative, not a one-time process. When conditions change, additional analysis may point to the need for revisions to the recommendations. Travel analysis neither produces decisions nor allocates NFS land for specific purposes. Rather, responsible officials, with public involvement, make travel management decisions that are informed by travel analysis.

The Grand Mesa, Uncompahgre and Gunnison National Forests each underwent extensive travel management analysis and planning. Each process was documented in three separate Environmental Impact Statements.

- **Grand Mesa National Forest** – Record of Decision Grand Mesa Travel Decision signed in 1994, Amendment signed December 2003 added additional motorized routes, Mechanized Travel Decision Record of Decision signed 2010.
- **Uncompahgre National Forest** – Record of Decision Uncompahgre National Forest Travel Management Decision signed in 2002.
- **Gunnison National Forest** – Record of Decision Gunnison Travel Management Plan signed June 28, 2010. This document reflects the 2010 Gunnison National Forest Record of Decision, implementation of which is currently on-going.

Implementations of travel decisions have been on-going since 1994. The GMUG NF road and trail system has been fairly static since the 2010 Gunnison Travel Decision was signed. Travel Decisions are reflected in the OBJ MTNC field in the road data. Incidental updates, both additions and removals to the transportation system, occur as a result of specific project planning efforts.

Each travel analysis process followed the process described in the Forest Service Handbook FSH 7709.55, chapter 20, consisting of six steps described and discussed below.

STEP 1: SETTING UP THE ANALYSIS

Analysis

The foundation of the analysis was science-based focusing predominately on risks to sedimentation, water quality and wildlife habitat. Benefits were assessed on access needs for primary forest access, specific resource management activities, private land and special use permitted access and recreation opportunities. Final recommendations are based on the overall assessment of risk and benefits of every system road.

Resource Area experts on the Forest developed criteria that would best identify a route-by-route risk benefit assessment. Criteria were based on the best available GIS data for that resource. The categories chosen to rank risks and benefits were based on issues identified in Step 3. Utilizing the Resource Criteria, each road was further evaluated by District personnel to refine the benefit results based on field knowledge. Risk was based on a computed numerical ranking. Benefit was ranked as a positive or negative value.

Analysis Objectives: Satisfy the requirements of Subpart A as required by 2005 Travel Management Rule, regulation and policy. The travel management regulations (36CFR 212.5(b)) requires as part of “Subpart A – Administration of the Forest Transportation System” that the Forest Service “responsible official must identify the minimum road system needed for same and efficient travel and for administration, utilization, and protection of National Forest System lands” and identify the roads on lands under Forest Service jurisdiction that are no longer needed to meet forest resource management objectives and that, therefore, should be decommissioned or considered for other uses, such as for trails.”

Risk Rationale Described: Risks associated with motorized roads and trails were identified as sedimentation, impacts to water resources and wildlife habitat.

Risks were limited to key anthropogenic drivers. Risk indicators that affected sedimentation were identified as Road Density, Road Maintenance Level (ML), and Proximity to Water and Stream Crossings. Risks were evaluated using GIS analysis and ranked numerically, then prioritized and summarized into risk categories of High, Moderate and Low. Roads outside of the forest boundary were not included within the Risk assessment. National Forest System Trails receiving motorized travel were incorporated into the Risk assessment, specifically road density calculations.

TABLE 2. RISK FACTORS AND MEASURES

RISK	INDICATOR FOR:	MEASURE
Sedimentation	Soil movement	Road Density Maintenance Level
Water Resources	Water Quality Fish habitat	Stream Crossing
Wildlife	Big Game Summer range Sage grouse habitat	Road Density

Road density is a surrogate for transportation of sediment and run off. Road density influences water quality in terms of pollutant loader. Road density creates fragmentation of key wildlife habitats. All existing roads and motorized trails were evaluated in road density calculations, including roads in storage.

