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# Appendix M

## Travel Management Plan



**United States Department of the Interior  
Bureau of Land Management**

**Grand Junction Field Office  
Travel Management Plan**

Grand Junction Field Office  
2815 H Road  
Grand Junction, Colorado 81506



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## ACRONYMS AND ABBREVIATIONS

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Full Phrase

ATV	all-terrain vehicle
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
GJFO	Grand Junction Field Office
NEPA	National Environmental Policy Act
OHV	off-highway vehicle
RMP	Resource Management Plan
RMZ	Recreation Management Zone
ROD	Record of Decision
SHPO	State Historic Preservation Office
SRMA	Special Recreation Management Area
TMP	Travel Management Plan
WEPP	Water Erosion Prediction Program

## 1. Introduction

Travel management is the process of identifying the system of roads, primitive roads, and trails that are designated/authorized for continual use. These roads and trails will provide for various access needs and uses of the public lands, from recreation to oil and gas and livestock management operations, into the future. When completed, the travel management plan becomes the approved system of roads and trails that the BLM commits to maintaining into the future. New routes will be added as needed to accommodate use and provide for recreation opportunities. The approved travel network will continue to evolve and change over time.

During travel management planning, the BLM considers the needs and desires for the public to get to various destinations and locations on the public lands, while also considering the ways that roads and trails affect or “impact” the sensitive resources that must be protected under various natural resources law that also guide the decisions of the BLM under the concepts of multiple use and sustained yield and many other environmental laws.

Due to the sometimes competing needs for use and protection of the public lands, and given that the current roads and trail system developed over time, travel management planning fulfills dual purposes. The general goal is to identify those existing routes that should become part of the long-term system of approved roads and trails because they access a needed or valuable destination or experience, while not causing unacceptable impacts to another feature. In addition to creating a commitment to future access, travel management plans also function as restoration plans, in that they remove from the permanent system those roads and trails that have developed over time and, through improper placement or design, are causing unacceptable impacts to other features or natural resources. Once this initial weighing is done of what should remain open and what must be closed, new routes can be added over time, with the kind of proper design that protects other resources while still ensuring that the route system as a whole functions for its intended uses.

This Travel Management Plan (TMP) supplements travel management land use allocations and planning decisions to be made in the Grand Junction Field Office (GJFO) Record of Decision (ROD) and Approved Resource Management Plan (RMP). Decisions and implementation actions not made in the RMP will be addressed in this TMP and the subsequent, associated ROD. This document will set forth a plan to manage GJFO’s designated system of roads, primitive roads and trails, access and uses. Specifically, the TMP summarizes the proposed area designations outlined in the PRMP, followed by an outline of the criteria used for designation of routes across the field office, outlines the implementation-level route designations, and explains the implementation process and standard operating procedures (including the zone-specific guidance for Zone L). Attachments provide additional plans on signing, educational efforts, rehabilitation, and engineering of the established travel network.

The project area for the GJFO TMP includes approximately 1.06 million acres of public lands administered by the GJFO, Northwest District Office of the Bureau of Land Management. Travel management is the process of planning for and managing access and travel systems on public lands. The Grand Junction Field Office (GJFO) Travel

Management Plan (TMP) is written in conformance with the *Grand Junction Field Office Proposed Resource Management Plan (PRMP)*.

The GJFO TMP is based upon extensive public participation and workshops, as well as structured interdisciplinary team analysis. The BLM recognizes the importance of access for public visitation, scientific studies, and administrative uses, while providing for the protection of natural and cultural resources. The evaluation process incorporated the four minimization criteria set forth by 43 Code of Federal Regulations (CFR) 8342.1 (a-d), as well as additional planning criteria established in the GJFO RMP, and created a designated route system consistent with land use allocations.

Outcomes-based recreation management, the approach adopted by the GJFO, is a recreation management philosophy that focuses on the positive and beneficial outcomes derived from recreational activities, rather than emphasizing the recreation activities themselves. It promotes quality recreation experiences from the visitors' or users' perspectives. Outcomes-based provides the conceptual recreation framework to view, plan, and collaboratively deliver recreation services as a means to a larger end – an end in which outcomes benefit individuals, communities, economies, and the environment. By conducting outcomes-based analysis, recreational settings can be better delineated and managed. In outcomes-based analysis, priority is given to resource dependent recreation. Resource dependent recreation is that which can only be done where the natural resource or setting exists. An example is running for fitness versus nature hiking. Fitness running can be done on a treadmill or anywhere a suitable surface exists. Nature hiking requires a natural setting and things to observe along the way. Hiking would not be suitable indoors or in unnatural settings, thus it is a resource dependent recreation.

Approved transportation routes identified for recreation purposes will include opportunities and quality experiences for all user groups, including hikers, backpackers, equestrians, bicycles, ATVs, four-wheel-drive vehicles, motorcycles, backcountry aircraft pilots, hunters, and fishers. However, one should not interpret that all users will be accommodated in all areas.

## **1.1 Background**

Approximately 42 percent of the planning area is currently designated as open to cross-country off-highway vehicle (OHV) use, 44 percent is limited to existing or designated roads and trails, 11 percent has seasonal limitations, and three percent is closed to OHV use.

Areas with designated routes typically do not contain trails built with consideration for sustainability, resource concerns or conditions, or recreation experiences. Most routes either follow historic routes, such as those for grazing, mining, or administrative access, or they were user created. In either case, the trails do not always provide desirable recreation experiences and have unmitigated impacts to natural or cultural resources.

Travel management historically focused specifically on motor vehicle use. A shift in the accepted paradigm has caused the BLM to develop a more comprehensive travel management process which encompasses all forms of transportation, including travel by foot, horseback, and mechanized vehicles such as bicycles, as well as the numerous forms

of motorized vehicles from two-wheeled (motorcycles) and four-wheeled all-terrain vehicles (ATVs) to cars and trucks.

Many routes within the GJFO were constructed to create access to public land improvements, timber and vegetation management projects, gas and mineral development, range management, and various ROWs. Of these routes, many were not necessarily intended to be left behind or open for recreational use, but have become popular routes for visitors engaged in mechanized and motorized recreation activities. Some routes were created or pioneered by visitors. Open travel designations that permit cross-country mechanized and motorized use, high levels of use, and improvements in mechanized and motorized vehicle technology have allowed public land users to gain access to and through more terrain. These routes are not typically maintained by the BLM; rather, it is the repeated passage of vehicles that maintains these routes. Not designed, but created, these routes are often rutted and eroded.

## **1.2 Laws, Regulations, Policies and Program Guidance**

The process of considering and providing appropriate access is guided by a complex series of more than fifteen major individual laws, as well as additional regulations and policies defining the type of access and recreational experiences that should be provided while protecting the sensitive resources (e.g., fish, wildlife, plants, and archaeology) that the federal government is also required to protect and conserve on the public lands. The trade-offs required by these individual laws are not always straightforward or linear, and in some cases, they may even conflict. The process of finding this balance, between present-day use and enjoyment and conservation for future generations, is known as multiple use management, and is one of the defining factors of the BLM's mission.

Currently, the Code of Federal Regulations (CFR) establishes the criteria for designating public lands with respect to OHVs and for establishing controls governing the use and operation of OHVs. Non-motorized and non-mechanized uses have been addressed in this planning effort, and decisions made will be incorporated into supplemental rules for enforcement purposes.

Laws and regulations that influence or direct travel management planning include:

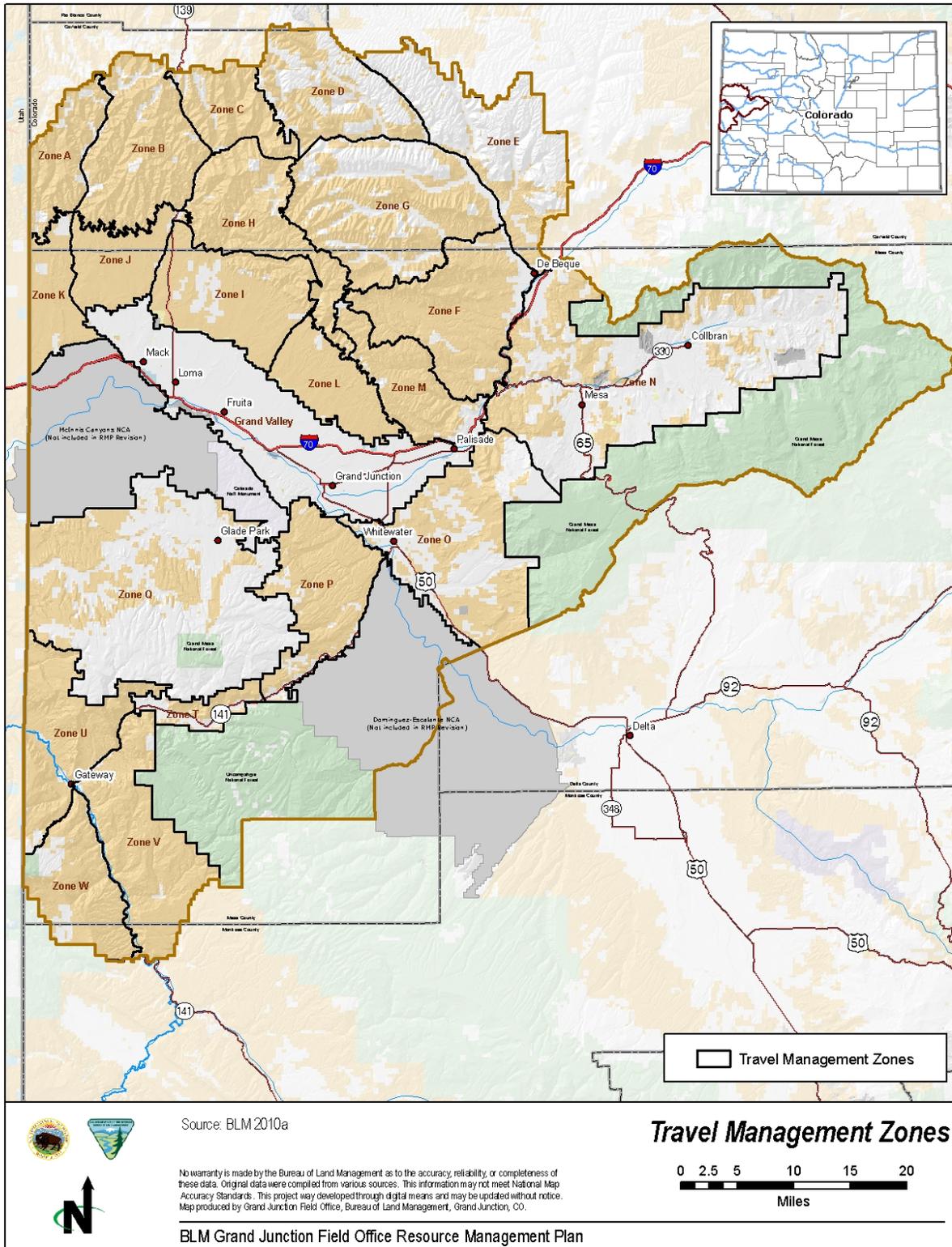
- National Environmental Policy Act (NEPA)
- Endangered Species Act (ESA)
- Wilderness Act
- National Historic Preservation Act
- Antiquities Act of 1906, including Monument Proclamations
- Wild and Scenic Rivers Act
- Clean Air Act
- Clean Water Act
- Taylor Grazing Act
- Mining Act of 1872 (and subsequent mining acts)
- Federal Land Policy and Management Act (FLPMA) BLM
- Code of Federal Regulations (CFR)

Management of OHV use and mountain biking will be consistent with the guidance in BLM's National Strategy for Motorized Off-Highway Vehicle Use on Public Lands

(USDI-BLM 2001) and the National Mountain Bicycling Strategic Action Plan (USDI-BLM 2002).

The National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands (Strategy), finalized by the Bureau of Land Management (BLM) in January 2001, was the first step in developing a proactive approach to determine and implement better on-the-ground management solutions designed to conserve soil, wildlife, water quality, native vegetation, air quality, heritage resources, and other resources, while providing for appropriate recreational opportunities. It provides agency guidance and offers recommendations for future actions to improve motorized vehicle management. This priority was re-emphasized by the BLM's M-1626 Travel and Transportation Manual and H-8342 Travel and Transportation Handbook, BLM's Priorities for Recreation and Visitor Services (Purple Book), and Colorado's Recreation and Visitor Services Strategy. The Colorado State Director has given specific policy direction found in Instruction Memorandum No. CO-2007-020, which explicitly directs BLM Colorado to accomplish comprehensive travel planning.

As identified in BLM Colorado's Recreation and Visitor Services Strategy, comprehensive travel planning is integral to maintaining and managing the character of recreation settings. Travel management decisions support the fulfillment of planning objectives (which include desired recreation setting objectives) to protect and/or enhance landscape character. This is facilitated by working closely with communities, sister agencies, interest groups, and interested individuals to balance protecting the health of the land with providing needed and desired levels of public and administrative travel and access.



## 2 Travel Management Planning Process

### 2.1 Overview

Travel management issues are considered sequentially at three levels:

- Land Use Planning – GJFO PRMP
- Activity or Implementation Level Plans – GJFO TMP
- Plan Implementation – Project Plans and on-the-ground actions

FLPMA requires that the BLM “develop, maintain, and, when appropriate, revise land use plans” (43 United States Code 1712 (a)). BLM has deemed it necessary to revise the existing RMP for the GJFO based on a number of new issues that have arisen since preparation of the initial RMP in 1987.

