APPENDIX G.
TRAVEL PLAN DEVELOPMENT

G.1 INTRODUCTION

Travel management is the process of planning for and managing access and travel systems on the public lands. Comprehensive travel management planning should address all resource use aspects, such as recreational, traditional, casual, agricultural, commercial, and educational, and accompanying modes and conditions of travel on public lands, not just motorized or off-highway vehicle activities (BLM Land-use Planning Handbook 1601-1). This includes travel needs for all resource management programs administered by the BLM, including but not limited to the mineral industry, livestock grazing, and recreation.

Though historically focused on motor vehicle use, comprehensive travel management also encompasses all forms of transportation including travel by mechanized vehicles such as bicycles, as well as the numerous forms of motorized vehicles from two-wheeled (motorcycles) and four-wheeled such as all-terrain vehicles (ATVs) to cars and trucks.

The term off-road vehicle (ORV) is an outdated term that has the same meaning as off-highway vehicle (OHV), which is currently in use. The term off-highway vehicle (OHV) refers to the latter group noted above – "any motorized vehicle capable of, or designated for, travel on or immediately over land, water, or other natural terrain," as defined in the National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, finalized by the Bureau of Land Management (BLM) in January 2001. The intent of the National Strategy was to update and revitalize management of off-highway motor vehicle use on BLM administered lands. The national strategy provides guidance and recommendations to accomplish that purpose.

The process of development and content of the draft Moab travel plan are described in this document.

G.2 HOW TO READ/USE THIS DOCUMENT

This document addresses the process by which the BLM Moab Field Office Interdisciplinary (ID) Team and its cooperating agencies have developed the Draft Environmental Impact Statement (DEIS)/Resource Management Plan (RMP) alternatives for motorized and mechanized use in the Moab Field Office. This document takes the reader through the process of travel planning within the Moab Field Office and addresses the following issues and concerns.

- The Land-use Planning decisions of the travel plan define the areas within the field office that are determined to be Open, Limited, or Closed, and the number of miles of designated routes under the Limited category.
- The Implementation decisions of the travel plan include the designation of routes within areas delineated as Limited to Designated Roads and Trails. Other implementation actions include signage, maps, public information, kiosks, monitoring, and working with partners. Enforcement of OHV designations should be clear once routes are signed. An implementation plan will be prepared at a later time with details regarding these actions.
- Issues identified during public scoping for this travel plan process are described in Section 6.

- The planning criteria, data collection, and alternatives development by which the BLM and its cooperating agencies arrived at the routes designated for the alternatives in the DEIS/RMP are outlined in Sections 7, 8 and 9. Lists of routes for non-motorized, equestrian/stock, and foot travel are also provided in Secti 9.
- Future changes to route designations are addressed in Section 10.
- The cooperating agencies involved with developing the travel plan are identified in Section 11. Other coordination is also included.
- The analysis of impacts for the travel plan will be completed within the DEIS/RMP.
- Definitions commonly used in addressing off-road vehicle use are found in Appendix A. Route by route information can be found in the GIS records accompanying the plan. These are available upon request. Maps 2-11-A through D display the designated routes by alternative.

G.3 SUMMARY

Land-use Planning Decisions – The Federal Regulations at 43 CFR Part 8340 and Executive Order 12608 require BLM to designate all public lands as Open, Limited, or Closed for OHV use. These designations are made in the Resource Management Plans (RMPs) or in plan amendments. Additionally, the criteria for route designation are established in the RMP.

Table 1 lists the lands within the Open, Limited, and Closed OHV categories within the Moab Field Office as determined by the ID Team. These acreages are subject to change depending on any changes made during the on-going alternative evaluation process. The acreages exclude BLM lands within the MFO boundary, but managed by the Vernal FO.

Table 1. OHV Categories (acreage) by Alternative

Category	Alternative A[1]	Alternative B	PROPOSED PLAN	Alternative D
Closed	29,654	358,126	349,843	29,654
Limited to Existing	1,065,683	0	0	0
Limited to Designated	47,787	1,463,248	1,469,665	1,788,372
Open	678,250	0	1,866	3,348
Totals[2]	1,821,374	1,821,374	1,821,374	1,821,374

[1] No Action takes as baseline the 1985 Grand RMP and subsequent Federal Register actions.
[2]Excludes lands in the Moab Field Office managed by the BLM Vernal Field Office.

Implementation Decisions – The designation of routes within the areas specified as "Limited to Designated" is an implementation decision. Designation involves the selection and identification of roads and trails to be included in a travel plan system.

Table 2 and Table 3 provide a summary of the miles of designated routes (full sized) by alternative for Grand County and San Juan County, respectively.

Table 2. Designated Routes (miles) by Alternative for Grand County

Road Type	Grand Co Inventory (all lands)	Grand Co Inventory (BLM lands)	Grand Co Proposed Travel Plan[1]	Grand Co Proposed Travel Plan (BLM lands)	Alternative B	PROPOSED PLAN	Alternative D
"A" roads	280	184	280	184	184	184	184
"B" roads	1441	995	1441	995	995	995	995
"D" roads/other[2]	5544	4171	2940	1898	1417	1703	1831
Total miles	7265	5350	4661	3077	2596	2882	3010

[1] Includes routes recommended by Grand County for designation as motorized as well as a number of "undetermined" routes. Some of these are outside of the County 's jurisdiction (e.g. tribal, USFS), or left to the BLM 's discretion.

[2] "Other" consists primarily of old railroad grades and mapped pack trails totaling 86.4 miles.

Table 3. Designated Routes (miles) by Alternative for San Juan County

Road Type	San Juan Co Travel Plan	San Juan Co Travel Plan/BLM	Alternative B	PROPOSED PLAN	Alternative D
"A" roads	51	20	20	20	20
"B" roads	343	171	171	171	171
"D" roads	1246	862	745	824	858
Total miles	1640	1053	936	1015	1049

Table 4 summarizes the miles of designated routes (motorcycle) on BLM lands which are entirely within Grand County. This Table also includes Grand County roads which are part of the motorcycle trail system.

Table 4. Designated Motorcycle Routes (miles) by Alternative.

Route	Inventory	Alternative B	Proposed Plan	Alternative D
On existing Grand Co roads	142	122	163	151
Single-track	129	0	150	196
Total	271	122	313	347

Management common to all action alternatives include the following, as developed by the ID Team in preliminary alternative development meetings:

- In areas limited to designated routes, only designated routes are open to motorized use.
- Off-highway vehicle use includes *motorized* (e.g., autos, trucks, ATVs, motorcycles, dirt bikes, 4x4s); and *mechanized* (e.g., bicycles).
- There will be no cross-country travel for game retrieval or antler gathering in areas designated as limited or closed. This policy is consistent with the policies of the National Forest Service in Utah.

- No cross-country travel associated with dispersed camping is allowed.
- Any fire, military, emergency or law enforcement vehicle when used for emergency purposes is exempted from OHV decisions.
- Wilderness Study Areas are to be either designated as limited or closed to OHV use, and must be managed and monitored to comply with the interim management policy non-impairment standard.
- As required in 43 CFR Sec. 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."

G.4 AUTHORITY AND GUIDANCE

- Federal Land Policy and Management Act (FLPMA), 43 U.S.C 1701 – Land-use plans and revision should be based on principles of multiple use and sustained yield.
- National Environmental Policy Act, (NEPA), 42 U.S.C. 4321.
- Executive Order No. 11644, Feb 8, 1972 - This order established criteria by which federal agencies were to develop regulations for the management of OHVs on lands under their management. Agencies are to "monitor the effects" of OHV use on their public lands and, "on the basis of the information gathered, they shall from time to time amend or rescind designation of areas for OHV use "as necessary to further" its policy.
- Executive Order No**.** 11989, May 25, 1977 – This order modified ED 11644 – This order authorized agencies to adopt a policy that particular lands can be considered closed to OHVs once it is determined that OHV use "will cause or is causing considerable adverse effects" to particular resources.
- Executive Order No. 12898, 1994 – Indicates that Federal planning efforts should give consideration to how plans will affect local economies.
- 43 C.F.R. Part 8340 – the OHV Regulations – Establish criteria for designating lands as open, limited, or closed to the use of OHVs.
- Archeological Resources Protection Act (ARPA), 1979, as amended. And other Cultural protection laws and regulations.
- Taylor Grazing Act, 43 U.S.C. 315a.
- Endangered Species Act, 16 U.S.C. 1531 – Federal agencies shall give consideration to ensure agency actions do not jeopardize the continued existence of any endangered species.
- Land and Water Conservation Fund Act, 16 U.S.C. 460 1-6a.
- National Historic Preservation Act, as amended, 1966.
- Wild and Scenic Rivers Act, 16 U.S.C. 1281c.
- National Trails System Act, 16 U.S.C. 1241.
- U.S. Department of the Interior, BLM, Interim Management Policy for Lands Under Wilderness Review, H-8559-1.
- Resource Management Plan, BLM San Juan Resource Area, March 1991.
- IB 99-181, OHV Use in Wilderness Study Areas (WSAs).