Road Maintenance Level indicates the level of development on a particular road. Maintenance Level (ML) was used as a measure for sedimentation because of the correlation to development scale, drainage structures and maintenance intervals.

- Maintenance Level 1 roads have been placed in storage; basic custodial maintenance is performed to prevent damage to adjacent resources and for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur.
- Maintenance Level 2 is assigned to roads open for use by high-clearance vehicles. Maintenance of drainage structures to prevent unacceptable environmental damage and resource protection is the primary maintenance focus rather than user comfort.
- Maintenance Level 3 roads are typically graveled surfaced, low speed single lane roads. Maintenance procedures maintain a crown or cross slope to provide adequate drainage, and drain as necessary to keep drainage facilities functional and prevent environmental damage; user comfort is a low priority.
- Maintenance Level 4 and 5 roads are designed to provide a moderate and high degree of user comfort. Drainage is via culverts, road surfaces are hardened and often paved.

Best Management Practices (BMP), techniques used to reduce sediment and control runoff associated with roads, are built into road design standards based on maintenance level. Because ML 3-5 roads are typically surfaced, contain manufactured drainage structures, and are managed for some level of user comfort they receive a higher frequency of maintenance. As a result, ML 3-5 roads are on a shorter maintenance cycle than ML 2 roads. The greater the maintenance interval, the higher potential risk to watersheds simply because an extended cycle could delay the identification and correction of a drainage problem. Being in storage, a maintenance Level 1 road, assuming that drainage structures were removed and natural drainage flows have been reinstated, would present a low risk to soil movement.

Stream Crossings are a relative indicator of potential fragmentation for aquatic movement. Stream crossings have an effect on the hydrologic structure of stream. Each time a crossing occurs, the flood banks narrow causing sedimentation, erosion and bank instability downstream.

Appendix A summarizes the Risk Analysis.

Benefits Rationale Described:

Benefits were determined on a positive or negative evaluation. The purpose or need for the road equated to the road benefit. It is difficult to assess a High, Moderate or Low benefit, the route either provides a benefit, a specific resource access need, or it does not.

Ranking one resource need against another is subjective at best; therefore no numerical ranking was done for the Benefit analysis.

The three primary categories of benefits considered were, 1) General Forest Access, 2) Resource Management Access, and 3) Motorized Recreation Opportunity. Attributes associated for each Benefit category is highlighted in Table 3 and outlined in *Appendix B*. Additionally, previous travel management NEPA decisions were taken into account recognizing that although not documented in a benefit/risk format, a route by route risk and benefit analysis was inherent to those processes.

TABLE 3. BENEFIT CATEGORIES

BENEFIT CATEGORY	COMPONENTS
A - ACCESS	Forest Access – arterial/internal arterial access Access to Private Inholding Connector Route (BLM, State, other)
B - RESOURCE MANAGEMENT	Access for Vegetation Treatment Activities Access for Range Management/Improvements Access for Utility lines/Mineral Activities Access for Reservoir/Ditch/Water Resource
C - MOTORIZED RECREATION	Access to Trailhead/Campground Access to Camping Site Motorized Recreation Opportunity (Route/Trail)

STEP 2: DESCRIBING THE SITUATION

The Travel Analysis Process neither produces decisions nor allocates National Forest System lands for specific purposes. It merely provides the analytical framework for which to make recommendations that may then be examined in the National Environmental Policy Act (NEPA) process. It describes current conditions, risks, benefits and opportunities and recommendations. Future NEPA analysis that includes public involvement may carry forward, reject or change the recommendations in this report, and provide the basis for making specific transportation system-related decisions.

Past Travel Analysis Processes

A Roads Analysis of 2005 evaluated ML 3-5 roads and identified roads necessary for management of the national forest to be managed as part of the GMUG transportation system.