This document addresses the designation criteria, planning criteria, data collection, and route designation process by which the GJFO Interdisciplinary (ID) Team developed the Final Resource Management Plan/Final Environmental Impact Statement (Approved RMP/FEIS) route designations for motorized, mechanized, and non-motorized uses for the Planning Area, including those related to the following management decisions:

- **Land Use Planning Decisions** -- The land use planning decisions of the Travel Plan define the areas within the GJFO that are designated as “Open,” “Limited,” or “Closed” to various modes of travel; as well as the number of miles of designated routes under the Limited category.
- **Implementation Decisions** -- Implementation decisions of the Travel Plan that are included in this document include the designations of routes within areas delineated as Limited to Designated Roads and Trails.

For Zone L, an area designation will be completed in the future to determine appropriate use after analyzing the distinct natural, cultural, recreational, and social factors of the area.

### 2.2 Inventory

GJFO initiated the travel management planning process in 2004, beginning with a route inventory that ended in 2010. This inventory provided the foundation and baseline for the TMP.

Inventory procedures were designed to collect information necessary for planning and management of the area. The inventory documented and mapped routes, route conditions, facilities, improvements, and public use areas accessed by the routes (range and wildlife improvements, recreation activity areas, gates, fences, trailheads, and other features). The inventory was conducted by BLM personnel on motorcycles, bicycles and foot. The inventory staff took steps to capture every linear feature that could be seen on the ground in the GJFO. This included features that were engineered (planned), as well as unplanned single-track and two-track linear features that are not part of the BLM’s transportation network. In some areas the inventory also captured linear disturbances such as created during uranium exploration or construction of a pipeline, which were never intended to function as roads. Inventory procedures were designed to collect information necessary for planning and management of the area. Open areas, or areas that had an extremely high

density of routes, were screen digitized, field verified, and, in the North Desert, sampling was used to determine accuracy of route data and estimate mileage of routes.

The travel management inventory identified roughly 4,000 miles of roads, trails, and other features within the planning area, covering 1.06 million acres. In order to effectively communicate with the public, cooperating agencies, partners, user groups, and resource specialists and to track decisions, the planning area was broken into 19 zones, labeled A to W (see figure on preceding page). Each route was broken into segments (defined by intersections) and given a unique number that correlated with its zone (e.g., A102).

## **2.3 Public and Cooperator Participation**

The GJFO Travel Plan is based upon extensive public and cooperating agency participation, including workshops and multiple comment periods.

### **2.3.1 RMP Scoping**

The formal public scoping process for the GJFO RMP/EIS and TMP began on October 15, 2008, with the publication of a Notice of Intent in the Federal Register. Public scoping ended January 9, 2009. Public outreach during this scoping period included: 1) a newsletter mailed to over 600 agency contacts, organizations, and members of the public; 2) three scoping open houses in December 2008 (Grand Junction and Collbran, Colorado, and Moab, Utah); and 3) a public website, <http://www.blm.gov/co/st/en/fo/gjfo/rmp>, which provides access to materials distributed at scoping meetings as well as information on the public involvement process.

A total of 64 comment letters received during the scoping period addressed travel management. Most of the planning issue comments focused on travel management (23.7 percent), which were consolidated into one issue statement.

*“How will motorized, non-motorized, and mechanized travel be managed to provide commodity, amenity, and recreation opportunities, reduce user conflicts, enforce route designations and closures, reduce fragmentation and habitat degradation, and protect natural and cultural resources?”*

### **2.3.2 Travel Management Comment Period 1**

GJFO hosted a series of “travel management data collection workshops” in February 2009 to give the public the opportunity to review its route inventory for completeness and accuracy, as well as offer suggestions for possible reroutes or new routes that would complement the existing system. The workshops were held in Delta, De Beque, Collbran, Gateway, Fruita, and Grand Junction, with over 200 participants. A total of 118 written comments were received during this comment period.

### **2.3.3 Travel Management Comment Period 2**

GJFO identified the need and interest from public comments additionally in 2009 not only on the completeness and accuracy of the inventory but also to help evaluate the quantity and quality of the experiences and desired recreation setting available in the planning area. The GJFO received 178 written comments during this comment period. Viewpoints expressed in the comments reflected a wide spectrum of desires regarding desired levels of access.

### **2.3.4 Coordination with Partners, Cooperating Agencies, and Resource Advisory Council (Sub-group)**

During the data collection and inventory phase of the planning process, BLM staff met with offices of the US Forest Service and BLM with contiguous acreage, with county and municipalities within the planning area, and Colorado Department of Wildlife and US Fish and Wildlife Service to verify the inventory data and collect additional information on resource concerns and access needs.

Throughout the process, GJFO staff made presentations at local user group meetings and to the Cooperating Agencies and Resource Advisory Council (Sub-group) on the defining law, policy, goals, and objectives associated with travel management and the process to be used in designating the travel management network.

During the route by route selection by alternative, the cooperating agencies were invited to participate in providing information to the resource specialists to aid in the alternative development. A complete list of attendees by date and area discussed is included as TMP Attachment 4.

### **2.3.5 Response to Travel Management Comments**

Throughout the planning process, BLM has received thousands of comments which have been recorded and incorporated into the planning criteria that informed decisions for each alternative including the preferred. During the draft comment phase, GJFO received roughly 1,500 comments that were route specific. Each comment is captured in a travel related comment report that provides rationale for decision making and compares the request of the commenter with the final decision. The BLM considered each comment received in the framework of its association with the GJFO route segment(s) or area(s) it addressed.

## **3 RMP Level Decisions**

### **3.1 Area Designations**

#### **3.1.1 Open**

Open areas are areas where cross-country motorized and mechanized travel is allowed. They are limited to a size that can be effectively managed and geographically identifiable to offer a quality, safe, and varied experience for participants. Open areas provide a different type of recreational experience as compared to trail riding, by giving the rider an opportunity to choose terrain that will challenge his or her skills and equipment. Open areas will be fenced or boundaries clearly signed, closed to shooting, and have parking and information portals. The size and number of open area(s) vary across the different alternatives.

#### **3.1.2 Limited**

“Limited to designated routes” is the primary allocation for motorized and mechanized use in the planning area. All areas outside of the open and closed polygons by alternative are limited. Limitations include modes of travel, seasons of use, and types of user.

Generally, horse and foot travel is not limited to designated routes. Certain areas with high use, sensitive resources, or potential negative interactions with other users require that foot and horse travel is limited to designated routes or, in some alternatives, excluded all together.

### **3.1.3 Seasonal Limitations**

Five seasonal limitations for motorized and mechanized travel are proposed within certain areas limited to designated routes.

Wildlife limitation dates were recommended by Colorado Parks and Wildlife and are being incorporated into travel management planning throughout BLM Colorado, where appropriate. These limitations that include Winter Limitation (Big Game), Spring Limitation 1 (Sage Grouse), and Spring Limitation 3 (Elk Calving) were established to avoid critical periods for sensitive species. Open Rifle Hunting Season Limitation would be provided through easement agreements coordinated by CPW. Spring Limitation 2 for soils would take place during spring months when saturated soil conditions are most predictable (typically associated with spring melt-out) and targets soil mapping units particularly vulnerable to erosion. Spring melt-out typically occurs from the beginning of March through the middle of May in the GJFO planning area.

### **3.1.4 Closed**

This designation closes an area to any and all travel, non-motorized and non-mechanized included. Areas are designated closed if closure to all types of transportation is necessary to protect resources, promote visitor safety, or reduce use negative interactions. These areas vary by alternative and include WSAs, ACECs, LWWCs, WSR segments, Critical Habitat and Research Areas, Wildlife Core Areas, and Municipal Watersheds.

## **4 Implementation Level Decisions – Route Designation**

Implementation level decisions include the process of assigning route designations to each route within the limited polygons, in accordance with alternative themes, while balancing access and resource concerns. Route designation is an implementation level decision governed by the higher level RMP. Implementation decisions are subject to appeal. The range of alternatives developed in the route designation process for this TMP mirror the goals and objectives of each of the alternatives developed in the RMP revision. Future adjustments to the designated route network would be accomplished through plan maintenance (minor adjustments) or additional NEPA review and decision-making.

### **4.1 Draft Travel Plan Development**

GJFO Interdisciplinary Team and cooperating agency representatives convened to consider each route and evaluate the access needs, public comments, and resource concerns of each. The planning team used a structured, consistent approach to consider the significant amount of data that went into the analysis process. In addition to cooperating agency representatives, the team included representatives of the interdisciplinary team and specialists representing every major program that the BLM administers (e.g., range management, archaeology, and wildlife). These specialists are knowledgeable about local data and the laws or regulations that influence each program.

Individual specialists had access to their own datasets so they could see the results of past surveys and inventories that had been done. Together, the team projected the map of the current route system and the route being considered and used Google Earth to maintain common assumptions and knowledge about terrain and human-made features present on the landscape. Each specialist represented their particular resource. Together, the team gave specific attention and value to maintaining access to public lands, providing for quality recreation, while also protecting sensitive resources that are affected by roads and trails, working together to balance those considerations toward a travel plan that reflected RMP guidance.

## **4.2 Final Travel Plan Development**

In developing the proposed plan for the FEIS, GJFO Interdisciplinary Team and cooperating agencies convened for seven additional weeks to consider each route in the Proposed Alternative again in light of public comment. This resulted in measurable changes from the original Alternative B (Preferred Alternative) that appeared in the draft RMP.

In the development of the proposed BLM looked at routes that for various reasons would require some form of mitigation (bridge, reroute, public access, etc.) to allow for long term public or administrative access. These situations included issues like safety concerns from an operating well pad, no legal public access, impassable wash out or resource that needs to be avoided to name a few. In these instances, BLM is proposing mitigation measures to remedy the situation and allow for continued access. Route reports will have specific information on the issue, mitigation measure needed and any special instructions. Roughly 13% of routes have mitigation requirements that result in a change to the route designation. These routes are included below in Table 2 under the column header “Travel Designation Following Mitigation”.

## **4.3 Exceptions to Standard Route Designation Process**

### **4.3.1 Recreation Management Areas with Existing Travel Plans**

Within the planning area, Bangs Canyon SRMA and North Fruita Desert SRMA currently exist, and site-specific travel plans already exist for these areas. These travel decisions were not re-evaluated in this effort (Bangs Canyon SRMA and North Fruita Desert SRMA) unless:

1. new resource information was available;
2. public comment was received regarding the route; or
3. recreation staff thought it made a valuable contribution to the network.

### **4.3.2 Zone L – North Desert Area**

Zone L (North Desert) proved to be one of the most challenging zones to consider, both for the BLM and for the public, due to its route density. Through public comment and further interdisciplinary consideration, the BLM determined that a different process was needed to make effective planning decisions for this zone.

Following completion of the rest of the TMP, the BLM will undertake a specific planning process for this area and will allow the use of existing routes within the boundary of this zone until individual routes are designated within this area. See Attachment G for additional guidance developed for route designations in Zone L.

### **4.3.3 Other considerations**

#### **4.3.3.1 Backcountry Airstrips**

There are a number of locations throughout the GJFO that are commonly known and consistently used for aircraft landing and departure activities that, through such casual use, have evolved into backcountry airstrips (the definition contained in Section 345 of Public Law 106-914, the Interior and Related Agencies Appropriation Act of 2001). In accordance with that law, require full public notice, consultation with local and state government officials, the Federal Aviation Administration (FAA), and compliance with all applicable laws, including NEPA, when considering any closure of an aircraft landing strip.

In addition to compliance with applicable aviation regulations, backcountry airstrips will be designated and managed the same as travel routes for other forms of transportation. As such, management of backcountry airstrips would conform to all decisions, including those regarding route construction and maintenance, outlined in this travel management plan.

#### **4.3.3.2 Dispersed Camping**

Dispersed camping would be allowed in the planning area. Existing spur routes that lead to campsites would be designated and identified. No cross-country travel associated with dispersed camping is allowed outside the open areas, and dispersed camping was largely addressed in most zones. During the implementation of approved designations, some additional spur routes to potential campsites may be designated as open to accommodate use consistent with resource concerns and desired future outcomes of the recreation program.

## **4.4 Route Designation Evaluation Criteria**

BLM established route designation criteria through scoping, internal issue development and RMP resource specific goals and objectives. For the evaluation of each route, route purpose was defined which included a study of current uses and legal or administrative agreements associated. Once route purpose was defined, each route was evaluated by the designation criteria established by 43 CFR Subpart 8342 and GJFO specific planning criteria identified in the RMP. All public comments were considered in route decisions. Attachment H provides a detailed list of resources considered in the process.

### **4.4.1 Designation Following Mitigation**

During the structured analysis process, sensitive resources were identified requiring mitigation measures that would minimize effects to resources.

Generally, the alleviation or lessening of possible adverse effects on a resource by applying appropriate protective measures were defined and may be achieved by reroute, maintenance, additional resource surveys, remedying a safety issue or

securing public access. Some routes may change designation following the completion of prescribed mitigation. Routes with proposed designation changes are shown in Table 2.

## 4.5 Route Designations

The following designations were utilized in the route designation process.

- Open to all uses
- Seasonal Limitation
  - Winter Closure: December 1 – May 1
  - Spring Sage-grouse Closure: March 1 – June 30
  - Rifle Hunting Season Open: October 1 – November 30
  - Elk Calving Spring Closure: May 15 – June 15
- Limited to under 50” only
- Limited to under 50” only with winter seasonal limitation
- Limited to Foot, Horse, Bicycle and Motorcycle Only
- Limited to Foot, Horse, Bicycle and Motorcycle Only with winter seasonal limitation
- Limited to Foot, Horse and Bicycle Only
- Limited to Foot, Horse and Bicycle Only with winter seasonal limitation
- Limited to Horse Only
- Limited to Foot and Bicycle Only
- Limited to Bicycle Only
- Limited to Foot Only
- Closed and
- \*Limited to Administrative and Permitted Uses Only

\*Administrative routes are those that are limited to authorized users (typically motorized access). These are existing routes that lead to developments that have an administrative purpose, where the BLM or a permitted user must have access for regular maintenance or operation. These authorized developments could include such items as power lines, cabins, weather stations, communication sites, spring developments, corrals, or water troughs.- (H-8342 Travel and Transportation Handbook)

Administrative routes are managed for permitted/authorized uses only. In some cases, these routes may be open to foot and horse travel, but only in areas that are open to cross country travel for foot and horse.