- IM UT 2001-090, Implementation of Utah Recreation Guidelines.
- IM [WO] No. 2004 – Clarification of Cultural Resource Considerations for Off-Highway (OHV) Route Designation and Travel Management.
- IM 2004-005, Clarification of OHV Designations and Travel Management in the BLM Land-use Planning Process.
- IM UT 2004-008, Clarification of OHV Designations and Travel Management in the BLM Land-use Planning Process.
- IM UT 2004-061, Designating Off Highway Vehicle Routes in the Land-use Planning Process.
- OHV – National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, USDI, BLM, January 2001.
- Standards for Public Land Health and Guidelines for Recreation Management for BLM Lands in Utah, 2001.

G.5 TRAVEL PLAN DESIGNATION PROCESS

A goal of the BLM Moab Field Office planning process is to develop, with its cooperators, a travel plan that provides access to public lands. The goals and objectives of this travel plan apply to all areas of travel management including access to resources, appropriate recreation opportunities that at the same time protect public land resources, ensuring public safety, minimizing conflicts among the various public land-uses, and providing for support of the local economy.

G.5.1 BACKGROUND

Areas designated as "open" are open to cross-country motorized travel. Areas designated as "closed" are entirely closed to motorized travel. Areas designated as "limited" restrict motorized travel to either existing or designated routes.

The 1985 Grand Resource Area RMP included designations for Open, Closed, and Limited OHV areas with limited applying to both existing and designated roads and trails. Since 1992, the Moab Field Office has instituted several revisions to the original RMP (through plan amendments) as well as Federal Register notices regarding OHV use. These changes have resulted in changes from Open to Limited to Existing Roads and Trails, and in some cases from Open to Limited to Designated Routes. These changes attempted to reduce damage resulting from unrestricted cross-country travel.

In the current RMP process, state and national guidance for the OHV Limited category designation has changed. Designating Open, Closed, and Limited areas for OHV use continues to be mandated, but under the Limited category only the "Limited to Designated Roads and Trails" sub-category is recommended. The designation of the sub-category "Existing Roads and Trails" is no longer a recommended option. Eliminating the "Existing Roads and Trails" sub-category prevents confusion and enforcement problems concerning new unauthorized routes being created and then used by the public because they are then "existing". By policy (IM No. 2004-005) BLM discourages of the use of the "Limited to Existing" category.

G.5.2 INTERDISCIPLINARY (ID) TEAM PROCESS

Guidance for developing a Travel Plan includes utilizing the ID Team approach (8342.21A and 43 CFR 1601.1-3). The individuals who participated in the completion of the plan are listed in Table 5.

Table 5: Moab FO Interdisciplinary (ID) Team Members and Cooperators

Name	Resource /Organization
Maggie Wyatt	Field Office Manager
Eric Jones	Acting Associate Field Office Manager, Petroleum Engineer
Lynn Jackson	Acting Associate Field Office Manager, RA/Science and Outreach
Brent Northrup	RMP Planning Coordinator, RA/Lands and Minerals
Russ von Koch	Branch Chief, Recreation
Bill Stevens	Travel Plan Lead, Recreation Planner
Doug Wight	GIS Coordinator
Jean Carson	GIS Specialist
Rob Sweeten	Landscape Architect/VRM
Ann Marie Aubry	Hydrologist
Stephanie Ellingham	Natural Resources Specialist
Donna Jordan	Resource Clerk
Pam Riddle	Wildlife Biologist
Daryl Trotter	Environmental Protection Specialist/NEPA Coordinator
Donna Turnipseed	Cultural, Paleontology
Mary von Koch	Realty Specialist
Chad Niehaus	Recreation Planner
Katie Stevens	Recreation Planner
Jon Sering	BLM Law Enforcement Ranger
James Ward	BLM Law Enforcement Ranger
Alex VanHemert	Recreation Planner
Jerry McNeely	Chair, Grand County Council
Dave Vaughn	Grand County Assistant Road Supervisor/GIS Specialist
Evan Lowry	San Juan County, Planner
Ben Nielson	San Juan County, Assistant Planner

Between October, 2004 and September, 2005, the ID Team held 21 meetings specifically concerning the travel plan [meeting minutes are in the RMP Administrative Record]. In addition, BLM staff met with representatives of the National Park Service, Utah State Parks, and Utah School and Institutional Trust Lands Administration, to determine what concerns they might have with the travel planning process. BLM staff also contacted adjacent BLM offices to ensure that Moab's travel planning did not conflict with theirs. BLM also used the Manti-LaSal National Forest route designation map to ensure proper route continuity. Finally, Moab BLM staff was in constant contact with the Monticello Field Office, to provide as much consistency as possible in

travel planning. This was especially important for routes in San Juan County, as this county lies within both BLM offices.

G.6 IDENTIFICATION OF ISSUES

OHV/Travel issues were identified by BLM resource specialists in the pre-plan, through the Public Scoping process for the Monticello/Moab Field Offices RMP, by input from the public in response to Planning Bulletin #3 -- Request for Route Data, and through proposals for travel routes presented to BLM from organizations.

BLM staff identified the following issues concerning travel in the field office.

- Route designations in the current RMP are outdated and do not address the current level of use.
- OHV designations need to be reviewed and revised as necessary to protect other resources.
- Maps need to be developed to identify uses of competing resources, and to show the public where OHV use is allowed.
- Implementing designated routes on-the-ground through signing and maps.
- OHV designations must be consistent with Wilderness Study Areas (WSAs).
- Dependence of local industry on public lands (including the recreation industry).
- Increased recreation use and demand.
- Conflicts between OHV use and other resources including riparian, wildlife, sensitive soils, visual, vegetation, and cultural. Conflicts also exist between OHV use and resource uses such as grazing and oil and gas activities.
- Conflicts between user groups such as non-motorized and motorized users, between river runners and OHV users, between commercial and private users, and OHV use associated with unregulated camping.

Comments received from public scoping were placed in one of three categories:

- Issues to be addressed in the resource management plan (RMP). Specific to this travel plan, these are the OHV/Travel issues considered in the Moab Field Office;
- Issues that can be addressed through policy or administrative actions; or
- Issues beyond the scope of the plan (e.g., RS 2477 claims, new wilderness proposals).

Comments from the six public scoping meetings included 440 comments on recreation and OHV/Travel or 35% of the total 1,250 comments. Comments received in letters concerning the Moab Field Office OHV and Travel program totaled 4,134 or 39% of the total comments, with the remaining 61% of the comments addressing the 14 remaining resource or planning categories (Moab and Monticello RMP Revisions, Scoping Summary, July 2004). Of all the written comments received regarding the Moab RMP, 92.9% commented on OHV use to one degree or another.

Input from Public Scoping both through the public meetings (June 4, 2003 through December 31, 2004), and through input responses to Planning Bulletin # 3, identified the following issues, many of which are similar to those noted above:

- How can increased recreation use, especially motorized vehicle use, be managed while protecting natural resource values?
- Which areas should be designated as open, limited or closed to OHV use, and which routes should be designated within the limited category?
- What types of recreation travel should be available on designated routes and under what limitations?
- Where could adaptive management be applied in response to unacceptable resource impacts?
- How should recreational uses be managed to limit conflicts with other recreational users?
- How should camping, hunting access, human waste, fires, and wood collection be managed [in terms of OHVs]?
- How should conflicts with other resource uses be reduced?
- What management actions should be implemented to mitigate damage caused by recreational uses, including vehicles, on other resources and sensitive areas, especially riparian areas?
- How should recreation in the planning areas be managed to ensure public health and safety?

G.7 Developing Planning Criteria

Considerations of both social and physical elements help define the criteria for a travel plan. The social aspects include public demands, historical uses, existing rights-of-way, permitted uses, public access, resource development, law enforcement and safety, conflicts between existing or potential uses, recreation opportunities, local uses, cultural and economic issues. Physical aspects include the terrain, soils, water, vegetation, and watersheds, connectedness of routes, special designations such as WSAs, demands for specific types of vehicle use, and manageability considerations.

General planning criteria for the Resource Management Plan (RMP) process includes:

- Decisions - All decisions made in the RMP will only apply to public lands managed by the BLM.
- Existing Rights – The plan recognizes current, valid existing rights.

Specific to the travel plan, the criteria include:

- National OHV Policy - Decisions regarding OHV travel will be consistent with the BLM's National OHV Strategy.
- R.S. 2477 - No regulations to either assert or recognize R.S. 2477 rights-of-way currently exist. While R.S. 2477 claims have been asserted by Grand and San Juan Counties, it is beyond the scope of this document to recognize or reject R.S. 2477 assertions, and this issue is not addressed further in this Travel Plan. Nothing in this document is intended to provide evidence bearing on or addressing the validity of any R.S. 2477 assertions. At such time as a decision is made of R.S. 2477 assertions, BLM will adjust travel routes accordingly, where necessary.

- Access to Utah School and Institutional Trust Lands Administration (SITLA) State Sections - BLM is required to provide access to State lands, as requested.

