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Labyrinth/Gemini Bridges Travel Management Plan Environmental Assessment

DOI-BLM-UT-Y010-2020-0097-EA

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1. INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

The Labyrinth/Gemini Bridges Travel Management Plan (TMP) will designate a comprehensive travel network of motorized routes and trails, and provide for the long-term operation, monitoring, and maintenance of the network within the Labyrinth/Gemini Bridges Travel Management Area (TMA).

This Environmental Assessment (EA) analyzes potential impacts on the TMA's natural and human environment and is focused on issues raised during scoping. The final selected network will be developed from the range of alternatives considered in this EA and may include the modification of an alternative or a combination of the alternatives.[1] This EA is prepared in compliance with the National Environmental Policy Act (NEPA) and will assist the Bureau of Land Management (BLM) decision maker in determining whether any significant impacts could result from implementing the project. Following a public review and the BLM making any appropriate changes to the EA, if there are no significant impacts anticipated, the BLM will prepare a Finding of No Significant Impact and a signed Decision Record will be issued. The Decision Record documents the decision regarding the selected travel route network. The TMP may then be implemented after all other program-specific procedural requirements (i.e., any appeals procedures) have been met.

1.2 BACKGROUND

The BLM's Moab Field Office (MFO) is proposing to designate routes within the TMA to form an off-highway vehicle (OHV) travel route network. The proposed network alternatives were developed from 1,127.7 miles of evaluated travel routes on an estimated 303,994 acres of BLM lands in the Labyrinth/Gemini Bridges TMA (see map in Appendix J). Though the term "OHV" is generally associated with off-road vehicles, the regulatory definition includes full-size cars and trucks as well as utility terrain vehicles (UTVs), all-terrain vehicles (ATVs), motorcycles, e-bikes[2], etc., *when in use by the general public*; the regulations exempt military, fire, emergency, or law enforcement vehicles from the OHV definition while being used for emergency purposes. Also exempt are vehicles in official BLM use and those that have been authorized by BLM or otherwise officially approved.

The designated network will be implemented, operated, and maintained according to the network's route designations and the TMP Implementation Guide (see Appendix L). The travel network route designations chosen for this project will replace the route designations assigned in the TMA by the BLM's 2008 Moab Field Office Record of Decision and Approved Resource Management Plan (2008 RMP) and TMA route designations that have been modified from those established in the 2008 RMP. For details on these earlier route designation efforts, see pages 18-

[1] See Section 2.1.4 for details on route designations within the range of alternatives.
[2] Under 43 C.F.R. § 8340.0-5(a)(5), e-bikes are considered OHVs unless an authorized officer expressly determines, as part of a land-use planning or implementation-level decision, that e-bikes should be treated the same as non-motorized bicycles.

20 and 36-37 as well as Appendix N (page N-1) of the 2008 RMP (BLM 2008c). The travel network alternatives in this EA incorporate updated consideration and evaluation of all inventoried routes in the TMA and establish a proposed network of routes designated for public OHV uses. Any subsequent route designation(s) will be completed in compliance with NEPA requirements.

1.3 PURPOSE AND NEED

The BLM needs to comply with the 2017 settlement agreement reached in *Southern Utah Wilderness Alliance, et al. v. U.S. Department of the Interior, et al.*, U.S. District Court (D. Utah) Consolidated Case No. 2:12-cv-257, hereinafter referred to as the 2017 Settlement Agreement.[3] As part of the 2017 Settlement Agreement, the BLM committed to issue a new TMP for the Labyrinth/Gemini Bridges TMA. Moreover, the proposed TMP helps the BLM comply with Presidential Executive Orders 11644 and 11989, which state that TMPs be developed to protect the natural resources of public lands, to promote the safety of all users of those lands, and to minimize conflicts among the various users of those lands.

The purpose of revisiting the route designations within the Labyrinth/Gemini Bridges TMA is to ensure routes designated in the 2008 RMP continue to meet the goals and objectives of the resource values and uses and determine if the routes still have a purpose and need.

This proposed TMP would bring travel management in the TMA into compliance with the 2017 Settlement Agreement and the OHV regulations including 43 CFR § 8342.1 route designation criteria. It would provide for a variety of public OHV opportunities in conformance with applicable laws, regulations, and BLM travel management policies (see Section 1.5 and Appendix D for more details on compliance). Additionally, a comprehensive TMP Implementation Guide (Appendix L) would set direction for long-term operation and maintenance of the network, and for enhancements such as new signing and maps to aid users in navigating the network.

1.4 TMA OVERVIEW

The TMA is comprised of four separate units located north and west of Moab (see map in Appendix J). The TMA is generally west of Arches National Park, east of the Green River, south of Interstate 70 and north of the Island in the Sky District in Canyonlands National Park. The majority of the TMA is west of U.S. Highway 191 while smaller sections including Klondike Bluffs and Bar M are east of Highway 191. The TMA includes popular destinations and recreation opportunities such as Poison Spider Mesa, Bar M, Klondike Bluffs, the State Route 313 corridor, Gemini Bridges, Mill Canyon, Mineral Point, White Wash Sand Dunes open OHV area[4], and the Green River. Traffic counts on State Route 313, which is the principal access into the TMA, show that use of the TMA peaks each spring and fall (BLM 2022b). TMA features include canyons, mesas, arches, and scenic byways, and the area is popular for many types of

[3] The 2017 Settlement Agreement can be accessed online at https://www.doi.gov/sites/doi.gov/files/agreements-settlements/document/suwa-ex-1-settlement-agreement-101718.pdf

[4] The White Wash Sand Dunes Open Area (1,866 acres) is within the TMA. Routes are not designated within the area because it is open to cross-country OHV use.

motorized and non-motorized recreation, including scenic driving, OHV use, mountain biking, BASE jumping, hiking, and equestrian use. The entire TMA is managed under the 2008 RMP as a Special Recreation Management Area (SRMA) and contains a number of focus areas and many high-use routes. It also contains the 4,980-acre Ten Mile Wash Area of Critical Environmental Concern (ACEC) and a 1,081-acre portion of the Highway 279 / Shafer Basin / Long Canyon ACEC.

As part of its 2008 RMP process, an interdisciplinary team (IDT) of BLM specialists and cooperators completed a travel plan for the entire MFO (see Appendix N of the 2008 RMP). Of the 1,886.7 miles of inventoried routes considered for designation as part of the 2008 travel planning effort, the final 2008 Travel Plan evaluated 1,886.7 miles of inventoried routes and designated 1,120.7 miles for OHV use. In the intervening years, the 2008 Travel Plan has been amended as part of ongoing adaptive management (see Section N.10 in Appendix N of the 2008 RMP for more on this process); some routes have been added to the 2008 Travel Plan because of a demonstrated purpose and need while others have been removed because of redundancy or because they showed no use and are reclaiming. The 2017 Settlement Agreement required the BLM to take a revised look at the designations in the TMA, consider travel-related impacts, and formulate and adopt a revised designated route network.

The BLM expects that once the new TMP is in place, additional efforts may be pursued to improve the designated nonmotorized trail network, as needed. Note that, except for mountain bike use, non-motorized use of the existing route network is allowed regardless of designation (i.e., hikers and horseback riders are not restricted to designated travel routes). For the Labyrinth/Gemini Bridges EA, the BLM will continue to address changes to non-motorized designations on an as-needed basis. The MFO has a long track record of considering non-motorized routes via NEPA reviews when presented with reasonable requests.

Table 1.1, below, depicts a breakdown of the major jurisdictional surface management categories in the TMA. Though the BLM is only proposing travel route network designations on BLM-administered lands, routes, actions, resources, and resource uses on these other jurisdictional lands are considered as part of the BLM's travel management cumulative effects analysis.

Table 1.1: TMA Approximate Acreage by Major Landowner/Agency Administrator

Jurisdiction	Acres	% of TMA
BLM	303,994	90.2%
SITLA[5]	32,400	9.6%
Private	649	0.2%
Other	75	0.02%
Total	337,118	100%

1.5 CONFORMANCE WITH MANAGEMENT PLANS AND POLICIES

The action alternatives described in this document are in conformance with applicable management direction, including the 2008 RMP, which provides overarching management

[5] SITLA is an acronym for Utah's School and Institutional Trust Lands Administration.

decisions, goals, and guidance for this travel planning effort. RMP decisions and goals to which this project conforms are listed below.