## 4.6 Right-of-Way (ROW) and Needed Easements

Public lands authorized to be used or occupied for specific purposes pursuant to a right-of-way grant, which are in the public interest and which require ROWs over, on, under, or through such lands. Examples are roads, power-lines, pipelines, etc.

Acquisition of road or trail easements, or issuance of a right-of-way on an existing or historic physical access, would be pursued in areas where those actions would contribute to the protection and management of natural resources, such as access to range improvements/animal husbandry, and/or the enhancement of recreation opportunities. These methods of acquiring public access would only be available from willing landowners. BLM will work with partners, cooperators, landowners and other stakeholders to achieve access goals to public lands.

**4.6.1 The primary areas identified as priorities for providing public access:**

- De Beque area (southwest of the Town of De Beque)
- Roan Creek area (northwest of the Town of De Beque)
- ERMA and SRMAs to achieve recreation objectives
  - Bangs SRMA Clarks Bench and Tabeguache at Needem-Moore Seldom Feed Park
- Grand Mesa to Palisade Rim
- Palisade Rim to Horse Mountain
- Cheney Reservoir
- West side of North Desert ERMA to Rabbit Valley and Utah Rims SRMA

**Table 2. Route Designations in Miles**

<b>Designation</b>	<b>Travel Plan</b>	<b>Travel Plan % of Total</b>	<b>Travel Plan Following Mitigation</b>	<b>Travel Plan Following Mitigation % of Total</b>
Limited to under 50" Only	37	1%	48	1%
Limited to under 50" Only with Seasonal Limitation	7	<1%	7	<1%
Limited to Bicycle Only	1	<1%	1	<1%
County Maintained	309	8%	309	8%
Limited to Foot and Bicycle Only	6	<1%	8	<1%
Limited to Foot Only	7	<1%	7	<1%
Limited to Foot and Horse Only	47	1%	54	1%
Limited to Foot, Horse, Bicycle and Motorcycle Only	89	2%	84	2%
Limited to Foot, Horse, Bicycle and Motorcycle with Seasonal Limitation	3	<1%	3	<1%
Limited to Foot, Horse and Bicycle Only	99	2%	101	3%
Limited to Foot, Horse and Bicycle Only with Seasonal Limitation	14	<1%	14	<1%
Open to all uses	871	22%	1,004	25%
Open with a Seasonal Limitation	235	6%	237	6%
Open (in open areas)	291	7%	291	7%
Undesignated (Zone L)	545	14%	545	14%
Undesignated Deferred (Mesa County important recreation routes)	189	5%	189	5%
Limited to Administrative and Permitted Uses Only (332 miles with no public access before mitigation)	524	13%	330	8%
Closed (94 miles with no public access before mitigation)	723	18%	763	19%
<b>Total**</b>	<b>3,997</b>	<b>100.0%</b>	<b>3,995</b>	<b>100.0%</b>
Total Open to Non-motorized Only (sum of non-motorized categories)	174	4%	185	5%
Total Open to Motorized (sum of motorized categories and deferred)	2,576	64%	2,717	68%

\*Designations were deferred on 219 miles of routes; however 30 of these miles have a designation from the 1987 RMP that remains in place until future designations are completed.

\*\*Totals vary slightly due to rounding errors.

## **5 Implementation Strategy**

Following approval of the proposed plan, a notice will be published in the Federal Register, in accordance with 43 CFR §8365, to establish new use restrictions needed to implement and enforce the plan.

### **5.1 Prioritization of Work**

#### **5.1.1 Prioritized Factors**

Specific prioritization of work will be guided by the following priority factors. The highest priority would be given to areas for which all factors apply.

**TABLE 3. PRIORITY FACTORS**

Factor	Resource	Area
Regulatory resource concerns	Cultural	Castle Rocks Blue Creek
	T & E Plants and Wildlife	Whitewater Castle Rocks Pyramid Rocks South Shale Ridge Listed Fish including Critical habitat <ol style="list-style-type: none"> <li>1. Gunnison River</li> <li>2. Colorado River</li> <li>3. Greenback cutthroat trout habitat (if still listed)</li> </ol> Gunnison Sage-Grouse <ol style="list-style-type: none"> <li>1. Critical Habitat</li> </ol>
	Water quality and wetlands	Stream segments identified in regulation 93 Total Maximum Daily Load (TMDL) stream segments Conform with the salinity control act
	Wild Horse Area	Little Book Cliffs
RMP Areas of Priority Resource Concerns	ACECs	Pyramid Rock ACEC Indian Creek ACEC
	High recreation value and high resource concern	Bangs SRMA North Desert ERMA - 21 Road (Hunter Canyon) Barrel Springs ERMA Horse Mountain ERMA

Factor	Resource	Area
	BLM Special Status Species	Perennial Streams (cutthroat trout) North Fruita Desert (prairie dogs, antelope, burrowing owls, great basin spade foot, buckwheat) Greater Sage Grouse Occupied Habitat 1. Roan Creek Drainage (watershed) 2. Sunnyside Area
	Lands Management for Wilderness Characteristics	Bangs Canyon Maverick Unawweep
	Wildlife Emphasis Areas	Prioritize work in these areas based upon monitoring of recreational use. Prioritize work in areas with high use over areas with low use.
	Wild and Scenic Rivers	Dolores River
	Perennial streams, Riparian corridors and/or fish bearing streams	Barrel Springs Blue Creek North Mesa Creek Granite Creek Roan Creek and tributaries East Creek West Creek Dolores River Colorado River Gunnison River Kannah Creek North Fork Kannah Creek Little Dolores Cottonwood Creek and Rapid Creek
	Soils (Slump areas, fragile soils, saline soils)	Barrel Springs North Desert North Fruita Desert

Factor	Resource	Area
		Plateau Valley Area Roan Creek
Socioeconomic areas of importance	Special Recreation Management Areas (SRMAs)	Bangs North Fruita Desert Grand Valley OHV De Beque Area (unspecified) Palisade Rim
	Extensive Recreation Management Areas (ERMAs)	North Desert Gateway Barrel Springs Horse Mountain

## 5.2 Prioritized Actions

1. Sign the “open” route network and limit signing the “closed” route network (in priority order).
2. Develop and publish up-to-date, readily available, and easy-to-understand maps.
3. Initiate enforcement and visitor service patrols with the objective of securing funding to sustain new visitor service patrols for a period of at least two years. Additional funding will be sought through BLM channels and through partnerships to leverage grants or other available funds.
4. Pursue funding and contractual obligations for highest priority survey work.
5. Pursue funding for route and site rehabilitation.
6. Rehabilitation
  - a. Areas with direct impacts to legally protected resources (federally listed plants, wildlife, fish, cultural, paleo)
    - i. De Beque Area (including Castle Rock, South Shale Ridge and Pyramid Rock)
    - ii. Whitewater
    - iii. Riparian zones
    - iv. Main road corridors
7. Install informational kiosks and signing where they would be most effective. Site these facilities where it would reach the greatest number of visitors and where it would target an audience that might be the most receptive to such facilities. For example such facilities might be most beneficial at major trailheads and campgrounds that are heavily visited by camping families and groups.
8. As enforcement efforts move into new areas, inappropriate use could migrate back to areas where it is not desired. Therefore, the enforcement strategy will need to be flexible and adaptive and may include education contacts by recreation staff and monitoring by volunteers to support the capacity of law enforcement.
9. Initiate monitoring plan.

## 5.3 Priorities for Site-specific Survey and Potential Analysis

### 5.3.1 New routes

1. New and existing routes paralleling and/or crossing stream channels supporting riparian communities. Typical survey work may include: collection of baseline morphologic data of stream channel, banks, and floodplain; site specific route information necessary to accurately input and run Water Erosion Prediction Program (WEPP) simulations, PFC evaluations and/or stream stability evaluations.
2. New/existing routes with multiple drainage crossings (specifically the ingress/regress to drainages) and/or routes which utilize dry washes as travel routes. Typical survey work may include: collection of baseline morphologic data of stream channel, banks, and floodplain; site specific route information necessary to accurately input and run WEPP simulations.
3. New/existing routes on mapped “Fragile soils”. Survey data would be required to confirm existing or proposed routes are on mapped “Fragile soils”.

### **5.3.2 Existing routes**

1. Existing routes to be upgraded (widened and/or type of use changed from existing).
2. Existing routes with an expected increase in motorized use.
3. Existing routes with an expected increase in mechanized use.
4. Existing routes with an expected increase in pedestrian/ horseback use.

## **5.4 Funding Strategy**

Operations funding for cultural surveys, land health assessments, wildlife surveys, transportation maintenance, and related costs will be determined on an ongoing project basis, and planned annually, subject to budget appropriations being available. BLM will strive to lower the costs through partnerships, in-house labor, and careful engineering.

Funds for labor, supplies and equipment will be pursued through the BLM budget process, and will be subject to appropriation of funds. Funding sources may include BLM Damaged Lands accounts, and grant monies available to non-profit groups. Funding will be pursued through Challenge Cost Share projects, an agency program that matches other funding sources, assistance agreements, or plans to leverage external contributions to the greatest extent possible. Grants from various sources will be pursued, including state, federal, and private funding sources. This may include the Federal Lands Transportation Program and Federal Land Access Program Routes for operating and maintaining roads that are for high use recreation sites and important economic generators. Appropriate agreements will need to be created.

## **5.5 Standard Operating Procedures**

The following standard operating procedures will be implemented during all phases of plan implementation.

### **5.5.1 General**

- A visitor access guide will be published and made available as full size hard copy maps for sale, smaller maps available for free and posted virtually on the internet.
- Appropriate NEPA analysis will be obtained prior to any ground disturbance not discussed in this plan, and impacts to cultural resources, or other resource values, that may be discovered will be mitigated or avoided.

### **5.5.2 Maintenance and Modifications to Route Network**

- Standards and guidelines will be developed for BLM road and primitive road maintenance, new construction, or reconstruction. The standards and guidelines for primitive roads will be based on the functional requirements of the various types of recreational motorized users. BLM will not develop, endorse, or publish road or trail ratings. BLM will simply describe the physical aspects of a route or recreation site, such as those which only accommodate technical vehicles.
- Maintenance standards for each designated route will be documented and route modifications will be identified and recommended, if necessary. Maintenance will be completed only to the identified maintenance intensity level in order to support resource and public protection.

- Maintenance of routes may be done to minimize soil erosion and other resource degradation. This maintenance will be done on a case-by-case basis, depending upon annual maintenance funding.
- Maintenance procedures for physical barriers will be developed, once the number and type of barriers is determined.
- Modifications of the road network during implementation of the TMP would require project level NEPA, such as the construction of a new route involving new ground disturbance, except where new construction is necessary to avoid a cultural resource site or sensitive species.
- Minor realignments of the route network that have already been analyzed may not require additional NEPA. The term “minor realignment” refers to a change of no more than one quarter (1/4) mile of one designated route. It could include the opening of an existing, but previously “closed” route that serves the same access need as the “open” route that is to be “realigned.” “Minor realignments” include the following:
  - Minor realignments of a route where necessary to minimize effects on cultural resources.
  - Minor realignments of a route necessary to reduce impact on sensitive species or their habitats.
  - Minor realignments of a route that would substantially increase the quality of a recreational experience, while not affecting sensitive species or their habitat, or any other sensitive resource value.
  - Minor realignment where valid ROWs or easements of record were not accurately identified in the route designation process.
  - Minor realignments must be documented in the TMP. The reason for the alignment change shall be recorded and kept on file in the GJFO.

## **5.6 Lands Actions**

### **5.6.1 Lands actions include the following:**

- Improve legal access to public land, where appropriate and necessary.
- Identify needs and request funding for motorized and non-motorized access, exchanges, and acquisitions and incorporate them in the existing ranking system.

### **5.6.2 Easements, ROWs, and Permissive access license agreements include:**

- Acquisition of road or trail easement or issuance of an ROW on an existing or historic physical access will be pursued only in areas where those actions will contribute to the protection of natural resources and not for the sole enhancement of recreation opportunity.
- Easements may be acquired through donation following the procedures set forth in BLM Manual 2100 - Acquisition.

## 5.7 Mitigation Measures

Best management practices such as, but not limited to, closures, relocations, drainage improvements, maintenance, hardening, change in motorized/non-motorized use, seeding, etc. shall be promptly implemented when monitoring or field reviews indicate such action is appropriate.

### 5.7.1 Soils and Hydrology

- a. Stream Crossings/Drainage Issues:
  - i. Improve drainage crossings by constructing bridges, installing culverts, or improving low-water crossings where necessary to minimize impacts to water resources. Utilize BLM manual handbooks 9113 (Roads Design) and 9115 (Primitive Roads Design) for guidance on placement, design (sizing), and construction of bridges, culverts, and low-water crossings.
  - ii. Follow guidance outlined in BLM manual handbooks 9113 (Roads Design) and 9115 (Primitive Roads Design) to address road drainage issues outside of stream crossings (e.g., installation and spacing of water bars and drain dips).
  - iii. Where possible, reduce the number of drainage crossings on a given route.
  - iv. Stream crossings should be designed to accommodate passage for aquatic species.
  - v. Limit expansion of road/trail prism at drainage crossings by controlling ingress and regress points. Use physical barriers where use would be practical to protect the resource and safe for users.
  - vi. Re-locate stream crossings if necessary to minimize impacts to water quality and stream channel morphology.
  - vii. Utilize all other appropriate standard operating procedures and best management practices (and others as approved) outlined in Appendix H of the GJFO-RMP/FEIS to protect soil and water resources.
- b. Route Placement and Evaluation:
  - i. Ensure use route designations, road type and maintenance levels are appropriate for the use. Follow guidance from BLM manual handbooks 9113 (Roads Design) and 9115 (Primitive Roads Design).
  - ii. Use BLM-GJFO Trail Design Criteria along with BLM Manual handbooks 9113-2 (Roads National Inventory & Condition Assessment Guidance & Instructions) and 9115-2 (Primitive Roads National Inventory & Condition Assessment Guidance & Instructions) to evaluate road conditions for maintenance and mitigation.
- c. Consider construction of flood-water retention basins and/or sediment retention basins within and downstream of Open areas, intensive motorized use areas, areas identified

as not meeting land health standards, or as necessary to protect public health and safety and private property. Such facilities would be subject to all applicable regulatory permitting requirements.