G.7.1 OHV DESIGNATION CRITERIA

The guidance found at 8342.1 lists the following criteria that must be met by BLM in the travel planning process:

Protection Requirements – the following resource protection criteria must be met:

1. Cultural and Natural Resources – Designations must minimize damage to all cultural and natural resources. Examples of these include, but are not limited to, the following: historical and archeological sites, soil, water, air, vegetation, and scenic values.
2. Wildlife – Designations must minimize harassment of wildlife and/or significant disruption of wildlife habitat.
3. Endangered Species – Special attention must be given to protect endangered or threatened species and their habitat.
4. Wilderness – Designations must not impair the wilderness suitability of lands under consideration for inclusion in the wilderness system.

User Access Requirements – the following criteria are used to assure adequate consideration for the requirements for each resource activity (i.e., minerals, range, forestry, recreation, etc.) as they relate to access needs:

1. Operational needs – designations must consider user access requirements for inventory, exploration, use supervision, maintenance, development, and extraction of public land resources as well as maintenance of facilities on public lands.
2. State and Private Land – designations must consider the access and use needs for areas and routes located within intermingled State and private land.

Public Safety – The designation of areas and routes for OHV use must be completed so as to promote public safety, recognizing that challenge and risk are desirable factors for some uses.

1. Hazards – Designations must minimize or eliminate OHV use in areas of extreme natural or man-made hazards unless such hazards can be mitigated.
2. Safety Factors – Designations must separate uses in situations where public safety factors present unacceptable risks (e.g., rifle ranges, children's play areas, mines, etc.)

Conflict Resolution – The designation of areas and routes for OHV use must assure full consideration of the multiple-use values of public lands consistent with the following criteria:

1. Balanced Approach – Designations must provide as wide and as balanced an approach to public land access as possible to protect public land resource values while at the same time meeting user access needs.
2. Other Uses – Designations must minimize conflicts between OHV use and other existing or proposed uses of the public lands.
3. Compatibility – Designations must ensure the compatibility of OHV uses with existing conditions in populated and other sensitive areas by taking into account noise, air pollution, and other factors of the human environment.

G.7.2 MOAB FIELD OFFICE CRITERIA FOR TRAVEL PLAN

Criteria for travel planning include Standards for Rangeland Health; establishing purpose and need (P/N) for routes per above mentioned guidance; defining conflicts between resources; defining conflicts among users; evaluation and consideration of routes in terms of WSAs; administration and emergency uses, and access to private and SITLA lands.

Standards for Rangeland Health of BLM land in Utah relate to all uses of public land, including recreation, and describe natural resource conditions that are needed to sustain public land health. The Standards encompass upland soils; riparian systems; plant and animal communities; special, threatened, and endangered species; and water quality. The Rangeland Health Standards provide guidance for management of resources.

G.7.2.1 PURPOSE AND NEED

The methodology used during the route designation ID Team meetings to develop a well-designed travel network was a mix between guidance received from the State Office and guidance from the Washington Office:

- IM UT 2004-061, from the UTSO, states that Field Offices should begin the route designation process with existing inventory and data, and then determine purpose and need for the existing routes.
- IM 2004-005, from the WO, recommends choosing individual roads and trails for designation, "rather than using inherited roads and trails", because most existing roads "were created by use over time, rather than planned and constructed for specific activities and needs".

The purpose and need for travel routes are examined in terms of the existing situation on-the-ground in terms of why the route is currently utilized. The Moab Field Office considered the following criteria for routes in the travel plan:

- Desired future conditions
  - Potential for adverse or positive economic impacts
  - Resource and use conflicts
  - Standards for Public Land Health and Guidelines for Recreation
  - Management for BLM Lands in Utah
- Public health and safety
  - Abandoned Mine Lands
  - Hazardous Materials
- Access
  - Routes identified in guide books, including popular routes used in the Easter Jeep Safari event
  - Scenic overlooks
  - Access to private and SITLA lands
  - Elimination of route redundancy
  - Special Recreation Management Areas

  - Special designation prescriptions including Areas of Critical Environmental Concern (ACECs), Wilderness Study Areas (WSAs), and Wild and Scenic Rivers (WSRs)
- Cultural and paleontological resources
- Fire considerations
- Mineral resources/energy development
- Rangeland standards
- Recreation opportunities and experiences
- Watershed resources
  - Erosive soils
  - Saline soils
  - Municipal watersheds
- Vegetative resources including relict vegetation
- Wildlife resources
  - Special Status Species
  - Crucial winter habitats
  - Rutting, calving, kidding, lambing, and fawning habitat
  - Raptor nesting locations
- Woodlands resources
- Visual resources

G.7.2.2 MITIGATIONS

Mitigations that can be utilized to address conflicts could include:

1. Non-designation;
2. The season and timing of use;
3. The types of vehicle use, motorized and non-motorized;
4. Re-routing of segments; and
5. Other methods of travel.

G.7.2.3 ROUTE NUMBERS

Grand County has unique identifiers for each of the route segments in its inventory, with segments usually defined between intersections. San Juan County also has route numbers for each road in its inventory, although these numbers tend to correspond to an entire route, rather than a route segment. The Moab Field Office uses the same route numbers as the counties in the travel plan analysis.

In collaboration with the Manti-LaSal National Forest, which has its own numbering system, BLM and San Juan County have suggested that the BLM provide its joint numbering system with the county as an adjunct to that of the Forest for signing routes on-the-ground. It is possible that routes on the National Forest will bear two different numbered signs, one for the forest and one denoting the route number of the county route on a separate post. These two systems will be incorporated into the implementation plan in mapping and written public information.

G.7.2.4 ROUTE DESIGNATIONS IN WILDERNESS STUDY AREAS (WSAS)

Information Bulletin No. 99-181 (BLM) directs BLM to comply with the wilderness 'non-impairment' mandate (FLPMA, Section 603(c)). BLM must monitor and regulate the activities of off-highway vehicles in the Wilderness Study Areas to assure that their use does not compromise these areas by impairing their suitability for designation as wilderness.

The BLM's Off Road Vehicle Regulations (43 CFR 8342.1) require that BLM establish off-road vehicle designations of areas and routes that meet the non-impairment mandate. It is the BLM's policy that cross-country vehicle use in the WSAs does cause the impairment of wilderness suitability. Thus, the BLM should establish off-road vehicle designations in WSAs that limit vehicular access to boundary roads, or "ways" existing inside a WSA that were identified during the inventory phase of the wilderness review.

G.7.2.5 ADMINISTRATIVE ACCESS AND USE

Routes considered for Administrative Use Only were discussed by the ID Team. These administrative categories could include routes to stock ponds and other range improvements, guzzlers, and BLM facilities. The Moab Field Office reserves the right to allow travel on these routes to permittees, BLM employees, or whomever it deems appropriate on a case-by-case basis.

G.7.2.6 EMERGENCY USES

By regulation, any fire, military, emergency or law enforcement vehicle when used for emergency purposes is exempted from OHV decisions. Emergency uses in WSAs are covered under the IMP, Section I.B.11 and 12.

G.7.2.7 EMERGENCY LIMITATION OR CLOSURE

Whenever the authorized officer determines that OHV use will cause or is causing considerable adverse effects on resources (i.e., soil, vegetation, wildlife, wildlife habitat, cultural, historic, scenic, recreation, or other resources), the area must be immediately closed to the type of use causing the adverse effects (43 CFR 8341.2). Such limitation or closures are not OHV designations.

G.8 MOAB FIELD OFFICE TRAVEL PLAN -DATA COLLECTION

G.8.1 INTRODUCTION

As part of the BLM's RMP process, a travel plan has been prepared for the Moab Field Office. This process includes preparing a range of alternatives for inclusion in the Draft Environmental Impact Statement (DEIS). The BLM will provide a range of alternatives as to which areas of the Field Office will be *open* to OHV travel, which areas will be *closed* to OHV travel, and which areas will be *limited* to designated routes. Within the limited areas, BLM will provide a range of alternatives by varying miles of designated routes. An initial step was to verify the road maps submitted to the BLM by Grand and San Juan Counties (and also routes submitted by private parties, discussed later). The maps and associated GIS data encompass tens of thousands of road segments in an area covering more than 1.8 million acres. This makes an on the ground

verification of each road segment impractical; fortunately, methods exist which can greatly reduce the road verification workload and still achieve satisfactory results.

For road verification in Grand County, BLM relied on statistical sampling and aerial photography wherever possible for road verification. The purpose of the study is not to draw conclusions as to the condition, extent of use or function of these road segments, but simply to verify that they exist. Details of the study are described below.

For road verification in San Juan County, BLM replicated the procedures described above for Grand County. In addition, an on the ground verification of all road segments within a limited area was also undertaken. This latter approach simply provided a different mechanism for accomplishing the same overall goal. Details of both approaches are described below.