Travel Management Plans for the Grand Mesa National Forest and Uncompahgre National Forest, designating a transportation system was completed in 2000, and 2002 respectively, both analyses, and decisions, were made prior to the Travel Management Rule. The Gunnison National Forest underwent travel analysis in 2008, with a decision signed in 2010. All three forests underwent an extensive route by route analysis of the road and trail systems at that time. This exercise hopes to validate those decisions through a documentation process outlined in FSH 7709.55, chapter 20.

FSH 7712 guidance issued in 2008, "Provides that travel analysis is not required to inform decisions related to the designation of roads, trails and areas for those administrative units and ranger districts that have issued a proposed action as of December 9, 2008 (73 FR 74689) and December 16, 2008 (73 FR 76333)."

Existing Road System

Roads considered to be a part of the GMUG travel system, which were selected for the Subpart A analysis, have the following Linear Event attributes in the Infra database: Route Status = Existing, System = National Forest System Road and Jurisdiction = Forest Service, summarized in Table 4. It should be noted that other non NFSR roads are entered into the Infra database to assist with map display purposes and connectivity, such as other public roads, however these routes are not officially a part of the GMUG transportation systems.

Roads outside the proclaimed forest boundaries for which a USDA easement exists areas part of the GMUG transportation system and displayed in Table 5.

National forest system roads (NFSR) identified in travel decisions supported by NEPA, not needed for long term access to National Forest System (NFS) land, will be closed until decommissioned. Because it may take several seasons to determine when decommissioning efforts are fully successful, roads identified in previous decisions, e.g. the Gunnison National Forest Travel Decision, as not needed, are coded in the Infra database as OBJ ML = Decommission, and Route Status = Existing and as such remain a part of the existing transportation system until decommissioning efforts have proven effective and future funding is no longer required. Although currently closed to motorized road travel, they are still a part of the transportation system and this analysis.

Existing Motorized Trail System

Motorized trails were used in road density analysis equations. Subpart A recommendations were not assigned to motorized trails. Trails selected for road density analysis consisted of routes with motorized travel identified in the Access and Travel Management database and the following Linear Event attributes: Existing, System = National Forest System Trail and Jurisdiction = Forest Service. Travel decisions for motorized trails were documented in previous NEPA decisions.

TABLE 4. EXISTING TRANSPORTATION SYSTEM – GMUG NATIONAL FOREST

(Routes meeting the criteria, Route Status = Existing and Jurisdiction = FS)

MILES BY OPEN TO:	ADMIN USE	ALL USERS	BLANK	
OPER MTNC LEVEL				TOTAL MILES BY ML
ML 1	232 ¹	3	46	282
ML 2	339	1862	325	2527
ML 3	19	603	8	631
ML 4	<1	269	-	269
ML 5	<1	13	-	14
TOTAL	592	2750	381	3723
Motorized Trails				1004

¹Inconsistent coding in the INFRA database, administrative use roads should not be coded as ML 1, because an ML 1 road is a closed road. Administrative use roads are typically ML 2 roads. District reviews in 2015 identified coding errors.

TABLE 5. MILES OF FOREST SERVICE ROW ACQUIRED ON ROADS OUTSIDE OF PROCLAIMED BOUNDARY
(Miles included in Table 4 totals.)

ROAD NAME	ML 2	ML 3	ML 4	TOTAL
Alpine Plateau		14		14
Crystal-Larson	0.6			0.6
East Dallas		5		5
Indian Point	4			4
Little Cimarron		5		5
Owl Creek-Cimarron			1	1
Park Creek	1			1
Ragged Mountain	0.4			0.4
Rainbow Lake		5		5
Red Creek		5		5
Stevens Gulch			5	5
West Dallas		6		6
Steers Gulch	9			9
Los Pinos-Cebolla		1		1
Grand Total	15	41	6	62

STEP 3: ISSUES

Issues were identified using internal Forest Service input at the GMUG Forest level and by public during travel management analysis processes.

Issues

- Identify a transportation system necessary for the management of the GMUG National Forest.