- d. For primitive routes or trails utilizing ephemeral drainages or crossing sensitive soils, provide educational information outlining resource/safety concerns and responsible use of such routes at trail heads, kiosks, area maps, and free pamphlets.

### **5.7.2 Cultural**

- a. The BLM GJFO will work with Colorado State Historic Preservation Office (SHPO) to develop agreements related to travel management and cultural resources which may include the use of strategic cultural resource survey sampling and modeling in portions of the GJFO. (See TMP Attachment 3)
- b. Prior to any ground disturbing activity cultural resource surveys, in compliance with Federal laws, would be completed and the appropriate entities, such as SHPO and interested Native American tribes, would be consulted with prior to the activity occurring.
- c. For trail and road construction projects and maintenance projects the BLM may choose one of the following options if significant (eligible or potentially eligible “needs data”) cultural resources are discovered or known in the area:
  - i. The BLM may choose to not perform construction or maintenance on areas that would directly impact sites,
  - ii. The BLM might reroute roads, primitive roads, and trails to avoid significant cultural resources on existing and proposed construction. These reroutes would require surveys for cultural resources and would have to allow for other resource specialists to analyze the locations of the reroutes,
  - iii. The BLM may choose to conduct evaluative testing to determine final eligibility on potentially eligible sites. The BLM would consult with SHPO on changes to site eligibility.
  - iv. Eligible sites may be mitigated via data recovery through excavation to reduce the effects of the trail and road maintenance, reclamation, and construction. Both SHPO and interested Native American tribes would be consulted prior to any proposed data recovery mitigation on significant cultural resources.

### **5.7.3 Sensitive Status Species**

- a. To prevent the seeding and spread of invasive, non-native species, BLM-approved seed mix will be used during reclamation activities, and seed mixtures shall contain no noxious, prohibited, or restricted weed seeds. Where soil disturbance will occur, all equipment will be required to be cleaned and inspected prior to use within the planning area. Public education and signs promoting the use of clean vehicles to prevent the spread of weeds, shall be included in entry kiosks and on literature.

- b. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat.
- c. Reduce as much as practicable route density (miles/square mile) within 200 meters of known Threatened and Endangered plant occurrences throughout the field office. If occurrences are identified in the future that conflict with route designations, implement reroutes.
- d. Reduce redundancies in routes to minimize habitat fragmentation, and minimize direct impacts to listed plant species habitat, and occupied habitat from motorized and mechanized users of roads, routes and trails. Identify mitigation where open routes are negatively effecting designated critical habitat.
- e. Limit new road construction in Reeder Mesa, Sunnyside, Logan Wash Mine, and South Shale Ridge, and designate new roads associated with authorized uses as administrative (e.g., oil and gas and ROWs). Rehabilitate and close roads associated with authorized uses when no longer needed.
- f. Existing plant location records will be consulted and site inventories will be conducted to identify suitable habitat<sub>1</sub> for these plants. Surveys for occupied suitable habitat will be performed prior to any ground disturbance. Surveys will take place when the plants can be positively identified. Surveys will be performed by qualified field botanists/biologists who will provide documentation of their qualifications, experience and knowledge of the species prior to starting work (**FWS-5**).
- g. For Colorado hookless cactus and other Threatened (T), Endangered (E), Proposed (P), and Candidate (C) species surface disturbing activities will be avoided within 200 meters of occupied plant habitat<sub>1</sub> wherever possible and where geography and other resource concerns allow<sub>2</sub>. Fragmentation of existing populations and identified areas of suitable habitat will be avoided wherever possible (**FWS-7**).
- h. For BLM sensitive species surface-disturbing activities will be avoided within 100 meters of occupied plant habitat<sub>1</sub> wherever possible and where geography and other resource concerns allow<sub>2</sub>. Fragmentation of existing populations and identified areas of suitable habitat will be avoided wherever possible (**FWS-8**).
- i. Where development is allowed within 100 meters of occupied habitat for T, E, P and C species or BLM sensitive species, unauthorized disturbance of plant habitat will be avoided by on-site guidance from a biologist, and by fencing the perimeter of the disturbed area, or such other method as agreed to by the Fish and Wildlife Service. If detrimental effects are detected through monitoring, corrective action will be taken through adaptive management (**FWS-9**).
- j. Surface disturbance closer than 20 meters to a listed plant will be considered an adverse effect. Mitigating measures within this narrow buffer are very important and helpful to individual plants, but we do not expect that all adverse effects can be fully mitigated within this distance. Some adverse effects due to dust, dust suppression, loss

of pollinator habitat, and toxic spills will likely remain. There are two possible exceptions to this rule of thumb: 1) The new disturbance is no closer to a listed plant than preexisting disturbance and no new or increased impacts to the listed plant are expected; or 2) the listed plant is screened from the proposed disturbance (e.g., tall, thick vegetation or a berm acts as a screen or effective barrier to fugitive dust and other potential impacts) (**FWS-10**).

- k. Transplantation of potentially affected plants will not be used as a rationale to defend a “not likely to adversely affect” or a “no effect” determination for listed plant species (**FWS-11**).

#### **5.7.4 Riparian**

- a. Road crossings that will be used for longer than one year on perennial streams will be engineered and/or approved by the BLM Authorized Officer (VRW-3).
- b. Do not locate roads or other facilities immediately parallel to streams. Where roads or facilities must cross streams, cross perpendicularly and immediately exit the buffer zone (VRW-4).
- c. Armor low water stream crossings, place properly sized culverts, or span streams as appropriate to protect the riparian zone (VRW-5).
- d. If monitoring or PFC assessments indicate impacts to PFC then then consider re-route of roads and trails that parallel and/or cross functioning at risk or non-functioning riparian areas, and that are contributing to decline (sedimentation) of these systems.
- e. Relocate existing roads away from riparian areas as feasible during requested permitting or authorization of these routes. Reclaim abandoned portions of relocated roads back to natural conditions. Recontour routes back to natural slopes as feasible, rip compacted soils (except for in close proximity to desirable trees), and seed disturbed areas (VRW-24).
- f. Utilize the techniques and process for protection of floodplains as identified in Executive Order 11988 – Floodplain Management (VRW-2).
- g. Roads and trails (off-highway vehicle, horse, bicycle, and hiking) will avoid wetlands and if avoidance is not possible will be designed and constructed in accordance with Technical Reference 2E22A68-NPS, Off-highway Vehicle Management (VRW-8).
- h. Minimize route crossing of streams (intermittent and perennial) and wetlands.
- i. Maintain appropriate vegetative/riparian buffer from routes of at least 200 meters around riparian and wetland areas to protect and enhance the health and function of these systems.
- j. Locate project staging areas for refueling, maintenance equipment, materials, operating supplies in areas outside of riparian and wetland areas.
- k. Reclaim abandoned routes after completing re-route of roads and trails that are impaction riparian function. Follow general reclamation guidance with special reclamation procedures for stream crossings (see hydrology section).

### **5.7.5 Recreation**

- a. Whenever possible, complete trail reroutes or route system additions/modifications prior to closure of non-system routes. Creating viable alternatives to closed routes reduces the impact to recreation opportunities and outcomes.
- b. Utilize all other appropriate standard operating procedures and best management practices (and others as approved) outlined in Appendix H of the GJFO-RMP/FEIS to protect and enhance recreation resources. Applicable Recreation BMPs from Appendix H include:
  - a. Utilize current GJFO “Trail Development Process” and “Trail Design Criteria” guidance (see Attachment 1 to this TMP) to create and maintain a sustainable recreational route system that helps achieve recreation and other resource use objectives while protecting natural and cultural resources. (BLM 2014 and 2005).
  - b. Reroute or close trails that create resource damage and/or trespass on private property.
  - c. Promote the seven standard principles of Leave No Trace ([www.lnt.org](http://www.lnt.org)) outdoor ethics through print and electronic media, and through personal communications with recreationists participating in non-motorized recreation activities on BLM-managed public lands.
  - d. Promote the principles of Tread Lightly ([www.treadlightly.org](http://www.treadlightly.org)) outdoor ethics through print and electronic media, and through personal communications with recreationists participating in recreation activities on BLM-managed public lands.
- c. Hand raking and disguise of prominent “closed” routes, including planting commonly found plants on “closed” routes, will be employed to help discourage use.
- d. Proactive route rehabilitation work would be utilized where the other actions have not proven to be successful, or where route conditions were clearly beyond the capability of the first phase to address.
- e. Focus on signing of the open route network so that it is highly visible, thus discouraging interest in closed routes. The signing of closed routes will be done very infrequently, since they have been found to be more of an attractant than a deterrent to unauthorized use.

### **5.8 Adaptive management**

Adaptive management will be based on monitoring standards and identified resource concerns.

For example: If resource degradation is found through monitoring to be occurring due to type of use on route, consider changing use on route to mitigate concern.

### **5.9 Supplementary Rules**

Supplementary rules will need to be established for those areas identified in an

RMP/TMP where non-motorized access is limited to designated routes or some other limitations on use. See 43 CFR 8365.1-6 for the supplementary rulemaking process.

## *Attachments*

## *Sign Plan*

### **Area and Route Signing**

A sign plan is necessary to ensure that signs placed in an area are consistent with land use and other planning documents; that they are designed to be consistent with all applicable laws, regulations, and policies; and that all signs adhere to a consistent theme. A sign plan should include the goals, objectives, and responsibilities for the placement of signs, as well as an inventory of existing signs and may include a process for designing/locating new signs.

BLM Sign Guidebook covers location and placement, along with speed of travel in Chapter 4, Design Standards. Colorado Inter-Agency Travel Management Sign Standards have been developed and will be used in signing for the GJFO. (See TMP Attachment 2)

### **Sign Types**

There are several types of signs that states should consider when developing state sign policy and implementing TMPs. Efforts should include identification and information signs at trailheads and entrances, and along trails, roads, primitive roads, intersections, authorized, and closed areas.

#### ***Trail Signs***

There are two types of trail signs, allocation signs, and reassurance markers. Allocation signs show the permitted and not permitted uses of the trail. These signs are used at trailheads, where a trail begins, intersections, or anywhere there is a change in use type. Reassurance markers provided markers so trail users know they are still on the right trail. For example, symbols could be an arrow or the trail logo.

#### ***Road Signs***

Road signs apply to signage for linear routes managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use. The Manual on Uniform Traffic Control Devices standards apply to these roads. There are cases where some roads will be open to unlicensed OHVs. Signs for these roads are marked in a manner that notifies or warns the public of mixed uses.

#### ***Primitive Road Signs***

Primitive road signs apply to signage for linear routes managed for use by four-wheel drive or high-clearance vehicles. These routes do not normally meet any BLM road design standards.

#### ***Other Types of Signs***

Trailhead or entry signs apply to signs used at entry to trails or access points to public lands. These signs are used to notify the public of the travel management strategy or designation of the area they are entering, such as “areas limited to designated routes,” “areas limited to exiting routes,” or “open areas.”

## **Sign Placement**

Travel management signing and allocation information need not be on every trail sign along the trail corridor. Travel management signs should be placed at the trailhead and at trail junctions where travel management is changing or needs reinforcement.

## ***Education Plan***

An improved public outreach program will be initiated to instill and strengthen a more effective and responsible resource use ethic. For mapping and signing efforts, particularly at information kiosks, the GJFO will develop appropriate resource information and education. Legal penalties language will be included in all handouts, maps, and kiosks.

The BLM will work with cooperating associations and community groups to better distribute interpretive materials. In order to achieve outreach and education objectives, it is imperative to create sustainable partnerships with private groups and governmental organizations.

Established educational efforts related to trail use will be promoted, including Stay the Trail, Leave No Trace, and Tread Lightly.

### **Targeted Methods of Communication**

- Podcasts: with downloadable items such as maps, land use ethics, rules, air quality alerts, fire prevention restrictions, emergency announcements, etc.
- Electronic Kiosks: downloadable items such trail track logs, audio storytelling for cultural, historic, natural interpretative information
- Web Video & Focus Surveys: interactive sites for user info and feedback to BLM
- Web site: updated regularly and designed to give viewers something new each time they view the page, including GIS data posted to the BLM website for self-service data acquisition.
- Public Service Announcements: via radio, newspaper, TV, etc.
- Traditional Brochures and Guides

## ***Enforcement Plan***

Currently, law enforcement coverage is provided by BLM Rangers. Enforcement actions are typically in response to complaints, and patrols are conducted on a periodic basis depending on priorities throughout the GJFO. Partnerships with local businesses and organizations will be encouraged to promote safe and responsible use of public lands. Volunteer groups may assist with monitoring, public education, and special events.

Goals for a successful enforcement plan include:

- Increasing the presence of BLM law enforcement staff and BLM law enforcement in the area. BLM park rangers will conduct high profile, routine patrols in the area to educate users about laws and regulations. They may initiate emergency or law enforcement response simply by being first on-scene;
- Improving and expanding interagency cooperation in the area;
- Concentrating efforts on high use periods, such as weekends and holidays;
- Focusing targeted enforcement in “hot spots;”
- Increasing enforcement capacity, including the use of new technology;
- Supporting volunteer efforts to educate the public on rules and etiquette; and
- Encouraging educational and monitoring efforts by volunteer user groups and citizen-based education groups, which can leverage formal law enforcement efforts. Volunteer user groups will educate users on rules and etiquette for the area.