G.8.2 GRAND COUNTY ROAD VERIFICATION

Verification of Grand County road data encompassed the following steps:

1. Grand County provided the BLM with GIS data (as of May 8, 2003) of all County-documented road segments within Grand County. The data includes not only roads on BLM, but also private roads, National Park Service Roads, and some road data in those parts of San Juan County in close proximity to Grand County. BLM used ArcView 3.3 GIS software to export to MS Excel only those road segments identified as being in Grand County and being part of the "D" road system (maintained "A" and "B" roads were not part of the road verification analysis). This process resulted in a selection of 21,285 road segments. Grand County submitted additional data (as of November 12, 2003), resulting in an additional 1167 segments which consisted of 1082 "D" roads as well as a few private roads. These additional segments totaled 787 miles.
2. BLM used commonly available statistics software[1] to determine how many road segments would need verification in order to establish at a 95% confidence level that the Grand County road data was accurate. This step produced a sample size of 377 segments for the May 2003 data, and 208 segments for the additional November 2003 data.
3. The above step assumes that the segments selected are chosen randomly. To accomplish this, BLM assigned (using MS Excel) a unique random number to each of the 21,285 segments identified in step 1. These segments were then sorted in random number order, with the first 377 segments brought forward for verification. A similar process was applied to the November 2003 data.
4. BLM next used ArcView 3.3 to display the road segments chosen in step 3, but now overlaid with digital aerial photographs taken in 2001-2002. In most cases, the road segment in question was easily recognized on the digitized aerial photo. In a few cases, the photo resolution was insufficient for positive verification. In those cases, BLM examined the original hard copy of the photo. If the segment could not be verified in this manner, BLM undertook a field trip to conduct on the ground verification.

Using the above steps, BLM was able to positively verify the existence of 376 of the 377 (or 99.7%) May 2003 segment sample. The one segment not verifiable by aerial photograph analysis was visited by BLM personnel, but could not be found (see map and photos in the RMP administrative record). The segment in question lies on the edge of the White Wash Sand Dunes,

[1] A good website for this is www.pearsonncs.com/research-notes/sample-calc.htm

an area characterized by blowing and drifting sand, adding to the difficulty of finding routes on the ground. Since the segments examined were a true random sample of the population of interest, BLM can be at least 95% confident that the May 2003 data provided by Grand County is 99.7% accurate.

The sample derived from the additional November 2003 data, in general, provided more of a verification challenge. Most of these routes were very faint in aerial photographs; nonetheless, all but three were identifiable in this manner. BLM undertook field verification of the remaining three segments. Combining the results of the two samples, and from aerial photography alone, BLM was thus able to verify 581 of 585 segments, or 99.3%.

In July, 2004, Grand County provided BLM, as part of RMP scoping, a travel plan for the County, which divided their original inventory into routes recommended for motorized use, routes preferred for such use, routes recommended for non-motorized use, and undetermined (mainly roads in Moab City and San Juan County, over which Grand County lacks jurisdiction). The net result of this plan was to recommend 2273 miles of the original inventory (on BLM) for non-motorized use. Table 6 summarizes the Grand County road inventory and its proposed travel plan data, both in total miles within Grand County and on BLM lands within Grand County:

Table 6. Road Inventory and Proposed Travel Plan provided by Grand County (miles)

Road Type	Grand Co Inventory (all lands)	Grand Co Inventory (BLM lands)	Grand Co Proposed Travel Plan[1] (all lands)	Grand Co Proposed Travel Plan (BLM lands)
"A" roads	280	184	280	184
"B" roads	1441	995	1441	995
"D" roads/other[2]	5544	4171	2940	1898
Total miles	7265	5350	4661	3077

[1] Includes routes recommended by Grand County for designation as open to motorized, as well as a number of "undetermined" routes. Some of these are outside Grand County 's jurisdiction (e.g., tribal, USFS), or left to the BLM 's "discretion".

[2]"other" consists primarily of old railroad grade and mapped pack trails, totaling 86.4 miles

Trail Mix, an entity established by Grand County, submitted data to BLM on December 15, 2004. Trail Mix represents various groups of generally non-motorized trail users (hikers, mountain bikers, equestrians) from Grand County, with some input as well from motorcycle users. Trail Mix's proposal, summarized in Table 7, pertains to designation of various routes for specific uses (the last two categories contain recommendations which conflicted with the Grand County Travel Plan, discussed earlier).

Table 7. Trail Mix Route Proposal

Route	Miles (BLM)
Proposed mechanized (both new single-track and existing, unmapped routes)	22.3
Proposed motorcycle	4.1
Proposed conversion of motorized to mechanized	15.9
Proposed conversion of motorized to non-mechanized	1.36

G.8.3 SAN JUAN COUNTY ROAD VERIFICATION

As discussed above, Grand County first presented BLM with an *inventory* of all routes mapped by the County. Grand County followed this with a travel *plan*, comprising far fewer routes than had been inventoried. In contrast, San Juan County did its inventory and travel plan simultaneously while in the field. This was accomplished, basically, by noticing that a route in question was receiving regular use, thus establishing that it had a purpose and need. Routes receiving no obvious use were seen, generally, as lacking purpose and need. Unlike Grand County, San Juan County did not inventory numerous routes visible on the ground.

The verification process for San Juan County (within the Moab Field Office boundary) consisted of two distinct step. For the first step, BLM undertook an on the ground verification of all routes in the County's database within a limited geographical area. BLM undertook this approach because of the availability of manpower in the area of interest, and also to compare and contrast the results from the two verification approaches. The area chosen for analysis was the Canyon Rims Recreation Area, and encompasses all San Juan road data west of Hatch Wash to the Moab Field Office boundary. The current on-site verification excluded those road segments already verified as part of the 1999 BLM Wilderness Inventory (located primarily near the western rim of Hatch Wash).

BLM personnel used hard copies of maps depicting San Juan County road data to locate and photograph each route so depicted. This process produced 322 Class D road segments[2] to verify, of which 317 were positively verified on the ground. Virtually all of the routes on the west rim of Hatch Wash had been documented in conjunction with the 1999 BLM Utah Wilderness Inventory. Field personnel were able to verify all but five of the remaining routes in late summer, 2003. As part of the 2003 process, BLM personnel prepared detailed logs of each road verified, accompanied by 215 digital photographs. The remaining 5 segments (inadvertently missed by field personnel) were easily identified from digital aerial photographs, using ArcView 3.3 GIS software.

The roads selected for verification in the process described above are not a random sample of all San Juan County road data within the boundaries of the Moab Field Office. To complete the road verification process, BLM performed a statistical analysis similar to that done for Grand County:

1. Using ArcView 3.3 GIS software and road data provided by San Juan County, BLM personnel segregated all "D" roads within the Moab Field Office boundary. This process produces 1576 road segments.
2. Using the same statistics software outlined earlier, BLM was able to determine that a random sample of 309 road segments would provide a 95% confidence level.
3. Using an ArcView extension, a random sample of 309 road segments was drawn from the original 1576 segment population.
4. BLM personnel used a variety of techniques to verify the existence of the sample segments, including on-site verification and use of digitized aerial photographs from 2001. Of the 309 segments sampled, 40 were verified using the data from step 1; nine were verified using data from the 1999 Utah Wilderness Inventory; and 259 were verified from digitized aerial photographs in GIS.

[2] Road segments ranged from 2.2 to 2733.1 meters in length, with typically many smaller segments comprising one "road". Thus, the number of "roads" which the typical observer might count is greater than the sum of the segments comprising these roads.

In March, 2005, BLM received information on 54 additional segments in the Moab Field Office from San Juan County. These routes totaled 50.8 miles, and were all verified using aerial photographs in GIS. As was the case with the additional data provided by Grand County, the data provided by San Juan County was generally fainter than their original data, but still definitely in existence.

G.8.4 Road Data Received from Private Sources

On December 29, 2003, BLM received a communication from Ber Knight to the effect that he had GPS data on routes in San Juan County within the Moab Field Office that were not included in the San Juan County database. No information was provided on purpose and need for these routes, but simply on their existence. BLM has most (perhaps all) of this data in GIS. BLM initially attempted to verify this data with the same sampling techniques outlined above. It quickly became apparent that this approach would not be viable for this data, since a relatively large number of route segments could not be found. If any of these routes were to become part of the MFO transportation plan, it would be necessary to map and verify all of the new data.

To verify the Knight data, BLM started with the ArcView data in GIS. This data was then segregated to include only those routes that met the following criteria:

1. The route had to be in San Juan County, within the boundaries of the Moab Field Office, and at least a portion of it on public lands.
2. All routes lying entirely within the Canyon Rims Recreation Area (CRRA) were initially excluded. This is because San Juan County and BLM recently had reached agreement on a travel route designation plan for this area.

This process produced a population of 322 distinct route segments for verification. The segments had a mean length of 694 feet, with a range of less than 3 to more than 3700 feet. The verification process itself posed significantly greater challenges than had been posed for the Grand and San Juan County databases. Much of the Knight data had been gathered in an era when GPS technology was less advanced than today. This resulted in many route segments being discontinuous or poorly aligned with the (presumed) route being mapped. In many cases, it was difficult to determine which of several routes present in an aerial photograph was being mapped. In other cases, no route at all was visible, either due to GPS errors, or to the passage of time since the original measurement, during which the route may have become overgrown and difficult to locate. In still other cases, a Knight route turned out to be a "floating" segment, unconnected to any other route in the database. The great majority of routes (with the exception of those identical to routes in the San Juan County inventory) were very faint in aerial photographs, especially when compared to County data. Generally, routes which are difficult to locate on such photos are even more difficult to locate on the ground.