- Provide motorized recreation opportunities.
- High risk roads require a greater need for maintenance to mitigate impacts.
- Road maintenance budgets are anticipated to decline.

STEP 4: BENEFITS & RISKS ASSESSMENT

Risks—Risk assessment was completed on a 6th level watershed (HUC) within the proclaimed boundary based on the existing transportation system. NFS roads outside the proclaimed national forest boundary were not assigned a Risk value.

Using the risk analysis described in Appendix A, roads were ranked numerically and categorized as High, Moderate and Low risk. Roads identified as high risk will be considered for mitigations such as increased maintenance and monitoring. Tables 6-9 summarize the Risk findings.

TABLE 6. RISK - EXISTING TRANSPORTATION SYSTEM - ROADS

RISK	SUM OF MILES:	MILES IN PERCENT
High	433	12%
Moderate	2978	80%
Low	240	6%
Not Calculated ¹	71	2%
TOTAL	3723	100%

¹ Represents mileage of roads with USDA easements outside of proclaimed NF boundary, and were not a part of the Risk calculations.

TABLE 7. HIGH RISK ROADS BY MAINTENANCE LEVEL – EXISTING TRANSPORTATION SYSTEM - ROADS

MAINTENANCE LEVEL	SUM OF MILES:	MILES IN PERCENT
ML 1	3	<1%
ML 2	410	94%
ML 3	20	5%
TOTAL	433	100%

TABLE 8. HIGH RISK MAINTENANCE LEVEL 2 ROADS – MANAGEMENT RECOMMENDATIONS BY DISTRICT (EXISTING TRANSPORTATION SYSTEM - ROADS)

DISTRICT¹	GV	NOR	OUR	GUN	PAO	TOTAL MILES
RECOMMENDED MGMT						
Convert to Trail	-	2	-	3	-	4
Not Needed	<1	2	-	42	<1	43

Needed	13	22	45	181	45	306
Administrative Use	2	3	7	19	10	41
Permitted Road ²	1	<1	1	1	-	4
Storage	1	-	-	9	-	10
Non NF road	-	<1	6	13	4	2
TOTALS	17	30	54	254	55	410
Add			9			9

¹ GV = Grand Valley District, NOR = Norwood District, OUR = Ouray District, PAO = Paonia District, GUN = Gunnison District

² Permitted Road would include any of the following authorizations: Special Use Authorization included in an Operation and Maintenance Plan or added to a resource permit/AOI.

TABLE 9. HIGH RISK MAINTENANCE LEVEL 2 ROADS – MANAGEMENT RECOMMENDATIONS BY DISTRICT

(ROADS LIKELY NEEDED)

DISTRICT	02	05	06	07	08	TOTAL MILES
RECOMMENDED MGMT						
Open Public Travel	13	22	45	182	45	307
Administrative Use	2	3	7	19	10	41
Permitted Road	1	<1	1	1	-	4
Storage	1	-	-	9	-	10
TOTALS	17	25	54	211	55	371
Add to System			9			9

Benefit – benefits were determined on a positive or negative evaluation. Roads identified with a “None” benefit value were recommended as Likely Not Needed. Roads with a positive benefit were further reviewed for recommendations on management explained in Step 5 below. Table 9 summarizes benefits by category. Benefit categories are explained in Table 3.

TABLE 10. MILES OF ROAD¹ CATEGORIZED BY POSITIVE BENEFIT DISPLAYED IN PERCENT

(ROADS LIKELY NEEDED)

Benefit Category ¹	ML 1	ML 2	ML 3	ML 4	ML 5
A – General Access ²	23% ³	37%	99%	100%	30%
B – Resource Access	78%	77%	51%	62%	29%
C – Recreation	11%	30%	57%	66%	97%
Total Possible Miles	209	2216	620	266	14

¹ Miles can be counted in multiple benefit categories.