## ***Rehabilitation Plan***

As determined as necessary, Rehabilitation actions will be determined according to the following considerations:

1. Where route use is currently visible -
  - a. Sign as closed and allow to naturally re-vegetate, or
  - b. Sign as closed and reclaim through appropriate reclamation methods, use native seed blend as a priority (assure that proper site specific survey has been complete), or
  - c. Sign route as closed, place a berm or other barrier and leave to natural re-vegetation.
  - d. Barriers will be placed in areas deemed necessary.
  - e. Sign route as closed and reclaim the portion that is visible from open routes, and allow the rest to reclaim naturally.
  - f. Sign route as closed and reclaim the entire route.
2. Where route use is not currently visible and appears to be naturally reclaiming -
  - a. Leave route to natural re-vegetation
  - b. Sign route as closed and leave to naturally reclaim.
3. Resource concerns (hydrology, cultural, etc.) are present and correlated with the disturbance, choose from the following options
  - a. Sign route as closed, place a berm or other barrier and leave to natural re-vegetation.
  - b. Barriers will be placed in areas deemed necessary.
  - c. Sign route as closed and reclaim the portion that is visible from open routes, and allow the rest to reclaim naturally.
  - d. Sign route as closed and reclaim the entire route.

### **Reclamation Standards**

The following reclamation standards will be followed:

- a. Routes identified for closure will not alter natural hydrologic function and condition of the affected watershed (e.g., closed routes will not divert runoff from natural drainage patterns).
- b. Disturbed areas will be fully re-contoured and re-vegetated with BLM-preferred seed mixtures.
- c. Seeding will be done where necessary to aid rehabilitation of closed routes. Appropriate native seed mixtures will be selected for each site based on site conditions. Reclamation techniques include ripping the surface with a tractor to break up compacted soil and allow rain retention. Broadcast seeding will be done prior to winter. Some areas will be fenced to prevent disturbance and allow for grazing rest during the first two growing seasons. This technique is typically used near main roads where camping or parking may occur.

- d. BLM will utilize native material such as rock and large woody debris to the greatest extent practicable in combination with manufactured stormwater structures (e.g., silt fence and straw wattles), and mechanical erosion control techniques (e.g., ripping and pocking) to minimize erosion and facilitate site stability.
- e. Reclamation techniques for routes in Wilderness, Wilderness Study Areas, and Lands with Wilderness Characteristics will be specifically planned to return the area to its original condition in the shortest amount of time.
- f. Weed and vegetation treatment control measures will be implemented as needed to promote re-vegetation with native plants, prevent any new weed establishment, and control of existing weed sources.

### **Reclamation/Rehabilitation Techniques and Rationale for Selection**

Reclamation/Rehabilitation actions will be undertaken according to the methods described below. Options are presented below in order of lowest to greatest level of ground disturbance, and are categorized between manual and mechanical techniques. Manual techniques can be implemented with basic hand tools while mechanical techniques require the use of mechanized or motorized equipment.

#### **Manual Techniques:**

- **Passive:** Allow the route to naturally reclaim without any signing, ground disturbance, or replanting of vegetation. This method is proposed in lightly used areas and on routes where restoration is already occurring. The goal is to avoid attracting attention by not signing or fencing these lightly used routes. This is the least obvious method of closure, least costly to BLM, and provides a high degree of naturalness when successfully implemented.
- **Sign only:** This method applies mainly to upland routes in lightly used areas and is proposed on routes in lightly used areas and/or in areas where compliance with signage is expected to be good. The signage can be removed to complete the rehabilitation process.
- **Hand rake out tracks only:** This applies mainly to sand washes where erasing the evidence of use in lightly used areas may be enough to prevent attracting future use. This is very light on the land and provides a high degree of naturalness when done. The goal is to avoid attracting attention, and thus use, on these lightly used routes. Monitoring and raking is required to ensure effectiveness and may be required for up to one year.
- **Rake out tracks and sign:** This method applies mainly to sand washes in lightly used areas. A sign reinforces the closure by placing physical notice for visitors and to assist law enforcement. This method is low cost to BLM and provides a moderate degree of naturalness when done. A downside to this method is the potentially high number of closed signs that can accumulate in a given area and the perception that many routes are being closed, leading to vandalism. Monitoring is required to ensure effectiveness. Signage can be removed to complete the rehabilitation process.

- Fence and sign/fence only: This method applies to both upland and dry wash routes. This type of closure has little ground disturbance and is used in areas where fence cutting would be expected to be minimal. Generally, the fence type would be T-post and four strand smooth wires with reflectors; however, the fence type could be increased to pipe rail/steel rail as needed while still maintaining a small footprint at the beginning or end of the route. Fencing and signs can be removed to complete the rehabilitation process.
- Vertical mulch with berm/fence and sign: This method works in upland areas where occasional use of the route in lightly used areas prevents natural restoration. A sign provides physical notice and assistance to law enforcement. A T-post and four strand smooth wire fence works best when the fence is placed in an area where bypassing it is difficult. Combined with a sign and/or fencing, actively placing cuttings of cactus, transplanted bushes, and scattering juniper duff in the wheel tracks may be enough to prevent use. Placement of plants in the closed route to the visible horizon minimizes cost and ground disturbance. Native seed mixtures may also be applied to enhance the effectiveness of rehabilitation.
- Barriers (fences, brush, plants, and boulders): Physical blockades constructed to prevent the passage of vehicles. The only manual type of fencing would be wire fencing.

#### Mechanical Techniques:

- Berm with signs: This method would be applied in upland areas where a berm cannot be bypassed. This type of closure has less ground disturbance since soil is only moved to create a berm at the beginning or end of the closed route. Signage provides physical notice to visitors and assistance to law enforcement. The berm stands as an indicator of closure if the sign is removed, providing additional notice to visitors. After the route has restored, berms can be removed or flattened to complete the rehabilitation process.
- Rip/harrow: A more expensive, but effective way to eliminate route use and expedite vegetation regrowth. These techniques are necessary in high use areas where use is likely to continue on a route if not made completely obvious that the route is being restored. One hundred percent of the closed route surface is disturbed by this method. A tractor-towed disc harrow or a finger-type winged ripper mounted on a tractor or bulldozer would be the typical equipment used. Benefits include reduced soil compaction and improved seed germination and establishment. Drawbacks to these methods are: (1) significant plant growth (20% cover) may take up to five years; (2) no regrowth may occur if barriers are bypassed and use continues on the ripped road bed; (3) the complete removal of existing vegetation resulting in a temporarily prominent disturbed area; (5) increased likelihood of invasive weed infestation, and (5) possible disturbance of undiscovered buried cultural resources. Under this method, soils would be ripped or harrowed to a depth of 18 – 24 inches. Preferably compacted soils will be ripped in two passes at

perpendicular directions to a minimum depth of 18-24 inches, at a furrow spacing of no more than 2 feet.

- **Barriers:** Physical blockades constructed to prevent the passage of vehicles. Types can be earthen mounds, wire fence, pipe rail fence, post and cable fence, concrete wall sections (also referred to as Jersey or K-rail barriers), or free standing steel structures commonly referred to as Normandy barriers.

### **Programmatic Objectives/Considerations – Reclamation/Rehabilitation Standards**

The following reclamation/rehabilitation principles will be considered when determining the most effective reclamation/rehabilitation strategy:

- a. Routes identified for closure will not alter natural hydrologic function and condition of the affected watershed (e.g., closed routes will not divert runoff from natural drainage patterns).
- b. Where appropriate to meet visual, hydrologic, and soil objectives, disturbed areas would be fully re-contoured and re-vegetated with BLM-preferred seed mixtures.
- c. Seeding will be done where necessary to aid rehabilitation of closed routes. Areas reclaimed with ground disturbing activities such as raking, berming, ripping, and harrowing would likely require seeding following disturbance, especially in low elevation areas (below 6,000 feet), or in areas with weed infestations. Appropriate native seed mixtures will be selected for each site based on site conditions. Reclamation techniques include ripping the surface with a tractor to break up compacted soil and allow rain retention. Before reseeding, all surfaces should be scarified and left rough. If more than one season has elapsed between final seedbed preparation and seeding, and if the area is to be broadcast-seeded or hydroseeded, this step should be repeated within 24 hours before seeding to break up any soil crust. Broadcast seeding will be done prior to winter. Some areas will be fenced to prevent disturbance and allow for grazing rest during the first two growing seasons. This technique is typically used near main roads where camping or parking may occur. In areas of challenge or low reclamation potential on steep slopes, seedbed prep techniques may include pocking/pitting to form microbasins scaled to the site and materials. These microbasins should be constructed in irregularly spaced, irregularly aligned rows oriented perpendicular to the natural flow of runoff down a slope. Other than such depressions created to support reclamation success, no depressions should be left where water could pond, with the following exceptions: terminal stormwater containments designed to silt in over time; other stormwater/snow storage basins. BMPs such as hydromulch, blankets/matting, wattles, etc. may also be required.
- d. BLM will utilize native material such as rock and large woody debris to the greatest extent practicable in combination with manufactured stormwater structures (e.g., silt

fence and straw wattles), and mechanical erosion control techniques (e.g., ripping and pocking) to minimize erosion and facilitate site stability.

- e. Reclamation techniques for routes in Wilderness, Wilderness Study Areas, and Lands with Wilderness Characteristics will be specifically planned to return the area to its original condition in the shortest amount of time.

### **Weed Management Considerations**

- All heavy equipment used for reclamation work should be cleaned prior to use to reduce the potential for introduction of noxious weeds or other undesirable non-native species.
- Evaluate the need for pre-closure roadside treatments to target invasive species in the roadbed or along the shoulders of roads.
- As needed, implement weed control measures on re-seeded routes to promote survivability and competition by seeded species.
- Prioritize reclamation weed treatments based on likelihood of success, available funding, and available treatment resources.
- Plant species that are good competitors against weeds (native or non-native).

### **Vegetative Community Considerations**

- Lower elevation sagebrush
- Upper elevation sagebrush
- Desert shrub
- Pinyon
- Potentially rest or protect treated areas from grazing (example: temporarily fence seeded area)

### **Wildlife Habitat Considerations**

For some wildlife species simply closing routes and reducing disturbance is sufficient to minimize impacts. For other species the physical presence of the route limits use by fragmenting habitat patches and creating edge effect which may encourage use by competing species or predators.

Rehabilitation efforts should be prioritized base on the sensitivity of species to the physical presence of the road, and the overall rarity of the species. The following priorities are expected in the short term, but may change over the life of the plan

- Occupied greater or Gunnison sage-grouse habitat
- Potential greater or Gunnison sage-grouse habitat
- Routes within designated critical habitat for federally listed species
- Routes within habitat for BLM sensitive species
- Routes that are unlikely to reclaim and return to usable habitat without human intervention

## Aquatic Considerations

Simply closing routes does not necessarily reduce erosion and sedimentation impacts to aquatic habitats/species. In the absence of active rehabilitation, several factors play into closures benefitting aquatic habitats including:

- *Elevation*
  - Higher elevation areas generally have better natural rehabilitation capability based primarily on increased precipitation. Lower elevation areas are less likely to rehabilitate on their own and in the absence of active rehabilitation, might be prone to increased erosion/sedimentation vs. being left open with at least some potential for periodic maintenance.
- *Aspect*
  - North aspects generally have better natural rehabilitation capability based on moisture retention.
  - South facing aspects generally have less potential based on moisture retention.
- *Slope*
  - Slopes less than 30% have a better chance for natural rehabilitation.
  - Slopes greater than 30% have less chance for natural rehabilitation.
- *Proximity to drainage/stream*
  - Distance to aquatic habitats factors into erosion and sedimentation impacts and concerns - the further the route is away from drainages, the less impactful it is likely to be.
- *Upland and Riparian Vegetation Condition*
  - Upland vegetation located between routes and hydrologic features that are meeting Land Health Standards and are in good condition serve to help buffer erosion and sedimentation impacts.
  - Riparian vegetation that is meeting Proper Functioning Condition or preferably is in climax or late seral condition provides a buffer to the impacts of erosion and sedimentation associated with routes.
  - Otherwise, some level of rehabilitation to help reduce or eliminate erosion and sedimentation concerns is needed to really benefit aquatic species and habitats associated with the closure of routes.
  - Proper periodic maintenance is key to reducing the effects of erosion and sedimentation to aquatic habitats/species

## Recreation Considerations

Effective reclamation of closed routes is important for meeting a variety of recreation management objectives, including:

- attainment and maintenance of physical and social settings that support prescribed recreation activities and outcomes in ERMAs and SRMAs;
- reduction of visitor confusion resulting from un-marked non-system routes;
- increased visitor safety through reclamation of unsafe non-system routes; and
- reduced sign installation and maintenance costs associated with un-rehabilitated closed routes.

In general, route closures for recreation are most effective when the designated route system provides the desired recreation activity and outcome opportunities, and closed routes are completely naturalized to eliminate the visual remnants of the former route. Therefore, route closures will be most effective when any route system redesigns or reroutes are completed prior to implementation of route rehabilitation efforts. Whenever possible, closed routes should be naturalized on all portions of the route visible from designated system routes. This reduces the need for signage, and the temptation for recreationists to use former routes. Naturalization of closed routes also enhances the naturalness component of an area's physical setting characteristics, which can be important in attainment of recreation outcomes in SRMAs.

While naturalization of closed routes is generally preferred, the full suite of route closure options should be considered to account for the variability of terrain and circumstances throughout the field office.

Prioritize rehabilitation in SRMAs and ERMAs.