Table 1.2: Key ROD/RMP Travel-Related Management Decisions and Goals

Transportation	
TRV-2	BLM, in preparing its RMP designations and its implementation-level travel management plans, is following policy and regulation authority found at: 43 CFR Part 8340; 43 CFR Subpart 8364; and 43 CFR Subpart 9268.
TRV-3	Provide opportunities for a range of motorized recreation experiences on public lands while protecting sensitive resources and minimizing conflicts among various users. Identification of specific designated routes will be initially established through the chosen Travel Plan accompanying this RMP (see Appendix N) and may be modified through subsequent implementation planning and project planning on a case-by-case basis. These identified routes will be available regardless of other management actions. These adjustments will occur only in areas with limited route designations and will be analyzed at the implementation planning level. These adjustments will be done through a collaborative process with local government and will include public review of proposed route changes. Site-specific NEPA documentation will be required for changes to the route designation system.
TRV-5	BLM could impose limitations on types of vehicle allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife, wildlife habitat, cultural or vegetative resources, especially by off-road travel in an area that is limited to designated roads.
TRV-6	OHV access for game retrieval, antler collection and dispersed camping will only be allowed on designated routes (designated routes/spurs and have been identified specifically for dispersed camping; parking areas associated with dispersed campsites will be marked during travel plan implementation). Adherence to the Travel Plan is required for all activities, except where otherwise explicitly permitted.
TRV-7	Only designated roads and managed open areas are available for motorized commercial and organized group use (see Maps 2 and 3 for route designations).
TRV-8	Where the authorized officer determines that off-road vehicles are causing or will cause considerable adverse impacts, the authorized officer shall close or restrict such areas. The public will be notified as to these closures and restrictions.
TRV-9	Any routes that are not baseline routes will be signed "Closed" on the ground. Such routes will be considered as impacts to the area's natural character, and use of such routes will be considered cross country use and not allowed. Non-inventoried routes should be rehabilitated.
The proposed action also supports other RMP Transportation management actions, including TRV-4, TRV-10, and TRV-11	
Recreation and Off-Highway Vehicles	
REC-2	Where unacceptable damage to natural or cultural resources by recreational use is anticipated or observed, BLM will seek to limit or control activities by managing the nature and extent of the activity or by providing site improvements that make the activity more sustainable or by a combination of management controls and facility development. Such management actions will seek to reduce or eliminate the adverse impact while maintaining the economic benefits associated with a wide range of recreation uses.
REC-3	BLM will consider and, where appropriate, implement management methods to protect riparian resources, special status species, and wildlife habitat while enhancing recreation opportunities. Management methods may include limitation of visitor numbers, camping and travel controls, implementation of fees, alteration of when use takes place, and other similar actions to be approved through normal BLM procedures.
REC-5	Recreational off-highway vehicle (OHV) and mechanized travel will be consistent with area and route designations described in the travel management plan. BLM will work with agency and government officials and permit holders to develop procedures, protocols, permits or other types of

	authorization, as appropriate, to provide reasonable access for non-recreational use of OHVs for military, search and rescue, emergency, administrative, and permitted uses.
REC-6	Dispersed camping is allowed where not specifically restricted. Dispersed camping may be closed seasonally or as impacts or environmental conditions warrant. All vehicle use associated with dispersed camping activities is required to stay on designated routes.
REC-13	Support Grand County's efforts to obtain approval of corridor management plans for Utah Scenic Byways (Utah Highways 128, 313, and 279) and provide assistance, where feasible, in the development of byway facilities consistent with other decisions of the RMP.
REC-39 (excerpt)	Labyrinth Rims/Gemini Bridges SRMA **(excerpts)**: • Front country type use takes place along SR 313 and the Island in the Sky Road. This highway was designated the Dead Horse Mesa Scenic Byway by the State of Utah in the early 2000s. To manage dispersed camping and protect scenic values, BLM establishes a 1-mile-wide corridor along SR 313 and the Island in the Sky Entrance Road where camping is limited to designated sites, wood cutting and firewood gathering are prohibited, and portable toilets are required. BLM currently limits camping in the corridor to the Horsethief Campground, the Lone Mesa, and Cowboy Camp camping areas. BLM also limits camping and prohibits woodcutting and firewood gathering in a one- mile-wide corridor along the Gemini Bridges Road. Manage the small Cowboy Camp for tent camping and manage the Lone Mesa area for group use. Manage Hatch Wash and the lower section of West Coyote Creek for primitive, nonmotorized recreation. • In addition to the Mineral Bottom Takeout, BLM manages several additional facilities in the area including the Mill Canyon Dinosaur Interpretive Trail, the Halfway Stage Station Interpretive Site, and the Copper Ridge Sauropod Trackway Interpretive site. BLM also manages and maintains route markings (with user group assistance) on the Monitor and Merrimac, Seven Mile Rim, Poison Spider Mesa, Golden Spike, Goldbar Rim, Gemini Bridges, Lower Monitor and Merrimac, Bar M, and Klondike Bluffs routes which are used by both motorized and non-motorized visitors. The 3-D, Crystal Geyser, Hellroaring Rim, Secret Spire, and Wipeout Hill routes are authorized for Jeep Safari and other uses. New motorized routes will not be considered in the Hatch Wash Hiking and Backpacking Focus Area. • Manage backcountry areas to facilitate scenic motorized touring on designated routes with special emphasis upon establishment of low-development, end of route parking areas and route signing. • Improve the road to the Mill Canyon Dinosaur Trailhead to accommodate passenger car traffic. • Focus Area -- Scenic Driving Corridors: Highway 313 and the Island in the Sky Road (Utah Scenic Byway): Manage for scenic driving enjoyment. The corridor is defined as having a width of 1/2 mile from centerline (or to border of adjoining Focus Area; see Appendix A). • Focus Areas -- Non-Mechanized Recreation: o Goldbar/Corona Arch Hiking Focus Area (4,191 acres) covers the lands below the Golden Spike OHV route inclusive of the Culvert Canyon drainage to the northern rim of Long Canyon exclusive of the main stem of the Day Point Road. Manage the Corona Arch Trail for hiking only. Develop a hiking loop route in Culvert Canyon from the canyon bottom up to Jeep Arch and back on the western bench of Culvert Canyon to the canyon to just canyon from the railroad spur. Apply a no surface occupancy stipulation for oil and gas leasing and preclude other surface-disturbing activities (see Appendix A) to protect primitive hiking opportunities and scenic values. No new motorized routes will be considered. o Spring Canyon Hiking Focus Area (457 acres) will be established upstream from the Spring Canyon Bottom Road. No new motorized routes will be considered. o Labyrinth Canyon Canoe Focus Area (7,709 acres) inclusive of the rims along the east side of Labyrinth Canyon from Placer Bottom to Mineral Bottom exclusive of

	the Hey Joe Mine OHV and mountain bike route. No new motorized routes will be considered. o Seven Mile Canyons Equestrian Focus Area (1,026 acres) inclusive of the north and south forks of Seven Mile Canyon westward from the junction of the two canyons. Equestrian use in this area will be restricted to private (non-commercial) horse use. No new motorized routes will be considered. • Focus Areas -- Mountain Bike Backcountry Touring (excerpts): o Bar M Mountain Biking Focus Area (2,904 acres) between Arches National Park, U.S. Highway 191, and the Bar M area state lands, exclusive of motorized access for the Copper Ridge Jeep Safari Route and the 191 rock quarry access road. Convert existing routes to mechanized use and provide for a limited number of new and connecting routes to support use of area as the destination for the 191 bike lane. Recommend that the old highway route in Moab Canyon be managed for non-motorized use to facilitate use of the route as part of the 191 bike lane. o Mill Canyon/Upper Courthouse Mountain Biking Focus Area (5,744 acres) inclusive of areas within the Mill Canyon and upper Courthouse drainages with continued use of the Seven Mile Rim Jeep Safari route for motorized use, with non-motorized trailheads near the Mill Canyon Dinosaur Trail and the Halfway Stage Station. Manage the Mill Canyon Dinosaur Trail for hiking only (35 miles of road designated for motorized travel; 23 miles of route managed for mechanized use only). o Focus Area -- Motorized Backcountry Touring: Gemini Bridges/Poison Spider Mesa Focus Area (16,299 acres) for multiple use, including full-size OHV, ATV, and motorcycle use with consideration given to managing routes suitable for each vehicle type. Travel will be intensively managed on designated routes only. Close the spur route to Gemini Bridges to facilitate public use and help restore damaged lands along the spur route. Construct a parking area near the bridges. • Focus Areas – Specialized Sport Venue (Motorized): o Dee Pass Motorized Trail Focus Area (35,290 acres) for motorcycle and ATV use: This is the area for competitive motorized events. Competitive routes within this area will be identified based on site-specific NEPA analysis. All routes designated for motorized use in the accompanying Travel Plan will remain open while Section 106 cultural resource inventories are conducted. If these inventories indicate the presence of eligible sites within the travel corridor, the route will be altered or closed. All new routes will require Section 106 cultural resource inventory prior to designation. Establish a managed OHV route system with provision for ongoing management of existing single-track routes to maintain their singletrack character. o Airport Hills Motocross Focus Area (285 acres): Manage the Focus Area for motocross use in partnership with local government under the Recreation and Public Purposes Act. A patent will be issued to local government. • Focus Area – Managed OHV area (cross country travel allowed): White Wash Sand Dunes Open OHV Focus Area, (1,866 acres) encompassing the area around the dunes themselves. Manage the central portion of the White Wash Sand Dunes for motorized sand play with exception of the dune field cottonwood trees and White Wash water sources which will be closed to motorized travel and fenced.
The proposed action also supports other RMP Recreation management actions, including REC-33 and REC-34.	
Other Resources and Off-Highway Vehicles	
SOL-WAT-20	No additional OHV routes will be allowed in saline soils other than those already designated in the Travel Plan accompanying this RMP (see Appendix N). An exception will be considered on a case-by-case basis for proposed routes in the Dee Pass Motorized Focus Area and in the Utah Rims SRMA. Exceptions could also be considered on a case-by-case basis outside these two areas if potential impacts could be mitigated and if the action will benefit other natural and cultural resources.