Despite these difficulties, BLM was able to locate 289 of the 322 segments. To give these data the benefit of the doubt (and to recognize the inherent measurement error in older GPS technology), BLM considered a route "verified" if it lay within at least 100 feet of a visible route, and had the same approximate configuration.

Although BLM has reached agreement with San Juan County on travel routes within the Canyon Rims Recreation Area (CRRA), BLM felt it advisable to verify the Knight routes that lay within CRRA boundaries. Many of these routes are the same as San Juan County road data, and did not

needed additional verification. Others, however, are not part of the County inventory, and thus need additional verification. Using the same techniques as discussed above, BLM was able to verify through aerial photography all but 35 of 787 Knight routes in CRRA (keeping in mind that many of these 787 routes coincided with San Juan County inventory data). Most of the routes which are not part of the County inventory are extremely faint seismic routes, and would likely be difficult for the average traveler to locate on the ground (most of these were GPS 'd some time ago, and may have been more visible at that time).

The purpose of the BLM road verification process was not to judge the condition, degree of maintenance, extent of use, or function of these routes, but simply to verify their physical existence.

The RMP administrative record contains maps of the road segments verified, photo and route logs, and photos.

In addition to the Ber Knight submission, discussed above, BLM received data from a variety of private sources as part of its scoping process. Table 8 summarizes the data received, and how it has been incorporated into the travel planning process.

Table 8. Routes Submitted by Private Sources

Submitted by:	Submission	Action
Book Cliff Rattlers	OHV routes	Routes not part of Grand County road inventory were added to the GIS travel plan database. These routes were verified through a series of field trips (discussion follows later in this document).
Dale Parriott	Motorcycle routes	Routes not part of Grand County road inventory were added to the GIS travel plan database. Some routes appear to be nearly identical to Rattler routes. Through a series of field trips, BLM was only able to find clear evidence of one of these routes ("Mel's Loop South"); with the remaining routes either not fully identified or identified for only a short segment.
Red Rock 4Wheelers (several identical requests from others)	Several Jeep routes	Routes not part of Grand County road inventory were added to the GIS travel plan database. Verified by field checks.
Jim Bulkeley	Two jeep routes	One route similar to above, but with non-existent connection (at least for full-size vehicles) to Cliffhanger route. Almost the entire first route is on State land. Second route (Devil's Slide off Hell's Revenge) not accompanied by maps, and therefore not analyzed.
Robert Telepak	Numerous routes	All routes (except one) seem to already be included in County or Red Rock 4 Wheelers road inventory data. "Missing" route added to the GIS travel plan database and verified from aerial photo.
Jeff Stevens	Two segments of a Jeep Safari route	In GIS travel plan database.
Robert Norton	Numerous routes	All MFO routes (for which data provided) in GIS travel plan database.

Table 8. Routes Submitted by Private Sources

Submitted by:	Submission	Action
Ber Knight	Numerous routes in San Juan Co/MFO but not on SJ Co road map	Verified using same approach as for Grand and San Juan inventory data. See discussion above.
SULU/SPEAR	ATV trail recommendations, including approximately 32 miles of San Juan County "D" roads in MFO	Verified; proposal also suggests (as yet) unmapped additional routes not on San Juan inventory.
Jeremy Parriott	Short route in wash from private property to San Juan road	Proposed for inclusion in travel plan; added to the GIS travel plan database for consideration
Red Rock Heritage	Comprehensive travel plan for MFO	All routes based on Grand and San Juan road inventories. Excludes numerous routes included in both inventories, in order to enhance non-motorized recreation opportunities. Update received September 7, 2004, including rationale for previously provided map. Most, but not all, closure recommendations lie within areas proposed by the group for wilderness (see “Alternatives Eliminated from Further Analysis” in Chapter 2 of the Draft RMP/EIS for more information).
Moab Trail Alliance (MTA)	Mountain bike and equestrian routes	MTA provided BLM with a table and GIS data recommending a variety of new single track mountain biking trails, and one equestrian route. Additionally, MTA provided recommendations on converting several Grand County roads to mountain bike use. The new trail proposals were forwarded for consideration in the Recreation section of the RMP, while the recommendations for changes from motorized to non-motorized status were added to the GIS travel plan database for consideration.

Table 8. Routes Submitted by Private Sources

Submitted by:	Submission	Action
Rory Tyler	OHV use in Hell-Roaring Canyon and in the Mill Creek WSA off the Steelbender 4WD route	On December 3, 2004, BLM received two maps and attached narratives outlining OHV damage in these two areas. Tyler specifically recommended that several spurs off the Steelbender route into the WSA be closed to motorized use, and that the upper reaches of Hell-Roaring Canyon also be closed to motorized use. Both problem areas addressed by Mr. Tyler are in areas currently closed to motorized travel (Mill Creek WSA), or limited to existing roads and trails (Hell Roaring Canyon). The Grand County inventory indicates no "claimed" spur at the Steelbender intersection referenced, and thus will not likely be part of the BLM travel plan under any alternative. The Grand County travel plan indicates a route up Hell-Roaring Canyon, which will be considered as part of BLM's alternative development. This route, however, does not go as far as the problem spots identified by Mr. Tyler. Should this area become closed or limited to designated routes, the travel observed by Mr. Tyler will become a law enforcement, rather than a travel plan, issue.

G.9 MOAB FIELD OFFICE TRAVEL PLAN - ALTERNATIVES DEVELOPMENT

G.9.1 GOAL

The goal of the travel plan is to provide opportunities for a range of motorized access and recreation experiences on public lands while protecting sensitive resources and minimizing conflicts among various users.

G.9.2 BLM POLICY: OHV DESIGNATIONS

OHV Designation Categories – BLM National Strategy mandates that all public lands administered by the BLM must be designated as Open, Limited, or Closed.

- Open – The BLM designates areas as "open" for intensive OHV use where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel. However, motor vehicles may not be operated in a manner causing or likely to cause significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat improvements, cultural or vegetative resources or other authorized uses of the public lands (See 43 CFR 8341).
- Limited – The "limited" designation is used where OHV use must be restricted to meet specific resource management objectives. In the current guidance context, this means limited to designated roads and trails, i.e., a route network designated by the BLM in its RMP. These routes may also be limited to:

- A time or season of use depending on the resources in the area (i.e., Threatened and Endangered Species ' habitat or nesting areas, crucial winter ranges, etc.); and/or
- Type of vehicle use (ATV, Motorcycle, four-wheel vehicle, etc.)

- Closed – The BLM designates areas as "closed" if closure to all vehicular use is necessary to protect resources, ensure visitor safety, or reduce resource or use conflicts. Access by means other than motor vehicle access is generally allowed. The Field Office Manager may allow motor vehicle access on a case-by-case basis or for emergencies.

A summary of the OHV designation categories (acreages) developed for the alternatives in the travel plan is provided in Table 9.

Table 9. Open, Limited and Closed Areas (acreages) for the Moab Field Office

Category	Alt A No Action[1]	Alt B Conservation	PROPOSED PLAN Balanced	Alt D Commodity
Closed	29,654	358,126	349,843	29,654
Limited to Existing	1,065,683	0	0	0
Limited to Designated	47,787	1,463,248	1,469,665	1,788,372
Open	678,250	0	1,866	3,348
Totals[2]	1,821,374	1,821,374	1,821,374	1,821,374

[1]No Action takes as baseline the 1985 Grand RMP and subsequent Federal Register actions.

[2]Excludes lands in the Moab Field Office managed by the BLM Vernal Field Office.

G.9.3 ROUTE DESIGNATION AND ID TEAM MEETINGS

Twenty-one ID team meetings to address route/resource conflicts and route designations were held from October 2004 through September 2005. The Field Office Manager conducted each meeting (except one), and every route proposed for designation in either Grand or San Juan County 's travel plans was evaluated. Additionally, the ID team evaluated whether there were routes not recommended for designation by either of the Counties that had a purpose and need requiring designation. The purpose of the route designation ID Team meetings was three-fold:

- Gather input from ID team on conflicts identified and mitigation proposed by each resource specialist. Identify (where known) the purpose and need for the route in question. Where conflicts with resources existed, these conflicts were discussed and resolved during the meeting, and final proposals for the various alternatives were established.
- Formulate three action alternatives for the travel plan. The Conservation alternative emphasizes resource conflicts over the purpose and need for the route. The Commodity alternative emphasizes the purpose and need for the route over resource conflicts. The Balanced alternative weighs both resource conflicts and the purpose and need.
- Develop a designed system of designated routes that fulfills the management goal for the planning area.

The RMP administrative record contains details of the conflicts identified for each route or route segment and BLM's conclusions as to designation, by alternative.