### **Cultural Considerations**

Standards:

- Rehabilitation of closed routes will only occur after Section 106 of the National Historic Preservation Act has been completed for the portions of the route where surface disturbing rehabilitation methods will be employed (versus portions of routes where natural re-vegetation will be allowed).
- In accordance with the rehabilitation options, cultural resource surveys will be conducted for the following:
  - At least 500 ft. of the length of the road (or section to be rehabilitated) will be inventoried where closure actions follow numbers 4, 5, and/or 7 of the rehabilitation actions.
  - Cultural inventories will be completed for closure sign posting locations.
  - Cultural resource surveys will be conducted for reclamation of an entire road when ground disturbing methods for reclamation will be used.
  - Before new proposed routes, open areas, and locations where concentrated travel may occur are designated, the Section 106 process will be completed.
- Areas for cultural resource inventory should be prioritized based on the proposed rehabilitation method; areas proposed for ground disturbing methods should be surveyed as a higher priority than areas where rehabilitation will not affect subsurface deposits.
- Routes that are planned for closure and qualify as eligible or potentially eligible historic trails should be rehabilitated in such a way as to not diminish the integrity of the resource.

Priorities:

1. Rehabilitate designated as closed routes that are directly and adversely impacting known eligible and potentially eligible cultural resources (route in or through site, site proximate to route, route terminus at site, area of Tribal significance, site on National Register of Historic Places, or historic trail).

2. Rehabilitate designated as closed routes that are indirectly impacting known eligible and potentially eligible cultural resources (site proximate to route, visible or nuisance sites, or area of Tribal significance).

### **Riparian Considerations**

Reclaim abandoned portions of relocated roads that pass through or are adjacent to riparian zones back to natural conditions. Recontour routes back to natural slopes as feasible, rip compacted soils (except for in close proximity to desirable trees), and seed disturbed areas (VRW-24).

During reclamation activities locate project staging areas for refueling, materials, and operating supplies outside of riparian and wetland areas. Also minimize surface disturbance and vegetation removal and avoid damage or removal of large woody vegetation such as willows and cottonwoods.

Route closure fences should not be placed immediately on the edge of riparian areas. Place fences away from riparian or wetland areas and cross streams as close to perpendicular as possible.

## ***Monitoring Plan***

As required in 43 CFR §8342.3 (Designation changes): "The authorized officer shall monitor effects of the use of off-road vehicles. On the basis of information so obtained, and whenever the authorized officer deems it necessary to carry out the objectives of this part, designations may be amended, revised, revoked, or other actions taken pursuant to the regulations in this part."

A monitoring plan would be prepared and would include the measures for route closures and rehabilitation of impacted areas, levels, and types of uses. Natural resource conditions, such as soil erosion, spread of noxious weeds, and impacts to vegetation, would be monitored.

The success of the GJFO TMP is best determined through monitoring and evaluation. BLM will develop and implement a monitoring and evaluation program for the area. It will be designed to identify and address emerging issues that may adversely impact resources or visitor experience. The monitoring data will be used to evaluate implementation progress and the effectiveness of the TMP in achieving desired outcomes and conditions, and to identify adaptive measures should adverse impacts be discovered. The monitoring effort will identify specific actions, including timeframes, methods, and anticipated resource needs for environmental monitoring.

Consider seasons of use when monitoring.

The evaluation and monitoring program will be used for the following:

- To determine if resource and resource use objectives are being met;
- To determine visitor satisfaction;
- To determine use patterns and volumes;
- To determine the condition of roads and trails, the condition of public use areas, and compliance with planned designations and use restrictions; and
- To determine efficacy of cross-jurisdictional enforcement.

Limits of Acceptable Change indicators, or triggers, requiring adjustments to this management plan are as follows:

- Desired recreation experiences over a five year period are not being met as determined by surveys, visitor sign-in logs, or other data-gathering processes conducted in the planning area;
- Unauthorized routes, whether created by motor vehicle or non-motorized means, cannot be rehabilitated at the same rate as their creation with available funding or personnel;
- Priority or Special Status species habitat conditions are in a downward trend over a five year period, and it is determined to be a result of recreation or travel impacts;

- Riparian condition trend is not improving over a five-year period, and it is determined to be a result of recreation or travel impacts; and
- Visitor safety and assumed risk for non-shooters is determined by BLM to be unacceptable as determined by data collection and surveys conducted in the planning area.
- Riparian condition trend is not improving over a five-year period, and it is determined to be a result of recreation or travel impacts; and
- Visitor safety and assumed risk for non-shooters is determined by BLM to be unacceptable as determined by data collection and surveys conducted in the planning area.

Some features of the monitoring plan will include:

- BLM employees and volunteers will be trained in the use of monitoring tools (e.g., monitoring forms, mobile digital devices, GPS units, and cameras) and protocols necessary for the collection and documentation of needed monitoring data.
- Photo-monitoring points will be established in key locations to monitor implementation actions and their effectiveness. For example, photo points can be established to monitor where cross-country travel has occurred, activity on “closed” routes has occurred, success of rehabilitation projects, extent of erosion mitigation areas as well as areas of good road quality for future reference. Photo monitoring points will be documented using GPS, and a monitoring schedule will be established;
- The monitoring data collected will be used to assess the effectiveness of the plan and associated implementation actions;
- “Closed” routes would be monitored for indications of use, rehabilitated routes will be monitored to determine effectiveness of seeding and water drainage, and sign conditions will be monitored within the planning area. Modifications to the plan would be considered if monitoring indicates that the goals and objectives are not being met;
- Visitor use data will be collected, compiled and analyzed to determine representative use patterns and trends on routes throughout the GJFO. Visitor use data will be collected primarily through the use of electronic traffic counters placed along routes or at primary access points.
- Recreation demand and preference data will be assessed through visitor surveys as funding and staffing allow;
- Upland health assessments will be conducted as warranted;
- Riparian health assessments will be conducted every 3 to 5 years;
- To maintain simplicity, hard copy binders backed up with digital data will be created and stored for a period of ten consecutive years. After ten years, only select photos and data will be retained for long term monitoring; and

- Management changes may occur based on monitoring or related data. Several different kinds of limitations, including vehicle numbers, types, use times or seasons, permitted use, designated routes, and other limitations necessary to meet land use plan objectives, may be implemented as necessary. The public would be notified of such changes.

## ***Engineering Plan***

Transportation system roads and trails are classified by maintenance levels specified in BLM Manual Handbook H-9113-2.

BLM Route Maintenance Intensities provide guidance for appropriate “standards of care” to recognized routes within the BLM. Recognized Routes by definition include Roads, Primitive Roads, and Trails carried as assets within the BLM Facility Asset Management System (FAMS).

### **Facility Asset Management System**

All roads, trails and related facilities and infrastructure will be entered into the FAMS. FAMS is a tabular engineering database that does not have a spatial component, but the attribute fields for BLM Roads in GJFO will be linked to attribute data stored in FAMS similar to the way it had been linked to Facility Information Management System data in the past.

### **Condition Assessments**

Condition assessments will be conducted for roads and trails in the planning area on a priority basis and in accordance with standards and guidelines currently described in IB-2000-005, *Road and Trail Condition Assessments*. The results of these assessments will be reviewed by the state engineering staff and, if approved, will be used to update the FAMS database. These updates will be linked to the appropriate data in GIS.

### **Routes Defined**

BLM transportation guidance provides definitions for transportation routes, including roads, primitive roads, and trails, and the maintenance intensity classes for transportation assets. These definitions are used in the Grand Junction TMP.

- a. Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.
- b. Primitive Road: A linear route managed for use by four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standards.
- c. Trail: A linear route managed for human-powered, stock, or OHV forms of transportation, or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

### **Functional Class**

Functional classes indicate the relative importance of a route’s transportation and access functions, and are the basis for geometric design standards and maintenance guidelines. The functional classifications are determined according to guidance in *BLM Manual 9113 Roads*. Functional class is defined by collector roads, local roads, and resource roads.

Collector Roads are the highest standard of BLM road. They provide primary access to large blocks of land and connect with or are extensions of a public road system. Collector roads accommodate mixed traffic and serve many uses. They generally receive the highest volume

of traffic within the BLM road system. User cost, safety, comfort, and travel time are primary road management considerations. Collector roads usually require application of the highest standards used by BLM. As a result, they have the potential for creating substantial environmental impacts and often require complex mitigation procedures.

Local Roads normally serve a smaller area than collector roads and connect to collector roads or public road systems. Local roads receive lower volumes, carry fewer traffic types, and generally serve fewer users. User cost, comfort, and travel time are secondary to construction and maintenance cost considerations. Low volume local roads in mountainous terrain, where operating speed is reduced by effort of terrain, may be single land roads with turnouts.

Resource Roads are usually spur roads that provide point access and connect to local or collector roads. They carry very low volume and accommodate only one or two types of uses. Use restrictions are applied to prevent negative interactions between users needing the road and users attracted to the road. The location and design of these roads are governed by environmental compatibility and minimizing BLM costs, with minimal consideration for user cost, comfort, or travel time.

Most of the routes in the planning area are designated as Resource Roads, unpaved, single lane, with very low traffic volume (Average Daily Traffic  $\leq 150$  vehicle passes) and very low traffic speeds.

### **Maintenance Intensities**

- Maintenance Intensities provide consistent objectives and standards for the care and maintenance of BLM routes according to identified management objectives. Maintenance Intensities are consistent with land-use planning management objectives (for example, natural, cultural, recreation setting and visual).
- Maintenance Intensities provide operational guidance to field personnel on the appropriate intensity, frequency, and type of maintenance activities that should be undertaken to keep the route in acceptable condition and provide guidance for the minimum standards of care for the annual maintenance of a route.
- Maintenance Intensities do not describe route geometry, types of route, types of use, or other physical or managerial characteristics of the route. Those items are addressed as other descriptive attributes to a route.
- Maintenance Intensities provide a range of objectives and standards, from “identification for removal” through frequent and intensive maintenance.
- Level 0 routes are existing routes that will no longer be maintained and no longer be declared a route. Routes identified as Level 0 are identified for removal from the transportation system entirely.
- Level 1 routes require minimum, low intensity maintenance to protect adjacent lands and resource values. These roads may be impassable for extended periods of time.
- Level 3 routes require more moderate maintenance due to low volume use, such as seasonal or year-round for commercial, recreation, or administrative access. Maintenance Intensities may not provide year-round access but are intended to provide resources appropriate to maintain a usable route for most of the year.

- Level 5 routes require high, maximum intensity maintenance due to year-round needs, high-volume traffic, or significant use. The Level 5 designation may also include routes identified through management objectives as requiring high intensities of maintenance or to be maintained and kept open on a year-round basis.
- The proposed maintenance intensity class will be developed for each route in the planning area. These will provide the basis for updating the FAMS database for the project area. Under BLM policy, transportation maintenance and repairs may be conducted on BLM routes on a case by case basis depending on need and following NEPA analysis.

## ***Zone L (North Desert) Route Designation Considerations***

Zone L (North Desert) proved to be one of the most challenging zones to consider, both for the BLM and for the public, due to its route density. Through public comment and further interdisciplinary consideration, the BLM determined that a different process was needed to make effective planning decisions for this zone.

Following completion of the rest of the TMP, the BLM will undertake a specific planning process for this area and will allow the use of existing routes within the boundary of this zone until individual routes are designated within this area.

Maps will be made available that show the network of existing routes. These maps will be updated on a yearly basis until the designation process is completed. Thereafter, updates to the maps will be made available online as changes are made to the network, and new maps will be published periodically, as needed.

### **Designation Process:**

Routes will be designated on the ground with the assistance of user groups once thresholds for sensitive resource values (soils, wildlife, special status plants) have been determined, after any necessary NEPA process has been completed. The following steps will need to be completed in order to move forward with route designations:

1. Highlight key avoidance areas or areas where route reductions in density would be necessary in order to move toward achieving biologic, ecologic, and cultural resource objectives.
  - a. Close routes directly impacting sensitive areas.
2. Break Zone L into sub-zones and collect representative hill-slope and road erosion rates to run RHEM and WEPP models or similar model if technology improves (note that routes eliminated through step 1 would be included in this effort unless they were reclaimed prior to designation).
  - a. Identify sub-zones needing route reductions based on modeling results.
  - b. Identify zones where it would be appropriate for new routes to be added if other resource values and recreation objectives could also be achieved.
3. Inform user groups of the process for route designation and key resources that need to be protected (biology, soil, water, archaeology, and recreation experience).
  - a. Work with user groups to identify user needs and prioritize routes in Zone L.
  - b. Routes eliminated through step 1 would not be available routes for prioritization.
4. Priority routes identified by user groups that meet recreation objectives and do not conflict with resource values, and meet minimum BLM requirements for intended use would be designated.
  - a. Maintenance on routes would be prioritized based on the intensity of degradation resulting from the route and by user group priority ranking.

Reclamation work for non-sustainable routes designated for closure would also be prioritized based on the intensity of degradation and to reduce confusion with open routes. Table 1, Route Designations in Miles by Alternative, summarizes the proposed route designations for motorized, Bicycle, horse, and foot travel by alternative. Detailed travel management zone maps that display each route's proposed designation by alternative are provided at <http://www.blm.gov/co/st/en/fo/gjfo/rmp/rmp.html>.