WSR-4	OHV travel will be limited to designated routes or closed, depending on the river segment.

The action alternatives are also in conformance with the 2018 Labyrinth Rims/Gemini Bridges Recreation Area Management Plan (RAMP), which summarizes the 2008 RMP decisions relevant to management of the SRMA.

The proposed route networks analyzed in the action alternatives were designed in accordance with the requirements and guidance in Executive Orders 11644 and 11989, 43 CFR § 8342.1, Manual 1626, and Handbook 8342. Table 1.3 provides a summary of the designation criteria in 43 CFR § 8342.1. The BLM's consideration and application of the designation criteria during development of the action alternative networks is further detailed in Chapter 2.

Table 1.3: 43 CFR § 8342.1 Designation Criteria

(a)	Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
(b)	Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
(c)	Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
(d)	Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

With respect to the National Historic Preservation Act (NHPA), the BLM considered adverse effects to historic properties in accordance with the requirements of the *2018 Programmatic Agreement Among the Advisory Council on Historic Preservation, The Bureau of Land Management-Utah and the Utah State Historic Preservation Office Regarding National Historic Preservation Act Responsibilities for Travel and Transportation Management Undertakings* (Travel PA).

1.6 SCOPING AND ISSUE IDENTIFICATION

1.6.1 OVERVIEW

Internal (BLM and Cooperators) and external (public) scoping identified route-related issues that could affect the natural and human environment within the TMA. The BLM NEPA Handbook, H-1790-1, defines an *issue* as "a point of disagreement, debate, or dispute" that "point[s] to environmental effects" (BLM 2008a). Those issues necessary to make a reasoned choice between alternatives or to determine the significance of impacts were brought forward for detailed analysis in this EA and are discussed below. An initial round of public scoping occurred from March 23 to April 26, 2021 and resulted in 9,168 scoping letters. Chapter 4 and Appendix E include more details on scoping issues. A full list of identified resource values, land uses, and special designation areas that occur in the TMA can be found in the IDT checklist in Appendix E.

1.6.2 ISSUES CARRIED FORWARD FOR DETAILED ANALYSIS

In developing a TMP, it is important for decision-makers and the public to understand the impacts that each of the proposed alternative travel networks would have on specific resources; to this end, the IDT identified resource and use topic(s) that could potentially be impacted, as recorded in the IDT Checklist in Appendix E. They are presented along with related issue statements in Table 1.4, below. The resource/use topics and issue statements are organized under two primary headings: 1) Potential impacts on the TMA's natural and human environment, and 2) Potential impacts to recreation user opportunities and experiences. The issue statements help refine the discussions of the affected environment and environmental effects in Chapter 3.

Table 1.4: Issues Analyzed in Detail

1. POTENTIAL IMPACTS ON THE TMA'S NATURAL AND HUMAN ENVIRONMENT
SPECIFICALLY:
• How would the route designation alternatives impact **cultural resources** within the TMA?
• How would the route designation alternatives impact inventoried wilderness characteristics in **Lands with Wilderness Characteristics (LWC)** areas?
• How would the route designation alternatives impact **soil stability, native vegetation communities,** and introduction and spread of **invasive weeds**?
• How would the route designation alternatives impact the relevant values of the **Ten Mile Wash Area of Critical Environmental Concern (ACEC)** and the **Highway 279 / Shafer Basin / Long Canyon ACEC**? • How would the route designation alternatives impact the **Wild and Scenic River (WSR)** qualities of the Green River segment running along the TMA's western boundary? • How would the route designation alternatives impact the integrity of the **Old Spanish National Historic Trail (NHT)**?
• How would the route designation alternatives impact **visual resources** within the TMA?
• How would the route designation alternatives impact **water resources** within the TMA?
• How would the route designation alternatives impact **wildlife and wildlife habitat (including fisheries, general wildlife, migratory birds and raptors, and special status species)**?
2. POTENTIAL IMPACTS TO RECREATION USER OPPORTUNITIES AND EXPERIENCES
SPECIFICALLY:
• How would the route designation alternatives impact **recreation** opportunities and experiences in the TMA?

1.6.3 RESOURCE/USE TOPICS IDENTIFIED, BUT ELIMINATED FROM DETAILED ANALYSIS

Some issues raised during scoping were beyond the scope of this project, were not substantive, were not significant, or were not necessary in making reasoned choices between alternatives. Resource/use topics that were identified but eliminated from detailed analysis in the EA can be

found in the IDT checklist table in Appendix E. In this table, resource/use topics with a determination of "NI" (Not Impacted) or "NP" (Not Present) were not carried forward for analysis, and relevant details and explanations are provided.

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2 ALTERNATIVES

2.1 ROUTE DESIGNATION METHODOLOGY

2.1.1 OVERVIEW

During several sessions in 2019, the BLM's IDT evaluated all OHV travel routes considered for designation in the Labyrinth/Gemini Bridges TMA and created a preliminary range of alternative travel networks. In evaluating each travel route, the IDT applied and documented compliance with the 43 CFR § 8342.1 designation criteria (i.e., minimization criteria). BLM Manual 1626 explains that the minimization of impacts "means to limit the degree or magnitude of the action and its implementation (40 CFR § 1508.20(b) – CEQ Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act)" (BLM 2016). The BLM route evaluation process along with further review and scoping contributed to the development of a range of reasonable network alternatives. Reasonable alternatives are those that "are *practical or feasible* from the technical and economic standpoint and using common sense, rather than simply *desirable*. . ." (BLM 2008a). Each of the proposed action alternatives meets the purpose and need and responds to the issues described in Chapter 1.

2.1.2 ROUTE INVENTORY

The Labyrinth/Gemini Bridges TMA route inventory consists of the route network system designated as part of the 2008 RMP and includes only routes designated for OHV use in the 2008 RMP and subsequent route designation revisions. Off-route OHV use in the TMA occurs only occasionally and, due to extensive management, new route proliferation is not a significant issue. The addition of new routes beyond those designated for OHV use as part of the 2008 Travel Plan or subsequent amendments, including the 766.0 miles closed in 2008, are not considered in this EA.

The route inventory used in the 2008 RMP was verified in 2017 and 2018 using field surveys, aerial imagery, and IDT input. The BLM collected inventory data, which include GPS-collected lines showing route locations and attributes. Data also include GPS-collected points describing travel management-related features on or near routes. During IDT review, some linear features (see Glossary for definition), generally old seismic exploration lines, were identified that are not, nor were ever, routes intended to become part of the travel network. BLM staff examined these linear features and determined that they were not appropriate for designation under any alternative; none of these linear disturbances were included in any of the route network alternatives.