² Category A includes access to private land inholdings and connections to other systems

³ Inconsistent coding: the majority of roads in this category access private land within the NF boundary and should be coded as Administrative Use ML2 roads rather than ML1 which is a closed road in storage.

**TABLE 11. MILES OF HIGH RISK ML2 ROAD¹
CATEGORIZED BY POSITIVE BENEFIT DISPLAYED IN PERCENT
(ROADS LIKELY NEEDED)**

Benefit Category ¹	ML 2
A – General Access	50%
B – Resource Access	67%
C – Recreation	42%
Total Possible Miles	371

¹Miles can be counted in multiple benefit categories.

Appendix C summarizes the Benefit & Risk analysis for individual roads.

STEP 5: DESCRIBING OPPORTUNITIES AND SETTING PRIORITIES

Recommendations:

Several management strategies were developed to reduce maintenance costs, other strategies were identified to minimize risk to sedimentation and watershed health. Appendix C-1 identifies specific routes associated with each recommendation category.

- 1) **Manage road as a Maintenance Level 1, basic custodial Care** (closed to all travel but not decommissioned). These roads are placed in storage. They are closed to vehicular traffic but may be available for non-motorized uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level.
- 2) **Manage road under Special Use Permit or a specific resource Operating Plan**
Certain roads used exclusively to access private land inholdings can be transferred to a FLPMA Private Road authorization where the non-federal land owner assumes cost of maintenance. Road would not be considered an NFSR as part of the transportation system. Roads used exclusively by a resource permittee such as water ditches, range improvements, etc can be managed within the Operating Plan for those activities. Maintenance responsibility becomes that of the permittee.
- 3) **Manage as an Administrative Use Road.** An Administrative NFSR is a road that is not a public road. (FSH 7709.56 Chapter 40). Administrative use roads are often single purpose roads necessary for specific resource management (e.g. vegetation treatment) or maintenance of special uses (e.g. maintenance of power lines or reservoirs.) Single purpose roads may experience less travel and as a result can often sustain longer maintenance intervals; additionally, the user can be required to cost share in whole or part of the maintenance of the road.
- 4) **Road Likely Not Needed.** Roads are likely not needed for long-term management of the national forest resources. FSM 7703.25 guidance states that NFS roads no longer needed for use and management of NFS lands should be decommissioned.

Decommissioning, according to FSM 7734.01, directs that vegetative cover be reestablished within 10 years after the determination that a road is no longer needed.

- 5) **Adding roads to the system.** The addition of new roads to the forest transportation system must be informed by an appropriate site-specific environmental analysis and public involvement.
- 6) **Convert Road to Trail.** The route is no longer needed as a road, however serves a recreational need that can be attained through use as a trail. Converting a road to a trail, to be managed as part of the Transportation System, along with appropriate types of travel is addressed under specific NEPA analysis and subsequent decision.
- 7) **Correct database inaccuracies.** The Subpart A analysis process has highlighted several areas of inconsistencies with database coding. Future management and analyses would benefit from updating those inaccuracies.
- 8) **Mitigation of High Risk Roads.** Management Strategies to mitigate environmental risks focus on Maintenance Level 2 roads which constitute 94% of roads within the high risk category. Mitigation recommendations include annual monitoring with the goal of establishing a maintenance interval sufficient to prevent sedimentation loss.

STEP 6: REPORTING

Future Actions

A complete list of the individual rankings for each road can be found on the Analysis Results Table located in *Appendix C*.

The recommendations for roads, as presented in the GMUG National Forest Analysis Results Table by Road Number, *Appendix C, and C-1*, are recommendations only. Future site specific NEPA analyses that include public involvement may carry forward for implementation, reject or change the recommendations in this report, and provide the basis for making specific road related decisions. As additional information is gathered in the future, this information may result in future modifications to the recommendations in this Transportation Analysis.

Financial and Administrative Summary of the forest transportation system is described in *Appendix D*.