### **Additional Objectives to be used for Route Designation in Zone L**

1. Meet Public Land Health Standards 1, 2, 3, 4, and 5
  - a. Standard 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.
  - b. Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.
  - c. Standard 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential.
  - d. Standard 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.
  - e. Standard 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.
2. Water
  - a. Manage to maintain or contribute to long term improvement of surface and groundwater quality.
  - b. Promote geomorphic balance.
  - c. Minimize salt and sediment production to "natural" background rates.
  - d. Preserve/promote soil productivity.
  - e. Preserve watershed function in capture, retention, and release of water in quality, quantity, and time to meet ecosystem and human needs.
3. Wildlife and Plants
  - a. Within Mule Deer Severe Winter Range and Pronghorn Antelope Winter Concentration area, reduce route density to less than or equal to 2 miles of road per square mile.
  - b. Ensure that Public Land Health Standards 3 for plant and animal communities, and 4 for Special Status and Threatened & Endangered species, are being met or moving towards meeting Standards.
4. Cultural
  - a. To minimize ongoing or potential impacts to cultural sites that are eligible or potentially eligible for listing on the National Register of Historic Places (NRHP), close and/or re-route routes that are inside or pass through eligible or potentially eligible cultural sites, or identify mitigation necessary to protect sites
  - b. To minimize the potential for vandalism or surface collection, reduce number of routes in proximity to known cultural sites, minimize impacts to site integrity of setting and feeling.

- c. To minimize the potential for impacts to sites, reduce density of routes in areas known to be of high expected cultural resource density or areas of high value to the cultural program or Tribes
  - d. Use VRM and recreation (or management) objectives to minimize impacts to site integrity (maintaining the visual, audible, and setting characteristics of sites
  - e. To minimize ongoing or potential impacts to historic trails identified as eligible or potentially eligible for listing on the NRHP, identify mitigation to protect the historic integrity of routes, if necessary.
5. Recreation
- a. Provide visitors with opportunities to participate in motorized OHV recreation (motorcycle, ATV, UTV, full-sized 4x4 vehicles) on a variety routes designated for different motorized uses (e.g., motorcycle, ATV/UTV, and full-size vehicles) that link the desert terrain on the north side of the Grand Valley from Grand Junction and Fruita to Rabbit Valley and the Utah Rims trails and provide multiple long-distance motorized loop opportunities.
  - b. Minimize the negative interactions between users and livestock operations through route designation and future new route design; providing appropriate access for rangeland management.
  - c. Promote positive user interactions between user groups; providing appropriate access for public and commercial operations.
  - d. Ensure route connectivity between the North Desert ERMA and the Grand Valley OHV SRMA (open OHV area). Allow higher route density along the ERMA's interface with the Grand Valley OHV SRMA at 27 ¼ Road, with route density generally decreasing as the trail system extends to the northwest toward 25 Road and 21 Road.

## ***CULTURAL RESOURCES***

BLM is satisfying the requirements of Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470f, for the travel and transportation management decisions relating to the Grand Junction Field Office Resource Management Plan pursuant to Attachment F to the *State Protocol Agreement Between the Colorado State Director [SD] of the Bureau of Land Management [BLM] and the Colorado State Historic Preservation Officer [SHPO] Regarding the Manner in which the BLM will Meet its Responsibilities Under the National Historic Preservation Act [NHP] and the 2012 National Programmatic Agreement [National PA] among the BLM, the Advisory Council on Historic Preservation [ACHP], and the National Conference of State Historic Preservation Officers [NCSHPO]* (Protocol). The Protocol, which supplements the National Programmatic Agreement between BLM, Advisory Council on Historic Preservation (ACHP), and the National Conference of State Historic Preservation Officers, adopts an alternate procedure for compliance with Section 106 of the NHPA as allowed under 36 C.F.R. § 800.14(b). Attachment F recognizes that BLM's designation of routes and areas is an undertaking triggering compliance with Section 106 of the NHPA, and that BLM must complete the Section 106 requirements as part of route designation during the planning process. Attachment F specifically outlines how BLM will comply with the requirements for Section 106 for Comprehensive Travel and Transportation Management Planning. As described in Attachment F, "selection of specific route networks and imposition of other use limitations, will avoid impacts on cultural resources where possible. In accordance with 43 CFR 8342, existing cultural resource information must be considered when choosing among the range of alternatives for the design of a planning area travel system, including the potential impacts on cultural resource when determining whether each of the routes or areas in a planning area should be designated as open, limited, or closed." During the designation process, existing cultural resource information is considered when choosing among the range of alternatives for the design of a planning area travel system. A large number of existing routes and areas are designated in these planning efforts (Land Use Plans and Resource Management Plans). "Designation provides a purposefully designed and clearly delineated travel network, reduces the potential for user caused route proliferation, and facilitates travel management law enforcement", all of which are helpful in reducing adverse effects to historic properties.

The steps set forth in Attachment F establish a phased process for the identification, evaluation, and resolution of potential adverse effects to historic properties eligible for or listed on the National Register of Historic Places. The area of potential effect (APE) that is subject to inventory will be determined by the cultural resource specialist as defined by 36 CFR 800.16(d). When defining the APE, the BLM will consider potential direct, indirect, and cumulative effects to historic properties. The Attachment's phased process for identification is broken down into three steps: 1) planning; 2) route development; and 3) route maintenance. During the planning phase, existing cultural resource data obtained from the most recent Class 1 overview of the planning area (Grand River Institute 2011) along with known areas of higher use or concentration of travel will be used to determine priority areas for Class III cultural resource inventory. The SHPO, interested Native American Tribes, and other consulting parties are consulted during planning and invited to participate in the development and implementation of identification, monitoring, and treatment options according to the Colorado State Protocol in association with the National Programmatic Agreement. During the route development phase when Class III inventory is being completed, if BLM identifies historic

properties that are eligible for or listed on the National Register of Historic Places that are affected, BLM will identify ways to avoid, minimize or mitigate such adverse effects, and outline treatment procedures. The types of avoidance, minimization or mitigation may include fencing, site testing or excavation, signing, route realignment, or possibly route limitation or closure. The third phase focuses on conducting Class III inventories, as necessary, for those areas identified during the planning phase as being the lowest priority inventory areas with designated routes.

For the GJFO RMP travel and transportation management planning process, BLM has identified existing routes throughout the field office and examined the routes to determine appropriate designation based on public need and known natural and cultural resource concerns. BLM utilized current cultural resource inventories and assessments to determine potential cultural resource concerns on a route-by-route basis. The designated routes identify cultural resource concerns along with any other issues or rationale for the route designation, which are reflected in the Route Designation Reports. During the GJFO RMP designation process, the type of use on 402 routes was changed based partially or completely on cultural resource concerns. BLM has withheld from public disclosure sensitive cultural resources associated with routes even though BLM considered such information during the designation process. During the RMP phase, the GJFO consulted with the SHPO and interested Native American tribes and incorporated the comments received into our Proposed RMP. Once the RMP is finalized the GJFO will move into the phased identification process to determine priority areas for Class III cultural resource inventory. A priority list of designated routes that require Class III cultural resource inventory will be completed based on the implementation plan and implementation priorities. The remaining phases will follow the steps of the Attachment as described above. For those routes that BLM determines may have adverse effects impacts on cultural resources eligible for or listed in the National Register of Historic Places, the GJFO will consult with the SHPO, interested Native American tribes, and other interested parties to determine means to avoid, minimize or mitigate such adverse effects on a case-by-case basis.

## *Trail Design Criteria*

The following criteria are used to determine suitable locations for new trails and trail reroutes within the Grand Junction Field Office management area. This document utilizes terminology from the “Recommended Standardized Trail Terminology for Use in Colorado.” (COTI 2005)

These criteria are to be followed as guidelines. Not all of the criteria can be met on every segment of every trail. Their purpose is to help create sustainable, low maintenance trails that provide quality recreation experiences based on predetermined trail management objectives (TMOs). Specialty trails requiring higher maintenance may be allowed in appropriate locations.

**1. Know and understand trail management objectives.** TMO’s provide the framework for what the trail will look like, who will be using the trail, and how the trail will be managed. Different TMO’s may allow different applications of the criteria below.

**2. Create loops and avoid dead end trails.** All trails should begin and end at a trailhead or another trail. A well-planned stacked loop trail system offers recreationists a variety of trail options. Easier, shorter loops are arranged close to the trailhead, with longer, more challenging loops extending further beyond the trailhead. Occasionally, destination trails to a point of interest will require an out and back trail, but only if they cannot be reasonably incorporated into a loop.

**3. Identify control points and use them to guide trail design and layout.** Control points are specific places or features that influence where the trail goes. Basic control points include the beginning and end of the trail, property boundaries, intersections, drainage crossings, locations for turns, and other trails.

Positive control points are places where you want users to visit, including scenic overlooks, historic sites, waterfalls, rock outcroppings, lakes, rivers and other natural features or points of interest. If the trail does not incorporate these features, users will likely create unsustainable social trails to get to them.

Negative control points are places you want users to avoid, such as low-lying wet areas, flat ground, extremely steep cross slopes or cliffs, unstable soils, environmentally sensitive areas, sensitive archaeological sites, safety hazards, and private property.

Knowing these control points provides a design framework. Try to connect the positive control points while avoiding the negative control points.

**4. Use cross slope and avoid flat ground whenever possible.** The trail tread should generally be aligned perpendicular to the cross slope and should utilize outsloped tread and frequent grade reversals to facilitate continuous drainage. This is the best way to keep water off the trail. However, outsloped tread is not always practical or desirable to meet recreation experience objectives. Use curvilinear design principles to create a trail that follows the natural contours of the topography, sheds water, blends with the surrounding terrain, and provides fun recreation opportunities.

The following grade guidelines will help determine appropriate tread locations.

- **The Half Rule:** “A trail’s grade shouldn’t exceed half the grade of the hillside or sideslope (cross slope) that the trail traverses. If the grade does exceed half the sideslope, it’s considered a fall-line trail. Water will flow down a fall-line trail rather than run across it. For example, if you’re building across a hillside with a (cross slope) of 20 percent, the trail-tread grade should not exceed 10 percent.” (IMBA 2004) Steeper cross slopes allow more flexibility for sustainable tread grades while flat or low angle cross slopes can be problematic. There is an upper limit to this rule. Sustaining a 24 percent tread grade, even on a 50 percent cross slope is unlikely. Additionally, trail segments may break this rule on durable tread surfaces such as solid rock.
- **The Ten Percent Average Guideline:** The average trail grade over the length of the trail should be 10 percent or less for greatest sustainability. Short sections of the trail may exceed this, but the overall grade should remain at 10 percent or less.
- **Maximum Sustainable Grade:** This is the upper grade limit for those short trail segments that push the limits of the previous two guidelines. It is determined by a site-specific analysis based on TMO’s, environmental conditions, and observations of existing trails – what’s working, and what’s not?
- **Grade Reversals:** Frequent changes in the direction of tread grade (gentle up and down undulations) will ensure that water is forced off the trail at frequent intervals.

**5. Locate trails in stable soils.** Avoid clays, deep loam and soils that do not drain rapidly. Consider season of use and type of use. A trail on a south aspect will have greater usability and sustainability for winter use. The capabilities of motorized vehicles to function in wet/muddy conditions make it imperative to avoid unstable or poorly drained soils. Trails that are less likely to be used when wet may be located in less-desirable soils if necessary. In western Colorado’s arid environment, the best soil conditions for trails are those with high rock content. Utilize slick rock for trail tread when possible. Sand is acceptable in dry washes, but otherwise avoid sand.

**6. Drainage crossings are key control points and should be selected carefully.** Consider both the trail’s impact on the drainage (erosion and sedimentation), and the drainage’s impact on the trail (changing tread surface, water channeling onto trail). The trail should descend into and climb out of the drainage to prevent water from flowing down the trail. Avoid long or steep entries into drainages. Design grade reversals into the trail on each side of the approach to minimize water and sediment entering from the trail. Look for drainage crossings on rock.

**7. Dry washes can be excellent travel ways.** They are well defined, contain noise, and are periodically resurfaced by flowing water. As long as the wash does not support riparian vegetation and has no major safety problems, like water falls, they are well suited to be part of a recreational trail system.

**8. Avoid switchbacks.** Switchbacks are difficult, time-consuming, and expensive to construct, and require regular maintenance. Users often cut them, causing avoidable impacts. Utilizing curvilinear design principles eliminates the need for most switchbacks. Climbing turns are easier to construct and

maintain and utilize natural terrain features (benches, knolls, rock outcrops) to change the direction of a trail.

**9. Avoid ridge tops.** Ridge tops are often primary transportation corridors for wildlife, and were often used by Native Americans as travel routes. Noise from ridge top trails is broadcast over a wide area. Locate trails on side hills, off ridge tops, using ridges and watersheds as natural sound barriers to isolate noise.

**10. Use vegetation and other natural features to conceal the trail and absorb noise.** This can be difficult in a desert environment. Try to minimize the visual impact of the trail by following natural transitions in vegetation or soil type. A trail near the base of a slope or on rimrock is usually less visible than a mid-slope trail. Denser vegetation will hide a trail, lessen noise transmission, and can dissipate the energy of falling raindrops on the bare soil of the trail tread.

**11. Carefully design intersections to avoid safety problems.** When locating a bicycle or motorized vehicle trail be aware of sighting distance and sight lines. Collisions can be avoided if riders can see each other. Avoid four way intersections. Offsetting the cross traffic helps reduce speeds and reduces the risk of collisions.

**Sources:**

Off Highway Motorcycle and ATV Trails: Wernex, 2<sup>nd</sup> edition, American Motorcycle Assoc. 1994

Off Highway Vehicle Trail and Road Grading Equipment, Vachowski, Maier, USDA Forest Service Missoula Technology and development Center 1998 Doc# 7E72A49

Mountain Bike Trails: Techniques for design, construction and Maintenance, McCoy Stoner, USDA Forest Service, Missoula Technology and Development Center

Recommended Standardized Trail Terminology for Use in Colorado, Colorado Outdoor Training Initiative (COTI). 2005

Tractor Techniques for Trailbed restoration, Hamilton, USDA Forest Service 1994

Trails 2000, Lockwood USDA Forest Service 1994

Trail Construction and Maintenance Handbook, Hesselbarth, Vachowski, USDA Forest Service (4E42A25-Trail Notebook) 2004

Trail Solutions, IMBA's Guide to Building Sweet Singletrack, International Mountain Bicycling Association (IMBA) 2004.