2.1.3 ROUTE EVALUATION

In 2019, the BLM IDT and cooperating agencies (see Section 4.1.2 for a list of cooperating agencies) began evaluating 1,127.7 miles of inventoried routes, all of which were designated as OHV-Open or OHV-Limited in the 2008 RMP Travel Plan or its subsequent route designation revisions. The results of these route evaluations are shown, route by route, in each of the route reports (Appendix I). There is a separate route report for each route or route segment in the

TMA; these route reports are available on the project's ePlanning website. The route reports catalogue the resource conflicts that exist for each route to the extent such conflicts are present; the reports further list the alternatives proposed for each route as well as the reasoning for the proposed alternatives. For example, a route with serious or multiple resource conflicts may have been closed in one or more alternatives. The IDT weighed the purpose and need for each route against the resource conflicts to determine in which, if any, of the action alternatives B-D the route would be designated for OHV use.

All routes in the TMA are designated for OHV use (OHV-Open or OHV-Limited) in Alternative A; the route evaluation process (resource conflicts vs. purpose and need for the route) was used to propose route designations across the action alternatives. Except for 2.5 miles in Alternative B, all regularly maintained roads (see Section 2.2, below) were proposed as open in the action alternatives.

In conducting evaluation of each inventoried route, the BLM IDT:

- Considered the goals and objectives for resource values and uses established in the 2008 RMP
- Considered and documented any purpose and need of the route, including but not limited to activities relating to existing motorized and non-motorized uses for recreation, livestock grazing, law enforcement, search and rescue, fire suppression, access to private or SITLA (School and Institutional Trust Lands Administration) lands, mineral exploration and development, administrative access, and authorized motorized travel
- Considered and documented any known or asserted resource or user conflict; and consideration of designating spur routes leading to SITLA lands, facilities, campsites, and other points of interest, which may include overlooks and natural and historic features; and whether there are multiple routes leading to the same location
- Considered route locations and characteristics and exploration of alternative opportunities and techniques for avoiding or mitigating project effects to minimize damage, disruption, and conflict with various resources and among users. The IDT also proposed leaving routes open in areas where doing so would result in minimal resource damage or redirecting travel to routes in less sensitive areas
- Identified routes that were redundant (i.e., a route leading to the same destination and serving the same purpose and need as another nearby route)
- Proposed individual route designations based on alternative themes
- Considered whether OHV use of the route conflicts with resources and other uses of the public lands and whether those conflicts could be minimized under various proposed designations
- Documented rationale for each proposed route designation

2.1.4 ROUTE DESIGNATIONS

The IDT proposed route designations as part of a TMP process that reflects on-the-ground conditions and the best available GIS data for the Labyrinth/Gemini Bridges TMA.

In Figure 2.1 (below) and figures throughout Chapter 3, a variety of detailed travel route designations are summarized in broader categories to enable the reader to more easily compare

the route network alternatives. The variety of individual designations proposed during route evaluation are available in the route reports (see Appendix I). In some cases, some form of management (e.g., monitoring) was assigned to routes in conjunction with their individual OHV designations, and details on such management can be found in the route reports. This EA focuses on OHV designations that fall into one of the following categories:

- OHV-Open – Open year-round to all motorized vehicle travel.
- OHV-Limited – Allows for some limited public motorized vehicle use to address identified resource or use concerns. Limits typically include vehicle type or width, or seasonal use, etc.
- OHV-Closed – Route not available for public motorized vehicle use. The OHV-Closed category includes:
    - Routes that will not become part of the designated OHV route network and are often earmarked for natural or manual reclamation.
    - Routes that will remain available for authorized or administrative uses. Some of these routes provide access to authorized facilities (i.e., stock tanks and ponds, corrals, communication sites, etc.).
    - Routes that remain available for non-OHV use, such as hiking or equestrian trails.

Regardless of route designations, users can engage in non-motorized forms of transportation such as walking or riding horses anywhere on the TMA's BLM lands (on existing routes or cross-country), unless there is a specific exclusion stating otherwise.

2.1.5 AUTHORIZED USES

OHV route designations in the final TMP, when adopted, will not apply to authorized users, which are excluded from the definition of OHV in 43 C.F.R. § 8340.0-5(a)(3). Examples of authorized users include grazing permittees who would need to use the routes to access grazing allotments or range improvements, private landowners who obtain a right-of-way to access their inholding, or entities with a valid right-of-way to access SITLA parcels.

Existing authorizations will not be altered by the final TMP, when adopted. BLM will continue to work with private landowners, the State, SITLA permittees, and other authorized users to ensure reasonable access to, among other things, range improvements, private lands, and SITLA parcels. As the need arises, and in accordance with applicable laws and regulations, any route (including those that are designated OHV-Closed) can be made available to authorized or administrative uses.

2.1.6 R.S. 2477 ASSERTIONS

The State of Utah and counties may hold valid existing rights-of-way within the TMA pursuant to Revised Statute (R.S.) 2477, Act of July 28, 1866, Chapter 262, 8,14; Stat. 252, 253, codified at 43 U.S.C. § 932. This travel planning effort and resulting TMP is not intended to provide any evidence bearing on or to address the validity of any asserted R.S. 2477 rights-of-way and does not adjudicate, analyze, or otherwise determine the validity of any asserted rights-of-way. R.S. 2477 rights are determined through a process that is entirely separate from BLM travel planning efforts. Consequently, this planning effort does not consider any R.S. 2477 assertions or

evidence and has no effect on any legal rights relating to asserted R.S. 2477 rights-of-way. At such time as administrative or judicial determinations are made acknowledging or adjudicating asserted R.S. 2477 rights-of-ways, the BLM will adjust its TMP accordingly.

2.2 TMA Route Designation Summary by Alternative

Table 2.1 summarizes the proposed TMA route designations by alternative and the differences in alternatives compared to current management (Alternative A). OHV route designations are defined above in Section 2.1.4 and on page 7-3 of the BLM Travel and Transportation Management Manual (BLM 2016). Maps showing proposed route networks and designations for Alternatives A, B, C, and D can be found in Appendix J. Note: the sum of mileage in some columns may differ slightly from the total because of rounding. Additional tables can be found in Appendix C.

Figure 2.1: Miles of Evaluated Routes by Alternative and Designation

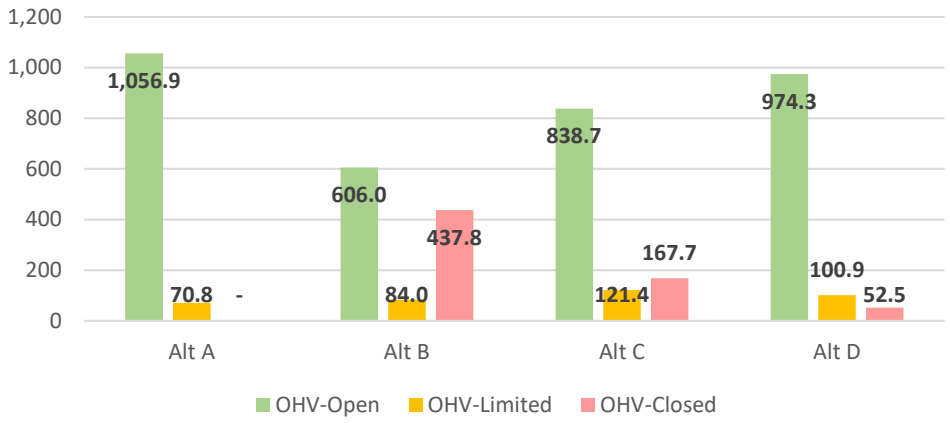


Figure 2.2 and Figure 2.3, below, show the miles of evaluated routes by alternative that are regularly maintained and the miles of evaluated routes that receive minimal maintenance. For the purposes of this document, *regularly maintained*[6] routes are those roads that receive moderate or high levels of maintenance; these routes tend to be wide enough for two vehicles to pass, are generally maintained to keep the route in use for the majority of the year and see moderate to high use at moderate speeds. *Minimally maintained*[7] routes are those which receive low or minimal maintenance; these routes tend to be narrower than maintained routes (grading and brushing is not performed), maintenance is limited to that necessary to protect adjacent land and resource values, and they receive low use at low speeds.

[6] *Regularly maintained* routes are maintained to a Maintenance Intensity Level 3 or 5 in accordance with Appendix A of BLM's 9113 Roads Manual (BLM 2015) and Appendix A of BLM's 9115 Primitive Roads Manual (BLM 2012e).
[7] *Minimally maintained* routes are maintained to a Maintenance Intensity Level 1 in accordance with Appendix A of BLM's 9113 Roads Manual and Appendix A of BLM's 9115 Primitive Roads Manual.