The ID team process was as follows. The Field Office Manager conducted all but one meeting. Each county's road inventory and travel recommendations were examined area by area, usually by USGS quad. In addition to County inventories, proposals by private groups were examined in the same fashion. Grand County, in its travel plan, had proposed that a large number of "D" roads in its inventory not be designated for motorized travel. In these cases, the County had been unable to identify a purpose and need for the routes in question. Many of these routes were considered redundant, in that other routes existed in the vicinity that were more suitable for motorized travel. In most cases, BLM agreed with the County's characterization of these routes, and did not include these in any of the action alternatives for designation. These routes were 2,594.8 miles in total. Routes proposed by either County for motorized designation were evaluated by the ID team for purpose and need (in consultation with the Counties), as well as potential resource concerns.

As discussed above, resource specialists identified potential conflicts with proposed routes, and characterized the severity of the conflict. In general, routes with serious resource conflicts (or less severe, but multiple conflicts), and no obvious purpose and need, were recommended for non-designation. There were many routes where resource concerns conflicted with established purpose and need. These routes typically were recommended for non designation in the Conservation alternative, but were designated in the Commodity alternative. Whether or not to designate a route in the Balanced alternative was decided by a weighing of the route's importance against the severity of the identified resource conflicts. In many cases, the potential conflict was resolved by reducing the number of parallel and redundant routes. Throughout the process, representatives of Grand and San Juan Counties were involved, and, in general, concurred with staff recommendations. The GIS data identifies those route segments which are recommended for non-designation, by alternative, and the principal resource concern(s) identified. These GIS files identify conflicts as cultural, riparian, recreation, soils, wilderness, and/or wildlife. The following sections explain the conflicts that existing routes could pose to these resources. In addition to resource issues identified through the ID team process, there is a large body of literature identifying potential impacts from OHV travel on a variety of resources.

The United States Geologic Survey (USGS) has compiled an extensive review of the available literature on the effects of OHV travel on public lands[3]. Their literature and Internet searches yielded approximately 700 peer-reviewed papers, magazine articles, agency and non-governmental reports, and internet websites regarding effects of OHV use as they relate to the Bureau of Land Management's (BLM) standards of land health. In its Executive Summary, the USGS summarized their finding for a variety of natural resources and also socioeconomic implications as follows:

G.9.3.1 SOILS AND WATERSHED

The primary effects of OHV activity on soils and overall watershed function include altered soil structure (soil compaction in particular), destruction of soil crusts (biotic and abiotic) and desert pavement (fine gravel surfaces) that would otherwise stabilize soils, and soil erosion. Indicators of soil compaction discussed in the OHV effects literature include soil bulk density (weight per unit of volume), soil strength (the soil's resistance to deforming forces), and soil permeability

[3] *Environmental Effects of Off-Highway Vehicles on Bureau of Land Management Lands: A Literature Synthesis, Annotated Bibliographies, Extensive Bibliographies, and Internet Resources*, Douglas S. Ouren et al., United States Geological Survey, Department of the Interior, 2007.

(the rate at which water or air infiltrate soil). Generally, soil bulk density and strength increase with compaction, whereas permeability decreases with compaction. As soil compaction increases, the soil's ability to support vegetation diminishes because the resulting increases in soil strength and changes in soil structure (loss of porosity) inhibit the growth of root systems and reduce infiltration of water. As vegetative cover, water infiltration, and soil stabilizing crusts are diminished or disrupted, the precipitation runoff rates increase, further accelerating rates of soil erosion.

G.9.3.2 VEGETATION

Plants are affected by OHV activities in several ways. As stated above, soil compaction affects plant growth by reducing moisture availability and precluding adequate taproot penetration to deeper soil horizons. In turn, the size and abundance of native plants may be reduced. Above-ground portions of plants also may be reduced through breakage or crushing, potentially leading to reductions in photosynthetic capacity, poor reproduction, and diminished litter cover. Likewise, blankets of fugitive dust raised by OHV traffic can disrupt photosynthetic processes, thereby suppressing plant growth and vigor, especially along OHV routes. In turn, reduced vegetation cover may permit invasive and/or non-native plants—particularly shallow rooted annual grasses and early successional species capable of rapid establishment and growth—to spread and dominate the plant community, thus diminishing overall endemic biodiversity.

G.9.3.3 WILDLIFE AND HABITAT

Habitats for native plants and animals, including endangered and threatened species, are impacted by OHVs in several ways. A salient effect is habitat fragmentation and reduced habitat connectivity as OHV roads and trails proliferate across the landscape. Reduced habitat connectivity may disrupt plant and animal movement and dispersal, resulting in altered population dynamics and reduced potential for recolonization if a species is extirpated from a given habitat fragment. Wildlife is also directly affected by excessive noise (decibel levels/noise durations well above those of typical background noise) and other perturbations associated with OHV activities. Disturbance effects range from physiological impacts—including stress and mortality due to breakage of nest-supporting vegetation, collapsed burrows, inner ear bleeding, and vehicle-animal collisions—to altered behaviors and population distribution/dispersal patterns, which can lead to declines in local population size, survivorship, and productivity.

G.9.3.4 WATER QUALITY

The effects of OHV activities on water quality can include sedimentation (deposited solids), turbidity (suspended solids), and pollutants within affected watersheds. Sedimentation increases because compacted soils, disrupted soil crusts, and reduced vegetation cover can lead to increased amounts and velocities of runoff; in turn, this accelerates the rates at which sediments and other debris are eroded from OHV-use areas and flushed to aquatic systems downslope. Pollutants associated with deposition of OHV emissions and spills of petroleum products may be adsorbed to sediments, absorbed by plant material, or dissolved in runoff; once mobilized, these contaminants may enter aquatic systems.

G.9.3.5 AIR QUALITY

Air quality is affected when OHV traffic raises fugitive dust and emits by-products of combustion. Because wind can disperse suspended particulates over long distances, dust raised by OHV traffic can blanket plant foliage and disperse dust-adsorbed contaminants well beyond a given OHV-use area. Primary combustion by-products potentially affecting air quality in OHV use areas include (but are not limited to) polycyclic aromatic hydrocarbons, sulfur dioxide (SO_2), nitrogen oxides (NO_x), and ozone (O_3). Although leaded gasoline has not been used in the United States since 1996, lead emissions deposited prior to the ban on leaded gasoline may persist for decades and continue impacting ecosystems as wind and water erosion continue to mobilize lead and other contaminants downwind (or downslope) of contaminated soils.

G.9.3.6 SOCIOECONOMIC IMPLICATIONS

Although not one of BLM's land health considerations, the socioeconomic implications of OHV use have significant direct and indirect effects on land health. As the popularity of OHV recreation increases, socioeconomic factors become increasingly important considerations in understanding and mitigating the overall effects of OHV use on land health. OHV recreation can have significant economic value to local communities where and when OHV use is popular; however, the economic costs to those communities remain unknown. OHV use also can lead to conflicts among different land-users—both OHV users and people seeking non-motorized forms of recreation—within OHV-use areas and nearby areas. Crowding of designated OHV areas may encourage unauthorized use in closed areas, and adjacent or overlapping use types may cause dissatisfaction or discourage recreation altogether, which can diminish public support for land management programs.

The report goes on for approximately 60 pages summarizing relevant literature. The references cited section runs 150 pages. The USGS concludes that the impacts of OHV use on a variety of resources are diverse and potentially profound. They argue that the results of impacts studies in the immediate vicinity of single trails and OHV sites have been reasonably consistent in documenting potentially negative impacts. They conclude that the results are less conclusive for wildlife, air and water quality than for the other resources examined. They emphasize the need for additional research on the cumulative effects on natural resources of OHV use, but speculate that the impacts could be greater in a network of OHV routes than for a single route.

G.9.3.7 CULTURAL

Existing routes may go through identified cultural or paleontological sites. Use of these routes may hasten erosion, exposing more of the site to natural or human-caused damage. Cross-country travel in particular can exacerbate this problem. Site densities may be such that any access to the area could put such resources at risk. Routes identified with cultural conflicts totaled 136.9 miles.

G.9.3.8 RECREATION

Scoping has shown a desire on the part of some publics for more areas to be managed for non-motorized recreation. In response to this, BLM may decide to manage certain areas for more primitive forms of recreation, or to reduce user conflicts between motorized and non-motorized users. In such areas, and under different plan alternatives, the existence of certain roads (or a

redundancy of such) may pose a conflict with underlying recreation management goals and objectives. Routes identified with recreation conflicts totaled 88.3 miles.

G.9.3.9 RIPARIAN

There are numerous streams, rivers, and other watercourses that run through the "limited" OHV category area. Routes are often located in riparian areas in canyons and drainage bottoms to avoid the more difficult uplands. Use of these routes can contribute to loss of riparian vegetation, degrade stream banks, and lead to erosion problems. There are also numerous washes within the "limited" OHV category area that do not support riparian vegetation, and merely provide a channel for water during storm events. Compaction of soils in these washes can lead to accelerated flood velocity, further contributing to erosion and sedimentary transfer. Routes identified with riparian conflicts totaled 118.9 miles; routes identified with floodplain conflicts totaled 230.2 miles.