USDA Forest Service Travel Management Handbook, FS 2309.18

## *Trail Development Process*

### Introduction

The purpose of this document is to clearly define the process required to create new trails or modify existing trails across public lands managed by the BLM Grand Junction Field Office (GJFO), McInnis Canyons National Conservation Area (MCNCA), and Dominguez-Escalante National Conservation Area (DENCA.) Trails provide a wide range of recreational opportunities throughout these management units. Trails are also a tool used by the agency to provide those diverse recreational opportunities while minimizing impacts to natural and cultural resources. Following the background information below is a step-by-step summary of the process for planning, designing, constructing, maintaining and monitoring trails that are legal, fun, functional and sustainable.

### The Process

For many years, the Bureau of Land Management has actively partnered with organizations and individuals in the Grand Junction area to design and construct many of the trails on public lands in and around the Grand Valley. These trails help support a strong recreation-based infrastructure that makes this area a recreation destination, and an excellent place to live and play. As the popularity of trail-based recreation has grown, so has the need to carefully manage those trails in order to protect recreation opportunities, as well as the many other resources found on local public lands. Effective stewardship of public lands requires collaboration and communication between and among land managers and the many people who use and enjoy those lands. To that end, the BLM recognizes the need to openly communicate the BLM's trail planning and construction process, as well as the BLM's current trail management strategy.

The BLM has worked with trail user groups to implement a trail planning and construction process which creates fun, functional and sustainable trail systems while protecting important natural and cultural resources. Each trail or trail system proposal presents unique opportunities and challenges, but the basic steps for successfully navigating the process are described below.

**1. Formulate a trail proposal or concept.** This is usually the easy part. You've got an idea for a great new trail opportunity, or know of an existing trail that really needs to be fixed. Avoid the temptation to grab a tool and start digging, or to simply start trampling in a new route. Remember these are public lands managed for multiple uses.

**2. Share your idea with others.** Find other user groups who may have an interest in the area. Introduce yourself to these other players and begin to develop a relationship of open communication and trust. A few key points to remember about building a constituency:

- **Look at the big picture.** Public lands contain many different resources and have many different values to many different people. Those differences require a broad and balanced management perspective.

- **Communicate effectively.** Ask questions if the process, or another person's perspective, is unclear. Listen carefully to others involved in the process.
- **Think creatively and collaboratively.** Look for ways to partner with the agency and other user groups to provide the time, talent and funding necessary to move a trail proposal through the process.

**3. Identify the purpose and need for the trail.** Think about why your trail idea is important and what purpose it would serve. The purpose of the trail is to ...? The reason we need the trail is ...? Write those ideas down.

**4. Contact the BLM office (or other agency) that manages the land you're interested in.** Call or e-mail to set up an appointment to talk with someone (usually someone from the recreation program staff) about your idea.

**5. Know and understand the process.** Take some time to learn the details of the process summarized in this document. A few key points to remember about the process:

- **Find the funding.** Trails aren't cheap. Use a trail project planning and budgeting worksheet to develop an accurate estimate of how much your project is likely to cost, then determine how those costs will be paid.
- **Be patient!** The trail development process takes time (sometimes years.) The end result will be worth it.
- **Be flexible.** Changes are often necessary to address issues that arise during the process.
- **Learn more about trails.** There are many great print and electronic media resources, as well as hands-on training opportunities, to learn more about trail planning, design, layout, construction, maintenance and monitoring. See the reference section at the end of this document.
- **Determine current management direction.** Work with BLM staff and/or other trail partners/organizations to identify laws, management plans, policies, and special designations that may affect the trail proposal. Some of the management components that will likely be involved with trail proposals include:
  - **National Environmental Policy Act (NEPA)** – the law that guides any proposed action on Federal lands.
  - **National Historic Preservation Act (NHPA)** – the law that guides land managers to consider and protect cultural resources.
  - **Endangered Species Act (ESA)** – the law that guides managers to protect listed threatened and endangered species.
  - **Resource Management Plan (RMP)** – provides general management guidance for all resources within the Field Office and NCAs. The recreation section of an RMP will define what types of recreation opportunities are targeted for different areas within the Field Office or NCAs.
  - **Recreation Management Plans** – provide specific recreation management direction for areas. Recreation Management Plans are based on the recreation objectives in the Resource Management Plan.
  - **Special area designations**

- **Recreation Management Areas (RMAs)** – areas where specific recreation management guidance has been developed in the Resource Management Plan. These include Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs).
- **Areas of Critical Environmental Concern (ACEC)** – areas where specific resource concerns have been identified, and management actions are implemented to protect those resources.
- **Wilderness and Wilderness Study Areas (WSA)** – undeveloped areas that are managed for “primitive and unconfined” recreation, and for other wilderness values.

**6. Refine trail proposal and define Trail Management Objectives (TMOs).** Based on management direction findings, adjust proposal to fit within current management objectives and guidelines. If the trail proposal is in a Recreation Management Area, be sure the TMOs are consistent with objectives for that area in the Resource Management Plan.

- **Trail Management Objectives** define what the trail looks like, and how it’s managed. TMOs may include some or all of the following specifications:
  - Recreation objective from the Resource Management Plan
  - Trail name/number
  - Type of use
  - Trail type
  - Level of use
  - Use season
  - Level of difficulty
  - Tread width
  - Corridor width and height
  - Surface condition
  - Maximum sustainable grade
  - Operations and patrol
  - Maintenance requirements
  - Special features
  - Monitoring requirements

**7. Design and lay out a sustainable trail alignment.** This process is further defined by the document entitled “**Trail Design Criteria**” which is included in an appendix to the GJFO and D-E NCA RMPs. Trail design and layout requires special training and experience. Utilize a qualified trail designer to ensure a high quality sustainable trail alignment. Qualified trail designers may be agency employees, trained volunteers, or hired trail contractors.

**8. Initiate NEPA Process.** NEPA (National Environmental Policy Act) provides a framework for analyzing the impacts of a proposed project. It requires input from a wide range of resource specialists from the BLM, and often other agencies as well. NEPA analysis along with the associated field work and paperwork is performed by BLM staff, by a contractor, or by a combination of the two. The NEPA process is a public process and provides opportunities for public input regarding any proposed action on Federal lands. For more information about the NEPA process see the “Citizens Guide to NEPA” referenced at the end of this document.

In most cases, trail project proposals will require an **Environmental Assessment (EA)**.

- **EA analyzes impacts on:\***
  - BLM sensitive species
  - Fisheries/Aquatic organisms
  - Native American Religious Concerns

- Federally Threatened, Endangered, and Candidate Species
- Soils
- Water
- Geology and mineral resources
- Wildlife
- Vegetation
- Invasive, non-native species
- Cultural resources (historic and prehistoric)
- Paleontological resources
- Range management (livestock grazing)
- Visual resources
- Transportation and access
- Economy
- Recreation
- Wilderness and wild lands
- Wild and scenic rivers
- Special designations

\* Note that this list is representative and does not list every resource analyzed in an EA.

• **EA includes:**

- Proposed action – the trail proposal plus any associated actions (i.e. trailheads, fencing, etc.)
- Alternatives – in addition to the proposed action, a no-action alternative is analyzed, and sometimes one or more alternative actions are analyzed. This provides a range of information on which to make a management decision.
- Description of current situation
- Description of purpose and need for the proposed action
- Review of relevant laws, management plans and guidance
- Detailed analysis of impacts to resources from the proposed action
- Description of actions to mitigate resource impacts
- Finding of No Significant Impact (FONSI) – statement that mitigated impacts from the proposed action will not be “significant.” If the EA determines there will be significant impacts, an environmental impact statement (EIS) must be prepared.
- Decision Record (DR) – a statement detailing the decision on how to proceed regarding the proposed action. **A decision will be made that will approve the proposal, deny the proposal, or approve it with modifications.** Once the DR is signed by the authorized officer (Field Manager or NCA Manager), the actions specified in the DR may be implemented.

• **Trail EAs often require special field surveys.** These surveys are often expensive and time consuming. **Partnerships to fund surveys are often critical to moving a trail proposal forward.**

- Cultural surveys – on-the-ground assessment of historic and prehistoric human activity in the project area. Federal laws (NHPA and others) mandate the documentation and protection of cultural resources found on Federal lands.
- Plant surveys - on-the-ground assessment of rare, sensitive, threatened or endangered plants in the project area. Federal and state laws mandate the documentation and protection of special status plants found on Federal lands.
- Paleontological surveys - on-the-ground assessment of fossils and other evidence of prehistoric life. Federal laws mandate the documentation and protection of vertebrate fossil resources.

- Wildlife surveys – assessment of sensitive wildlife species or wildlife habitats in the project area. Federal and state laws mandate the documentation and protection of special status fish and wildlife species, and their habitat.

**9. Modify the proposal if required by NEPA.** Sometimes trail reroutes will be required to mitigate impacts to other resources.

**10. Begin construction or maintenance of the trail following completion of the NEPA process.** If the project is approved, and once the EA is signed, implementation of the decision can begin.

- Managing trail construction and maintenance requires special training and experience. Qualified trail builders may be agency employees, trained volunteers, or hired trail contractors.
- Well planned coordination and oversight is essential to ensure high quality sustainable trail construction and maintenance. See reference section for trail construction and maintenance resources.

Finally, once your trail is completed it's important to monitor the trail to ensure that TMOs are being met. Monitoring should include:

- Physical monitoring – is the trail maintaining the design and construction specifications identified in the TMO?
- Social monitoring – is the trail providing the recreational opportunities and experiences specified in the TMO and RMA objectives?

Modify the trail if it is not meeting objectives. Any modifications to the trail will require BLM approval.

## References:

Citizens Guide to NEPA:

[http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/planning/planning\\_docs.Par.53208.File.dat/A\\_Citizens\\_Guide\\_to\\_NEPA.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/planning/planning_docs.Par.53208.File.dat/A_Citizens_Guide_to_NEPA.pdf)

Trail Design References:

Off Highway Motorcycle and ATV Trails: Wernex, 2<sup>nd</sup> edition, American Motorcycle Assoc. 1994

Off Highway Vehicle Trail and Road Grading Equipment, Vachowski, Maier, USDA Forest Service Missoula Technology and development Center 1998 Doc# 7E72A49

Mountain Bike Trails: Techniques for design, construction and Maintenance, McCoy Stoner, USDA Forest Service, Missoula Technology and Development Center

Recommended Standardized Trail Terminology for Use in Colorado, Colorado Outdoor Training Initiative (COTI). 2005

Tractor Techniques for Trailbed restoration, Hamilton, USDA Forest Service 1994

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Trail Construction and Maintenance Handbook, Hesselbarth, Vachowski, USDA Forest Service (4E42A25-Trail Notebook) 2004

Trail Solutions. IMBA's Guide to Building Sweet Singletrack, International Mountain Bicycling Association (IMBA) 2004.

USDA Forest Service Travel Management Handbook, FS 2309.18

**APPENDIX B: Trail Management Objective form**

**Trail Management Objective**

**Trail Name** \_\_\_\_\_ **Trail Number** \_\_\_\_\_

**Resource Management Plan Objective** \_\_\_\_\_

**Type of use:**

Hiking/Running \_\_\_\_ Equestrian \_\_\_\_ Mtn. Biking \_\_\_\_ Motorcycle \_\_\_\_ ATV \_\_\_\_ 4x4 \_\_\_\_

**Trail type:**

Access \_\_\_\_ Destination \_\_\_\_ Point-to-Point \_\_\_\_ Loop \_\_\_\_

**Level of use:**

**Recreational** Heavy \_\_\_\_ Moderate \_\_\_\_ Light \_\_\_\_

**Competition** Yes \_\_\_\_ No \_\_\_\_

**Commercial** Yes \_\_\_\_ No \_\_\_\_

**Use season:**

Year round \_\_\_\_ Spring, Summer, Fall \_\_\_\_ Winter \_\_\_\_ Seasonal closure \_\_\_\_

**Level of Difficulty:**

Easiest \_\_\_\_ More Difficult/Intermediate \_\_\_\_ Most Difficult/Advanced \_\_\_\_ Experts Only \_\_\_\_

**Trail Specifications:**

Tread width \_\_\_\_\_ inches

Surface

Corridor

smooth \_\_\_\_ moderate \_\_\_\_ rough/technical \_\_\_\_

Width \_\_\_\_ feet

Height \_\_\_\_ feet

Maximum sustainable grade \_\_\_\_\_

**Operations and Patrol:**

Patrolled by:

BLM \_\_\_\_ Volunteer(s) \_\_\_\_ Adopt-a-Trail \_\_\_\_

Frequency of patrols:

Weekly \_\_\_\_ Monthly \_\_\_\_ Yearly \_\_\_\_

Type of patrol:

Law enforcement \_\_\_\_ Maintenance \_\_\_\_ Monitoring \_\_\_\_ Visitor services (information/education) \_\_\_\_

**Maintenance:**

Frequency:

Six months \_\_\_\_ Annual \_\_\_\_ Three years \_\_\_\_ As needed \_\_\_\_

Work performed by:

Agency \_\_\_\_ Contract \_\_\_\_ Volunteers \_\_\_\_

Method:

Mechanized \_\_\_\_ Hand work \_\_\_\_

**Features:**

Retaining walls \_\_\_\_

Hardening \_\_\_\_

Bridges \_\_\_\_

Drainage structures \_\_\_\_

Signing: interpretive and information \_\_\_\_

Switchbacks \_\_\_\_

Drains (culverts, etc.) \_\_\_\_

Other \_\_\_\_

**Monitoring:**

Photo points:

Yes \_\_\_\_ No \_\_\_\_

Frequency \_\_\_\_\_