Figure 2.2: Miles of Regularly Maintained Routes by Alternative and Designation

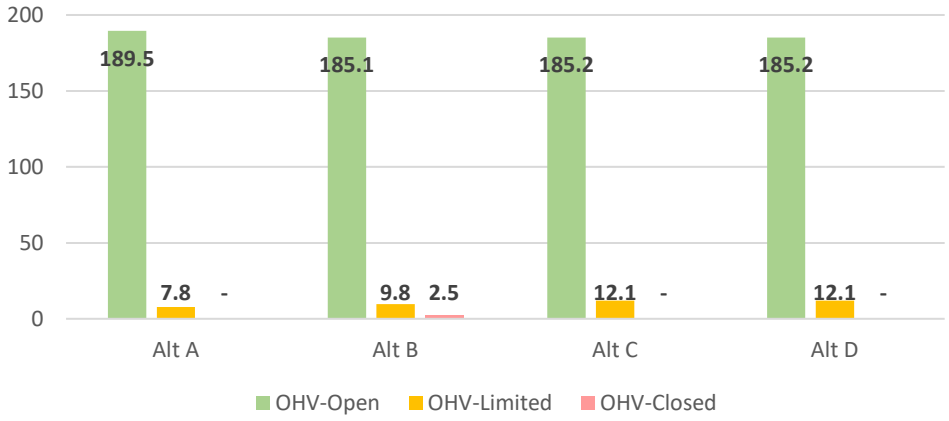
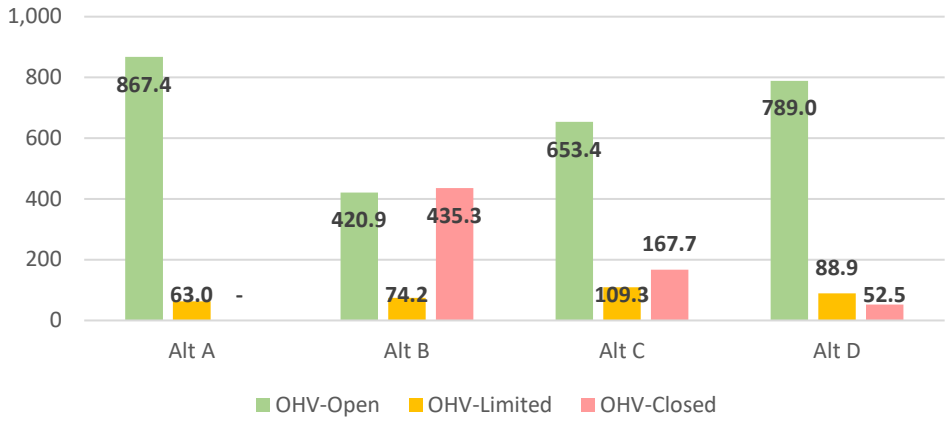


Figure 2.3: Miles of Minimally Maintained Routes by Alternative and Designation



2.2.1 Alternative A (No Action/Current Management)

Alternative A represents the no action or current management alternative and consists of the route designations and management objectives made in the 2008 Travel Plan and subsequent route designation revisions. Alternative A reflects the total network of evaluated routes considered for designation in this travel planning effort and is used as a baseline for comparison between the alternatives.

In Alternative A, route designations for the TMA would remain unchanged—that is, all 1,127.7 miles of evaluated routes would remain available for OHV use. Of these, 1,056.9 miles would remain OHV-Open, 65.3 miles would remain limited by vehicle width, and 5.5 miles would remain limited to e-bikes. The miles of routes designated as OHV-Open or OHV-Limited includes 197.3 miles of regularly maintained routes (17% of total evaluated miles) and 930.4 miles of minimally maintained routes (83% of total evaluated miles). While changes are not proposed under Alternative A, it still provides for continuation of current route use and would have route use-related effects comparable to the action alternatives.

2.2.2 ALTERNATIVE B (NATURAL RESOURCE EMPHASIS)

Alternative B prioritizes protection of wildlife habitats, natural and cultural resources, ecosystems, and landscapes. OHV use is more constrained under this alternative than under any other alternative. Maps posted on September 16th, 2021, showed routes to be designated in preliminary Alternative B as follows: 682.0 as OHV-Open, 81.0 as OHV-Limited, and 364.0 as OHV-Closed. After the maps were posted, internal and external comments resulted in further adjustment to the proposed network wherein several proposed designations were changed to further constrain OHV use and reduce resource and user conflicts (see Section 4.2.1).

In Alternative B, 606.0 miles (54% of the evaluated route miles) would be designated OHV-Open, 84.0 miles (7%) OHV-Limited, and 437.8 miles (39%) would be closed. Of the routes designated as OHV-Limited, 75.6 miles would be limited by vehicle size and 5.5 miles would be limited to e-bikes. The routes designated OHV-Open or OHV-Limited would consist of 194.9 miles of regularly maintained routes and 495.1 miles of minimally maintained routes. All but 2.5 miles of routes that would be closed to OHV use under this alternative are minimally maintained. Of the OHV-Closed routes under this alternative, 52.6 miles would remain available for authorized or administrative use only, 5.0 miles would be reserved for passive non-motorized trail use, and the remaining 380.3 miles would be decommissioned and earmarked for reclamation. This alternative would close some segments that are part of the BLM-recognized Jeep Safari trail system (see Section 3.3.1 for more details).

2.2.3 ALTERNATIVE C (MULTIPLE USE EMPHASIS)

Alternative C represents a balanced approach to OHV access opportunities and a variety of management actions which resolve issues and management concerns while accommodating the BLM's multiple use mandates and responsibilities. This alternative has OHV-Open, OHV-Limited, and OHV-Closed designations that accommodate natural and cultural resource protections while designating more miles of routes for OHV use than Alternative B. In this alternative, 838.7 miles (74% of the evaluated route miles) would be designated OHV-Open, 121.4 miles (11%) OHV-Limited, and 167.7 (15%) OHV-Closed. Of the OHV-Limited routes, 97.6 miles would be limited by vehicle size, 5.5 miles would be limited to e-bikes, and 18.3 miles would be limited seasonally. The routes designated OHV-Open or OHV-Limited would consist of all 197.3 miles of regularly maintained routes as well as 762.7 miles of minimally maintained routes. All routes that would be closed to OHV use under this alternative are minimally maintained. Of the OHV-Closed routes under this alternative, 23.5 miles would remain available for authorized or administrative use only, 10.1 miles would be reserved for passive non-motorized trail use, and the remaining 134.1 miles would be decommissioned and earmarked for reclamation. Under this alternative, all high-value routes in the BLM-recognized Jeep Safari trail system would remain designated for OHV use.

2.2.4 ALTERNATIVE D (ACCESS EMPHASIS)

Alternative D is the action alternative that would designate the most miles of evaluated routes as OHV-Open, allowing for the most OHV-based access opportunities of any of the action alternatives, and accommodating a full range of uses while still mitigating travel-related impacts. In this alternative, 974.3 miles (86% of the evaluated route miles) would be designated OHV-Open, 100.9 miles (9%) would be designated OHV-Limited, and 52.5 miles (5%) would be

closed. Of the OHV-Limited routes, 93.1 miles would be limited by vehicle size, 5.5 miles would be limited to e-bikes, and 2.4 miles would be limited seasonally. The routes designated OHV-Open or OHV-Limited would consist of all 197.3 miles of regularly maintained routes as well as 877.9 miles of minimally maintained routes. All routes that would be closed to OHV use under this alternative are minimally maintained. Of the OHV-Closed routes under this alternative, 11.2 miles would remain available for authorized or administrative use only, 2.0 miles would be reserved for passive non-motorized trail use, and the remaining 39.4 miles would be decommissioned and earmarked for reclamation. Under this alternative, routes in the BLM-recognized Jeep Safari trail system would remain designated for OHV use.

2.3 IMPLEMENTATION ACTIONS COMMON TO ALL ACTION ALTERNATIVES

Although some forms of implementation-related management were specified in conjunction with designations during route evaluation, the following activities identified in the TMP Implementation Guide (Appendix L) would occur with any of the action alternatives described above.

2.3.1 SIGNING

The travel route network would be signed to identify routes and inform the public of locations, special conditions, and limitations. Activities associated with signing include ground disturbance (post hole excavation, minor grading) and may involve minor vegetation removal. Sign installation would be done in previously disturbed areas as much as possible but may require installation in previously undisturbed areas outside the roadway and shoulder. Sign placement in areas that have not been previously disturbed is not analyzed in this EA and could be subject to additional NEPA review on a case-by-case basis. According to the Travel PA, Stipulation VI.C., the installation of signs is exempt from cultural resource survey and consultation requirements. See the Implementation Guide (Appendix L) for more details related to signing.