G.9.3.10 SOILS

The primary watershed concern identified in the RMP (1985) was the prevention and reduction of salinity and sedimentation from public lands. Any surface disturbing activity, including routes, on sensitive soils will cause increases in salinity and sedimentation levels.

Roads and off-road travel can cause impacts to watersheds by impacting soil health and water quality. Impacts can include soil compaction, decreased soil stability, loss of vegetation and biotic soil crusts, loss of functioning floodplains, accelerated erosion, water quality degradation, and increased salinity contributions.

In order to meet Utah Rangeland Health Standards, surface disturbing activities, including roads, should be limited on highly saline soils, highly erodible soils, steep slopes, and drought intolerant soils. Routes identified with soils conflicts of all types totaled 662.5 miles.

G.9.3.11 WILDERNESS

Wilderness study areas (WSA) are managed under the BLM's Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP) so as not to impair their suitability for preservation as wilderness. Each of these WSAs has wilderness characteristics. They are greater than 5,000 acres in size, natural in appearance, and provide outstanding opportunities for solitude and/or primitive recreation. Many also possess supplemental wilderness values including cultural resources and wildlife values.

The IMP specifies that, at a minimum, motorized vehicles are only allowed on pre-existing inventoried ways in WSAs. Use of vehicles off boundary routes and on these ways is permitted only for emergencies, search and rescue operations, official purposes for the protection of human life, safety, and property; protection of lands and their resources, and to build and maintain structures and installations permitted under the IMP.

Today's OHVs are more varied, powerful machines capable of accessing steeper and rougher terrain than was possible over 20 years ago when the WSAs were designated. Motorized use in and around certain WSAs has increased dramatically, and involves sports utility vehicles (SUVs), trucks, all terrain vehicles (ATVs), and motorcycles. As discussed earlier, designating motorized routes within WSAs can lead to the impairment of wilderness character, whether

through increased risks of off-road travel or intruding upon the solitude that wilderness users seek (See also 7.2.4). Routes identified with wilderness conflicts totaled 51.5 miles.

G.9.3.12 WILDLIFE

In general, roads can produce threats to wildlife populations due to habitat fragmentation, stress caused by human activities at critical times such as lambing, and impacts to resources (e.g., water, vegetation) upon which wildlife depend. Off-road travel can exacerbate these effects. Several species in the Moab Field Office may be particularly susceptible to human disturbance.

Big Game (bighorn sheep, deer, elk, pronghorn)

Disturbance from human activity can cause increased stress, making animals more susceptible to disease and parasites, and leading to habitat abandonment and fragmentation of habitat. Within bighorn sheep habitat, the Range-wide Plan for Managing Habitat for Desert Bighorn Sheep on Public Lands (U.S. Department of the Interior, BLM, undated) recommends that new road construction be minimized and roads no longer serving a definite purpose be closed. The Plan further recommends that off-road vehicles be limited to existing roads and trails.

Birthing grounds are, by far, the most crucial habitat. Additional stress and pressure from human activities can deplete energy reserves, as well as disease and parasite resistance in pregnant and lactating animals with young at their sides. This reduces the survival rate of newborns.

White-tailed and Gunnison Prairie Dogs

Populations have been decimated by sylvan plague, and restoration of habitat is required for re-colonization. Limiting new roadways and decommissioning unnecessary roads, as well as reclaiming illegal trails, will help to lessen the impacts to prairie dog habitat fragmentation.

Greater and Gunnison Sage-grouse

Within the Moab FO, reduction of human disturbance and fragmentation is needed to protect remaining sage-grouse habitat. Limiting new roadways, decommissioning unnecessary roads and reclaiming illegal trails will help reduce habitat fragmentation and protect the birds and their habitat from human disturbance.

Routes identified with wildlife conflicts totaled 129.9 miles, of which 52.6 miles conflicted with bighorn sheep habitat.

Table 10. Miles of Route Designated/not designated for Motorized Travel Due To Resource Conflicts, By Alternative

Resource Conflicts		Alternatives			
		A	B	PROPOSED PLAN	D
Cultural	Designated	148.2	101.7	131.6	144.6
	Not Designated		46.5	16.6	3.6
Recreation	Designated	178.2	57.6	118.4	148.5
	Not Designated		120.6	59.8	29.7

Riparian	Designated	321.9	110.3	269.8	305.2
	Not Designated		179.6	50.1	14.7
Soils	Designated	960.3	622.7	792.8	909.3
	Not Designated		337.6	167.5	51.0
Wilderness	Designated	82.5	0.0	1.7	16.0
	Not Designated		82.5	80.8	66.5
Wildlife	Designated	367.4	235.1	315.6	356.3
	Not Designated		132.3	51.8	11.1

G.9.4. MECHANIZED ROUTES (SEE MAPS OF MECHANIZED ROUTES)

Mechanized use includes mechanical devices such as bicycles that are not motorized. Moab BLM concluded that routes not designated for motorized travel generally would be available for mechanized, foot, and equestrian travel. As with all designations in the travel plan, BLM reserves the right to change designations in the future, should resource issues warrant such action. Exceptions to permitting mechanized use on routes not designated for motorized use are "ways" in WSAs. In those cases where motorized use on such routes is prohibited, the same prescriptions would apply to mechanized use, as a means of enhancing wilderness values. The same would apply to routes not designated for motorized use in those areas the BLM chooses to manage to preserve wilderness characteristics (in those alternatives of the DEIS containing such areas). In addition, routes not designated for motorized use will not be available for mechanized use in areas identified as hiking or other non-mechanized focus areas.

Exceptions to the non-mechanized policy in WSAs include the Hidden Valley trail and the Porcupine Rim trail (single-track portion). Under IMP, BLM reserves the right to close these trails to mechanized use, should such use lead to degradation of resource values.

G.9.5 FOOT AND EQUESTRIAN TRAVEL

Foot and equestrian travel would continue to be allowed in all areas of the Field Office, except as specifically prohibited. Under all alternatives, the following trails would be open to foot traffic only:

- Negro Bill Canyon Trail
- Hunter Canyon Trail
- Fisher Towers Trail
- Amphitheater Loop Trail
- Mill Canyon Dinosaur Trail
- Copper Ridge Sauropod Trail
- Corona Arch Trail
- Windwhistle Nature Trail

Under all alternatives, the following trails would be open to foot and equestrian traffic only:

- Trough Springs Trail
- Onion Creek Benches Trail
- Ida/Stearns Gulch Equestrian Trail System
- Castle Creek Equestrian Trail
- Rattlesnake Trail above Nefertiti Boat Launch
- Upper portions of Seven Mile Canyons
- Red Rock Horse Trails (near Ken 's Lake)

G.10 Plan Maintenance and Changes to Route Designations

The RMP must include indicators to guide future plan maintenance, amendments, or revisions related to OHV area designations or the approved road and trail system within "Limited" areas. Indicators could include results of monitoring data, new information, or changed circumstances (IM 04-005, Attachment 2). Actual route designations within the "Limited" category can be modified without completing a plan amendment, although NEPA compliance is still required. The Federal regulations at 43 CFR 8342.3 state:

> The authorized officer shall monitor effect 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 action taken pursuant to the regulation in this part.

Within the RMP, Field Offices must establish procedures for making modifications to their designated route networks. Because future conditions may require the designation or construction of new routes or closure of routes in order to better address resources and resource use conflicts, a Field Office will expressly state how modification would be evaluated. As noted in IM 2004-061, plan maintenance can be accomplished through additional analysis and land-use planning, e.g., activity level planning. BLM will collaborate with affected and interested parties in evaluating the designated road and trail network for suitability for active OHV management and envisioning potential changes in the existing system or adding new trails that would help meet current and future demands. In conducting such evaluations, the following factors would be considered:

- Routes suitable for different categories of OHVs including dirt bikes, ATVs, dune buggies, and 4-wheel drive touring vehicles, as well as opportunities for joint trail use;
- Needs for parking, trailheads, informational and directional signs, mapping and profiling, and development of brochures or other materials for public dissemination;
- Opportunities to tie into existing or planned route networks;
- Measures needed to avoid onsite and offsite impacts to current and future land-uses and important natural resources; among others, issues include noise and air pollution, erodible soils, stream sedimentation, non-point source water pollutions, listed and sensitive species' habitats, historic and archeological sites, wildlife, special management areas, grazing operations, fence and gate security, needs of non-motorized recreationists, and recognition of property rights for adjacent landowners;

- Public land roads or trails determined to cause considerable adverse effects or to constitute a nuisance or threat to public safety would be considered for relocation or closure and rehabilitation after appropriate coordination with applicable agencies and partners.
- Those areas managed as Closed will not be available for new motorized or mechanized route designation or construction.

Regulations at 43 CFR 8342.2 require BLM to monitor the effects of OHV use. Changes should be made to the Travel Plan based on the information obtained through monitoring. Procedures for making changes to route designations after the ROD is signed are established in the RMP. Site specific NEPA documentation is required in order to change the route designations in this Travel Plan.

G.11 COOPERATING AGENCIES AND OTHER COORDINATION

A Cooperating Agency is an agency other than the lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a major federal action.