2.3.2 ROUTE MAINTENANCE

Route maintenance is categorized into one of two categories: 1) routine or regular maintenance that meets the purpose and need of the route and that does not extend beyond the edge of previous road prism disturbance; or 2) maintenance of a route that exceeds the standard of routine maintenance by either upgrading, widening, re-aligning, or otherwise creating new surface disturbance. Maintenance of designated routes would typically be conducted as described in the first category. Maintenance of designated routes that fall into the second category (i.e., more than routine) may be subject to additional site-specific NEPA review. See the Implementation Guide (Appendix L) for more details on route maintenance.

2.3.3 DECOMMISSIONING AND RECLAIMING CLOSED ROUTES

Closed routes may be decommissioned and reclaimed through a variety of methods described below. BLM resource specialists will determine which form of decommissioning and reclamation is appropriate based on the characteristics of each closed route:

- Closed routes may be allowed to revegetate naturally.
- Route reclamation may be done by mechanically ripping the route surface and revegetating through seeding or planting.
- In sandy areas and washes, tracks may be raked out so there is no evidence of vehicle use.
- Grading and recontouring may be used in some areas to restore natural slopes.
- As with maintenance activities, ground disturbance may extend into areas not previously disturbed.
- Signs or barriers (boulders, fences and gates, berms, vegetation) may be placed at the entrances to closed routes.
- Mulching may be used to obscure closed routes or protect disturbed surfaces.

2.3.4 Best Management Practices and Standard Operating Procedures

Under all action alternatives, implementation activities are subject to Best Management Practices (BMPs) and Standard Operating Procedures (SOPs). A list of BMPs and SOPs can be found in the Implementation Guide (Appendix L), Section L.3.5.

2.3.5 Conservation Measures

Through consultation with the U.S. Fish and Wildlife Service (USFWS) the following Conservation Measures have been developed and will be adhered to regardless of the alternative selected for this TMP:

[CONSERVATION MEASURES TO BE PROVIDED FOLLOWING CONSULTATION]

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 OVERVIEW

3.1.1 INTRODUCTION AND GENERAL SETTING

This chapter describes the existing condition and trend of issue-related elements of the human environment that may be affected by the alternatives. It also identifies the known and predicted effects that are related to the issues (BLM 2008a). The affected environment is the same for all alternatives. For an overview of the TMA setting, see Section 1.4. The table in Appendix E lists all relevant resource topics for which issues are analyzed and provides rationales for resources not analyzed.

3.1.2 EFFECTS

In this EA, effects analysis was conducted in the context of NEPA planning. The BLM's NEPA Handbook (BLM 2008a) defines "effect" as an "impact to the human environment brought about by an agent of change, or action. Effects analysis predicts the degree to which the environment will be affected by an action." The Handbook adds that the BLM should analyze relevant short-term and long-term effects and disclose both beneficial and detrimental effects, and that the BLM should consider and analyze three categories of effects: direct, indirect, and cumulative. Beneficial effects are those that would enhance or restore the TMA environment. For example, a well-planned designated travel network can provide travel routes for a variety of desired experiences and reduce user inclination to travel off route and create new disturbance that would impact the area's natural and cultural resources. The Handbook states that effects analysis "must demonstrate that the BLM took a 'hard look' at the impacts." A "hard look" is "a reasoned analysis containing quantitative or detailed qualitative information."

The analysis that follows—unless otherwise noted—focuses on the issues from scoping and concerns associated with potential effects on the TMA's human environment. Analyzing these effects provides a useful comparison between each alternative travel network's capability for addressing the documented issues and concerns.

3.1.3 EFFECTS ANALYSIS ASSUMPTIONS

General Assumptions

The following general assumptions were applied in analysis of each alternative travel route network's effects on the TMA environment:

1. Construction of new routes is not in the scope of this project; however, the possibility of future addition of new routes is part of the operation and management of the overall travel network (see Appendix L (TMP Implementation Guide), Section L.3.5). As part of ongoing travel management associated with this TMP, route designations may be added or changed in the future. Any new or changed designations would be subject to site-

specific environmental analysis in accordance with NEPA and Travel-related decisions in the 2008 RMP.

2. Routes designated in this plan may be subject to future planning efforts.
3. Reducing network mileage within the TMA is not anticipated to result in a reduction in OHV use overall. Year-round OHV and non-motorized recreation use is expected to continue to increase slightly in and around the TMA regardless of the designations made as a result of this travel planning effort.
4. Concentration of use as a result of OHV-Closed designations is not anticipated as an issue in this TMA. This conclusion was reached by the BLM IDT and applies for archaeology, wildlife, and other resources. Many of the routes proposed for OHV-Closed designations in the alternative networks are very lightly used, and therefore would not result in any appreciable concentration of use on the remaining open routes.
5. For Alternatives B-D, implementation of a designated route network, including management, maintenance, and appropriate signing, is anticipated to provide predictability and clarity for users along with a variety of OHV opportunities and experiences that could help reduce user inclination to travel off OHV-Open and OHV-Limited routes (GAO 2009).
6. In addition to providing access for OHV users, a well-planned and managed comprehensive designated network is also anticipated to provide primary long-term sustainable access for resource management and authorized use purposes.
7. Detrimental effects would be reduced by applying the BMPs and SOPs listed in Sections L.3 through L.7 of the TMP Implementation Guide (Appendix L) for operation and maintenance of the designated route network.
8. OHV-Open and OHV-Limited designations that include "with management" include some type of additional management (e.g., sign installation, monitoring, maintenance, etc.), but do not necessarily result in additional limitations on user type, season of use, or mode of travel.
9. The implementation discussed in this document and detailed in the TMP Implementation Guide (Appendix L) is subject to available funding and resources. For the purposes of this analysis, it is assumed that funding and resources would be available for implementation.
10. Routes that are designated OHV-Closed and decommissioned would not become part of the OHV travel network. They would be allowed to reclaim naturally or be actively reclaimed (e.g., through scarification and seeding), unless they are to remain available for administrative or authorized uses (e.g., access to range facilities or communication sites).
11. With the exception of 2.5 miles of route in Alternative B (the Brink Spring access road), none of the Alternatives are proposing to close regularly maintained routes (see Figure 2.2 and Figure 2.3 in Chapter 2). The routes proposed as closed under the action alternatives are otherwise minimally maintained or unmaintained routes. Regularly maintained roads receive higher use; in addition, the maintenance of roads has a mitigating effect on off-route travel and road widening, as the route of travel is more obvious. Minimally maintained and unmaintained routes receive lower use and may have a less obvious purpose and need (in most cases, minimally maintained routes with relatively higher use or recreational value, such as those in the BLM-recognized Jeep

Safari system, are proposed for OHV-Open designations; see Section 3.3.1); minimally maintained routes tend to be relatively narrow and may be subject to infrequent off-route passing and parking (see Assumption #12, below).

12. Passing and parking: As part of motorized use of designated routes, vehicles may occasionally need to pull off for purposes of passing or parking. As a part of this TMP effort, the BLM documented known parking areas on evaluated routes in the Route Reports (Appendix I). Where existing parking along evaluated routes was not identified, and for instances where passing may be necessary, it is assumed that pulling completely off a route for passing or parking only occurs on the narrowest minimally maintained routes because larger routes typically have adequate width or locations for passing or parking without creating additional disturbance (i.e., additional existing width from roadside ditches, drain dip outlets, or spur route intersections). It is further assumed that, since minimally maintained routes are used infrequently due to rough terrain and vehicle limitations, the probability that vehicles need to park along those routes is low. However, when vehicles do have to park along these routes, it is assumed that they would typically pull off the designated route to the minimum extent possible to safely park, often staying within the disturbed footprint of the original roadbed. Observation indicates that people often park on slickrock slabs or disturbed areas immediately adjacent to the road. Regardless of travel route widths, impacts associated with the use of the routes are part of the overall designated route network analysis, and proximity of designated routes to sensitive resources is noted in the route reports. Within the TMA, 930.4 miles of evaluated routes are minimally maintained where off-route passing or parking may occur very infrequently.

3.1.4 EFFECTS ANALYSIS METHODOLOGY

General Effects Analysis

In this chapter, the following methodologies were applied to analyze the alternative travel networks' potential effects on resource/use topics:

- GIS data and resource/use data collected during route evaluation form the basis for disclosing the alternative route networks' potential effects on issues tied to particular resource/use topics. Data in tables show how many miles or numbers of routes of a particular designation under each alternative are likely to affect resources or uses associated with certain issues and impact analysis questions. These tables are used to disclose and compare effects of the action alternatives (B, C, and D) to the No Action Alternative (A). In many cases, the potential for effects is noted by comparing percentages or miles of routes of a designation with the total miles or numbers of routes associated with a particular resource. Travel routes or route miles are considered as potentially impacting a resource when they cross over it (e.g., species habitat polygons), are within a defined proximity distance of it (e.g., within ½ mile), or are otherwise noted as being associated in route evaluation data.
- Effects analysis is based on the best available data and resource staff knowledge of the TMA (based on observation and analysis of conditions and resources in the area and other similar areas).

- The past actions of assigning individual designations to routes in 2008 and subsequent travel plan amendments were considered as part of direct, indirect, and cumulative effects analysis.
- For some resource topics, more specific methodologies were used to determine effects. These methodologies are described in their respective resource topic sections.
- Mileages, percentages, acreages, and other quantities used in this analysis are approximate projections for comparison and analytical purposes only; they do not always reflect exact measurements or precise calculations. Table mileages and percentages may not total equally in some instances due to rounding.
- Additional tables can be found in Appendix C.

Although the following effects analyses are presented in the context of TMA-wide alternative travel route networks, each individual route within a given alternative network has been systematically and carefully evaluated as part of a comprehensive route evaluation and designation process. As part of documenting compliance with the 43 CFR § 8342.1 designation criteria, for each route designation, rationale statements were provided. These statements summarize how proposed designations would minimize potential resource impacts. They were reviewed and chosen by the BLM IDT, discussed as needed, and documented for each route alternative (see sample route report in Appendix I).

Cumulative Effects Analysis

In this chapter, cumulative effects analysis for the TMA's proposed alternative travel networks is based on the best available data and information, and in some cases where quantitative data is not available, analysis is primarily qualitative in nature. Table 3.1, below, displays the projects, plans, actions, or events that make up the cumulative impact scenario for each relevant resource or use topic. Not all projects, plans, actions, or events necessarily apply to a relevant resource or use topic. Each relevant resource or use topic section that is displayed in the table has an associated cumulative effects analysis and discussion of the scope of the cumulative impact analysis area (CIAA) following its respective direct and indirect effects analysis narrative in this chapter. For some relevant resource or use topics, narrative discussion that would otherwise be repetitive may be summarized.

Table 3.1: Cumulative Effects Relevant Resource or Use Topics and Projects, Plans, Actions, or Events that Make Up the Cumulative Impact Scenario

Relevant Resource or Use Topic	Projects, Plans, Actions, or Events
Cultural Resources	**Past and Present**: Recreation use of all types, land- and water-based, including motorized and non-motorized recreation, camping and use of the Green River for boating activities; livestock grazing and associated facilities and range maintenance and improvements; Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash; oil and gas development, mineral activity, including locatable minerals (lithium); drought and occasional wildland fires, including in riparian areas and along rivers and streams **Reasonably Foreseeable**: Travel plan implementation, network operation and maintenance; travel network additions and deletions; ongoing and ever-increasing recreation use; climate change is expected to create warmer and drier conditions on the CO Plateau along with changes to precipitation patterns (less snowpack, increased monsoonal precipitation); livestock grazing is expected to continue at current use levels; livestock water infrastructure development to facilitate better grazing management on soils and vegetation; oil and gas activity is expected to increase at approximately same rate as it has in the past; mineral exploration (lithium and potash) demand expected to increase
Lands with Wilderness Characteristics	
Soils, Native Vegetation, and Weeds and Invasive Species	
Special Designation Areas	
Visual Resources	
Water Resources: Rivers and Streams, Riparian Areas and Floodplains, and Water Quality	
Wildlife: Fish (T&E and BLM Sensitive Species)	
Wildlife: General Wildlife	
Wildlife: Migratory Birds, Including Raptors	
Wildlife: Special Status Species	
Recreation	

3.1.5 ADDITIONAL MANAGEMENT

During route evaluation, additional measures were considered and documented where appropriate for routes with the designations of "Open with management" or "Limited with management." Measures include but are not limited to such actions as gate installation, parking area creation, and monitoring for cultural sites or recreational uses. Details on monitoring, BMPs, and mitigation may be found in Sections L.4 through L.5 and L.16.3 of the TMP Implementation Guide (Appendix L). Mitigation measures would help reduce the impacts of the alternative travel networks on many of the TMA's natural and cultural resources, and monitoring would serve to track the effectiveness of mitigation measures.

3.2 POTENTIAL IMPACTS ON THE TMA'S NATURAL AND HUMAN ENVIRONMENT

3.2.1 CULTURAL RESOURCES

How would the route designation alternatives affect cultural resources within the TMA?

Affected Environment

BLM Manual 8100 – Foundations for Managing Cultural Resources defines cultural resources as "definite location[s] of human activity, occupation, or use identifiable through field inventory

(survey), historical documentation, or oral evidence." The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. They may be, but are not necessarily, eligible for the National Register of Historic Places (NRHP).

Cultural resources are identified through cultural resource inventories and surveys, which are defined as "a representation of the cultural resource content of a geographical locale" by BLM Manual 8110. The BLM cultural resource inventory system is composed of three kinds of inventory: Class I Existing Information Inventory, Class II Probabilistic Field Survey, and Class III Intensive Field Survey (BLM 2004b). All three kinds of inventory were used to identify cultural resources in this TMA.

The TMA contains important cultural resources of prehistoric and historic value, which may take the form of sites (such as lithic debitage scatters), artifacts, buildings, structures, features (such as rock imagery panels), and natural landscapes. Human presence in the TMA spans the last 12,000 years and includes a number of distinctive cultures: Paleo-Indian (12,500-8,000 years ago), Archaic (8,000-2,000 years ago), Formative (including Ancestral Puebloan and Fremont cultures; AD 1 to 1300), Protohistoric (AD 1400 to 1850), and Euro-American (1800s and 1900s) (Beck et al. 2016).

Environmental Effects Analysis

Both incidental and intentional human actions pose a threat to cultural resources (Sampson 2009). Direct and indirect impacts may occur to cultural sites from OHV use of routes designated as OHV-Open or OHV-Limited. For example, OHV travel through or immediately adjacent to a cultural resource site may cause a displacement of cultural artifacts or features at the site that would occur at the time of the activity or cause soil movement that may lead to erosion which could further displace cultural materials. Additional adverse OHV use-related impacts include site vandalism, collectors' piles, unauthorized artifact collection, etc. Impacts to cultural resources from routes designated OHV-Closed will be less than those designated as OHV-Open or OHV-Limited. Travel access restrictions (i.e., OHV-Closed designations) may be effective in reducing unauthorized damage to archaeological resources (Hedquist, Ellison, and Laurenzi 2014).

While it is assumed that route users will behave responsibly and not engage in illegal activities, the BLM acknowledges that the designation of routes as available for OHV use in areas with cultural resources may lead to impacts from vandalism, including looting, graffiti, or the illegal collection of artifacts. The level and nature of these potential impacts are influenced by the fragility of each cultural resource, their collectability, and their location and visibility. Even though a route may be designated as OHV-Open or OHV-Limited and may pass through or near a cultural resource, impacts to the cultural resource may not be major—that is, may not affect the resource's potential to convey the significance that may qualify it for the NRHP.

Closures of redundant routes were assessed in accordance with Stipulation III.B.1.c. of the Travel PA for the potential to shift, concentrate, or expand use on open routes. When designating routes as OHV-Closed, traffic may be concentrated on nearby routes with the same destination.

However, this assumes an equal distribution of use across a finite route network; designating a rarely used route as OHV-Closed may not appreciably increase traffic (concentrate use) on others. When evaluating potential impacts to cultural resources from route designations and resultant changes in route concentration (if any) the BLM considered numerous factors, including the use level of the route (primary, secondary, or tertiary), the durability of the route surface (i.e., sandy soil, natural gravels, or bedrock), the durability of the cultural resource, the extent of any impacts (minor, moderate, or major), and the reasons users select the route for travel (as documented in the Route Reports (Appendix I) and in notes from IDT meetings for this project).