G.11.1 COOPERATING AGENCIES

Copies of meeting minutes are found in the BLM Moab Field Office Administrative Record.

Grand and San Juan Counties. As described in this document, both counties have played integral roles in the Moab Field Office's travel plan development.

State of Utah, State Parks. Meetings were held with State Parks personnel regarding the travel plan.

State of Utah, School Institutional Trust Land Administration (SITLA). A meeting with SITLA representatives held was at the Moab Field Office. On-going consultations continue to address BLM and SITLA management concerns.

State of Utah, Department of Wildlife Resources (DWR). DWR provided input to the draft alternatives matrix.

State of Utah, State Historic Preservation Office (SHPO). The USHPO is consulted on cultural aspects both through the RMP process and for all pertinent activity level, site-specific NEPA where cultural resources are concerned.

U.S. Fish and Wildlife Service (USFWS). Letters from the USFWS concerning on-going issues with sensitive species are the basis for choices made by the ID team in evaluating wildlife conflicts.

National Forest Service, Manti La Sal National Forest.

National Park Service, Arches and Canyonlands National Parks.

G.11.2 OTHER COORDINATION

Native American Tribes. Native American Tribes are consulted on all site-specific NEPA where there are cultural concerns.

BLM Monticello Field Office. Coordination with the Monticello FO has been consistent from the outset of travel planning and the RMP process. Edge matching of boundaries has been accomplished.

Other Adjoining BLM Field Offices. The Moab Field Office has contacted the Vernal, Grand Junction, Montrose and Durango Field offices in the course of travel plan development (with the exception of Vernal, these Field Offices' adjoining areas are currently Open to OHV travel).

G.12 IMPLEMENTATION PROCESS

Implementation decisions are actions to implement land-use plans and generally constitute BLM's final approval allowing on-the-ground actions to proceed. These types of decisions are based on site-specific planning and NEPA analyses and are subject to the administrative remedies set forth in the regulations that apply to each resource management program of the BLM. Implementation decisions are not subject to protest under the planning regulations. Instead, implementation decisions are subject to various administrative remedies. Where implementation decisions are made as part of the land-use planning process, they are still subject to the appeals process of other administrative review as prescribed by specific resource program regulations after BLM resolves the protests to land-use plan decisions and make a decision to adopt or amend the RMP.

Travel planning and implementation process includes the following:

- A map of roads and trails for all travel modes.
- Notations of any limitation for specific roads and trails.
- Criteria to select or reject roads and trails in the final travel management network, add new roads or trails, and to specify limitations.
- Guidelines for management, monitoring, and maintenance of the system.
- Needed easements and rights-of-ways (to be issued to the BLM or others) to maintain the existing road and trail network providing public land access.

In addition, travel management networks should be reviewed periodically to ensure that current resource and travel management objectives are being met (43 CFR 8342.3).

In the final RMP decisions, designated OHV routes will be portrayed by a map entitled "Field Office Travel Plan and Map". This map will be the basis for signing and enforcement. The Field Office will prioritize actions, resources, and geographic areas for implementation. The implementation goals include completing signage, maps, public information, kiosks, and working with partners.

G.13 REFERENCES

- 43 C.F.R. Part 8340
- BLM Moab and Monticello Field Office, Planning Bulletin #3 – Request for Route Data, November 1, 2003
- BLM Moab and Monticello RMP Revisions, Scoping Summary, July 2004
- BLM Moab Field Office, Analysis of Management Situation (AMS), January 2005
- BLM Land-use Planning Handbook 1601

- NRCC Technical Team, State-wide OHV Trail Signing Standards (from Utah BLM State Office, September 5, 2001
- Natural Resource Coordinating Council (NRCC) Utah Interagency OHV Steering Committee, Final Report, April 1, 2004
- Standards for Rangeland Health of BLM Land in Utah, May 1997
- U.S. Department of the Interior, BLM, Interim Management Policy for Lands Under Wilderness Review, H-8559-1
- U.S. Department of the Interior, BLM, National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001
- Utah OHV Transactions by County and Fiscal Year, 2005

ATTACHMENT A: DEFINITIONS

All-Terrain Vehicle (ATV) – A wheeled or tracked vehicle, other than a snowmobile or work vehicle, designed primarily for recreational use of the transportation of property or equipment exclusively on undeveloped road rights of way, marshland, open country or other unprepared surfaces. (BLM, National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001)

Closed Designations – Areas or trails are designated closed if closure to all vehicular use is necessary to protect resources, promote visitor safety, or reduce use conflicts. (8342.06 E)

Considerable Adverse Impacts – Any OHV related adverse environmental impact that causes: (a) significant damage to cultural or natural resources, including but not limited to historic, archaeological, soil, water, air, vegetation and scenic values, or (b) significant harassment of wildlife and/or significant disruption of wildlife habitats; or (c) significant damage to endangered or threatened species or their habitat, or (d) impairment of wilderness suitability; *and* is irreparable due to the impossibility or impracticality of performing corrective or remedial actions. The significance of these damages is determined on a case-by-case basis by BLM's authorized officers in the field (normally District [Field Office] Managers) in the context of local conditions. (8341.05)

Designation – The formal identification of public land areas and trails where off-road vehicles use has been authorized, limited, or prohibited through publication in the *Federal Register*. The types of designation used by the BLM are open, limited, or closed to off-road vehicle use. (8342.05)

Emergency Limitations or closures – Limiting use or closing areas and trails on public lands to ORV use under the authority of 43 CFR 8341.2. Such limitations or closures are not OHV designations. (8341.05)

Implementation Plan - A site-specific plan written to implement decisions made in the land-use plan. An implementation plan usually selects and applies best management practices (BMP) to meet land-use plan objectives. Implementation plans are synonymous with "activity" plans. Examples of implementation plans include interdisciplinary management plans, habitat management plans, and allotment management plans. (BLM, National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001)

Land-use Plan: A set of decisions that establish management direction for land within an administrative areas, as prescribed under the planning provisions of FLPMA; and assimilation of land-use plan-level; decisions developed through the planning process outlines in 43 CFR 1600, regardless of the scale at which the decisions were developed. (BLM, National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001)

Limited Designations – The limited designation is used where OHV use must be restricted to meet specific resource management objectives. Examples of limitations include: number or types of vehicles; time or season of use; permitted or licensed use only; use limited to designated roads and trails; or other limitations if restrictions are necessary to meet resource management objectives including certain competitive or intensive use areas which have special limitations. (8342.06 F)

Mechanized Travel – Moving by a mechanical device such as a bicycle, not powered by a motor

Minimize OHV Damage – To reduce ORV effects to the maximum extent feasible short of eliminating ORV use, consistent with established land management objectives as determined by economic, legal, environmental, and technological factors. (8342.05)

Motorized Travel – Moving by means of vehicles that are propelled by motors such as cars, trucks, OHVs, motorcycles, etc.

Non-Motorized Travel – Moving by foot, stock or pack animal, boat, or mechanized vehicle such as a bicycle

Off-Highway Vehicle (OHV): OHV is synonymous with, and the more current term for, Off-Road Vehicles (ORV). ORV is defined in 43 CFR 8340.0-5(a): Off-road vehicle means any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: 1) Any non-amphibious registered motorboat; 2) Any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; 3) Any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; 4) Vehicles in official use; and 5) Any combat or combat support vehicle when used in times of national defense emergencies.

OHV area designations: Refers to the land-use plan decisions that permit, establish conditions, or prohibit OHV designations (43 CFR 8342.1). The CFR requires all BLM-managed public lands to be designated as open, limited, or closed to off-road vehicles, and provides guidelines for designation. The definitions of open, limited, and closed are provided in 43 CFR 8340-5 (f), (g), and (h), respectively.

Open Designations – Open designations are used for intensive ORV use areas where there are no special restrictions or where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel. (8342.06 D)

RMP area - Most RMPs cover a large planning and management area. As a result, the planning area may be divided into smaller areas, each with differing values, issues, needs and opportunities that may warrant differing management prescriptions. (Attachment to IM 2004-005)

Road Definitions (State of Utah Highway Codes 27-12-21, 22, 23):

Class A: State Highways

Class B: County roads constructed and maintained from the state road fund.

Class C: City streets within the corporate limits of the cities and towns of the state that are not class A or class B roads.

Class D (27-15-1): Any road, way, or other land surface route that has been or in established by use or constructed and is maintained (passable for vehicles with four or more wheels) to proved usage by the public that is neither a class A, class B, or class C road.

Road and Trail Selection - For each limited area, the BLM should choose a network of roads and trails that are available for motorized use, and other access needs including non-motorized and non-mechanized use, consistent with the goals and objectives and other consideration described in the plan. (Attachment to IM 2004-005)

Road and Trail Identification: For the purposes of this guidance, road and trail identification refers to the on-the-ground process (including signs, maps and other means of informing the public about requirements) of implementing the road and trail network selected in the land-use plan or implementation plan. Guidance on the identification requirements is in 43 CFR 9342.2©. (Attachment to IM 2004-005)

"Ways" - See pp 11-12 Section 7.2.4 – Route Designations in Wilderness Study Areas.

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