Previously documented cultural resources data was recorded during the route evaluation process described in Section 2.1.3. As noted above, cultural resources include archaeological sites that are both eligible and not eligible for the NRHP. Occasionally sites that were recorded prior to 1980 were not assigned an NRHP eligibility status. Sites that are eligible for the NRHP are often a focus in cultural resources management because they contain information, distinctive design and/or construction, or are associated with significant events or persons. Cultural resources that have not been evaluated for the eligibility for the NRHP may or may not possess this significance. As such, route analysis was divided into eligible, not eligible, and unevaluated cultural resources categories. Figure 3.1 – Figure 3.3 show the number of routes in each alternative network that are proximate to cultural resource sites. Proximity distances are based on the professional judgment of BLM cultural specialists. For eligible and unevaluated cultural resources, proximate is defined as within ¼ mile of the site. For cultural resources that have been determined not eligible for the NRHP, proximate is defined as being within 15 meters of the site. Both measures of proximity were used as indicators of potential impacts that an alternative network may have on archaeological resources.

Figure 3.1: Number of Evaluated Routes Proximate to Cultural Resources Eligible for the NRHP

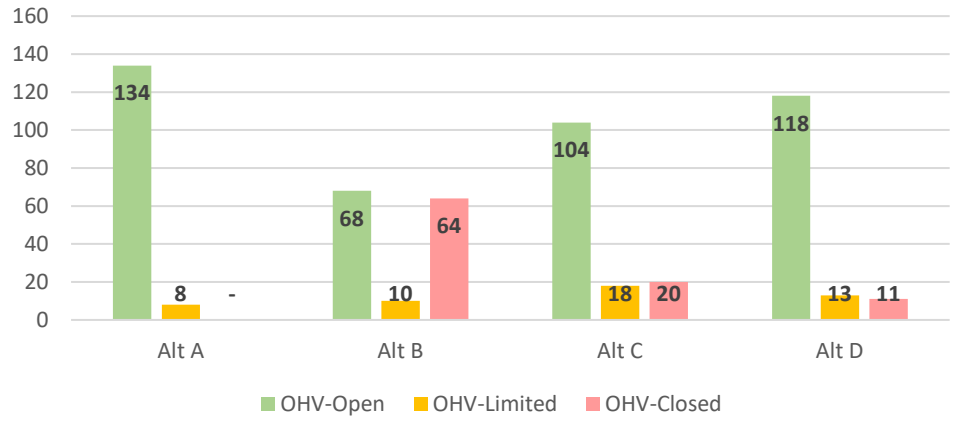


Figure 3.2: Number of Evaluated Routes Proximate to Cultural Resources Not Eligible for the NRHP

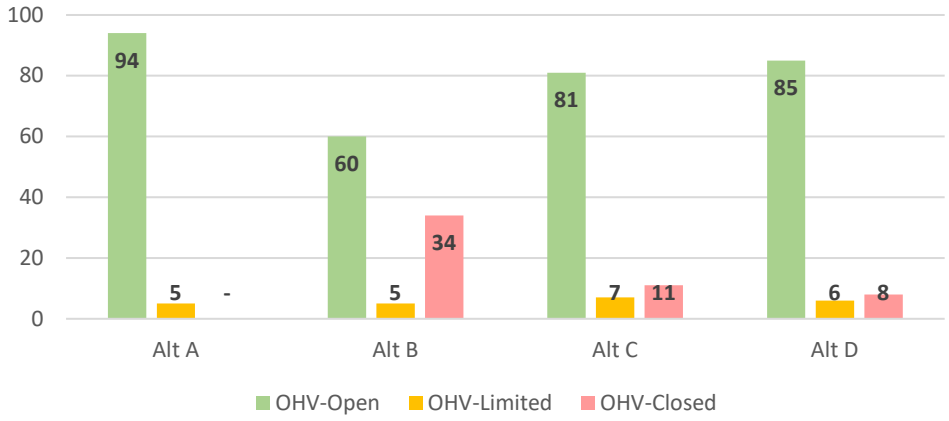
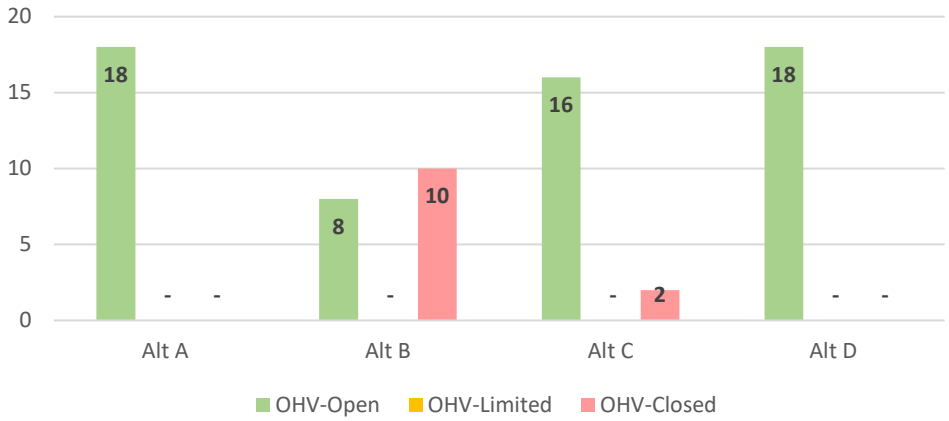


Figure 3.3: Number of Evaluated Routes Proximate to Unevaluated Cultural Resources



In addition to the NEPA analysis here, the BLM is also currently engaged in compliance with Section 106 of the National Historic Preservation Act. The objective of Section 106 is to identify the effects of these travel plan alternatives to historic properties, which are defined as cultural resources that are eligible for the NRHP. The BLM is following the identification stipulation outlined in the 2017 Settlement Agreement and in Stipulation III of the Travel PA. The steps of this compliance effort are outlined in Appendix H. Once a finding of effect has been determined by the BLM, the findings will be considered in selecting an alternative that minimizes effects to historic properties. If effects to historic properties cannot be avoided or minimized through route closure, the BLM will prepare a Historic Property Treatment Plan to outline the means for minimizing and mitigating any adverse effects.

Alternative A (No Action/Current Management)

Under Alternative A, there would be no route designation changes in the TMA. All 142 evaluated routes proximate to (within ¼ mile of) eligible cultural resources would remain available for OHV use (OHV-Open or OHV-Limited). All 99 evaluated routes proximate to (within 15 meters of) not eligible cultural resources would remain available for OHV use. And all 18 evaluated routes proximate to (within ¼ mile of) unevaluated cultural resources would remain OHV-Open. Impacts to cultural resources from ongoing OHV use (including damage

from trampling, theft, and vandalism; erosion and exposure of cultural resources from travel-related disturbances that leaves cultural resources more susceptible to loss and damage; access that is beneficial for interpretive or educational opportunities) would reflect continuation of current management.

Alternative B (Natural Resource Emphasis)

Compared to Alternative A, the Alternative B travel network would have 45.1% fewer evaluated routes designated for OHV use (OHV-Open or OHV-Limited) that are proximate to eligible cultural resources. Of the evaluated routes proximate to not eligible cultural resources, 65 would be designated for OHV use, a 34% reduction from Alternative A. In addition, 8 of the evaluated routes proximate to unevaluated cultural resources would be designated for OHV use, a 56% reduction from Alternative A. Under Alternative B, the same types of impacts on cultural resources from OHV use noted above would continue to occur on those routes designated for OHV use. Overall, given reductions in routes designated for OHV use, this alternative would have the least potential of any of the alternatives for OHV-related impacts to cultural resources within the TMA.

Alternative C (Multiple Use Emphasis)

Under Alternative C, 122 routes proximate to eligible cultural resources would be designated for OHV use, a 14% reduction from Alternative A. Of the evaluated routes proximate to not eligible cultural resources, 88 would be designated for OHV use, an 11% reduction from Alternative A. In addition, 16 of the evaluated routes proximate to unevaluated cultural resources would be designated for OHV use, also an 11% reduction from current management. Under Alternative C, the same types of impacts on cultural resources from OHV use noted above would continue to occur on those routes designated for OHV use. Overall, given reductions in routes designated for OHV use, this alternative would have less potential than Alternatives A and D but more potential than Alternative B for OHV-related impacts to cultural resources within the TMA.

Alternative D (Access Emphasis)

Under Alternative D, 131 routes proximate to eligible cultural resources would be designated for OHV use, an 8% reduction from Alternative A. Of the evaluated routes proximate to not eligible cultural resources, 91 would be designated for OHV use, an 8% reduction from Alternative A. All 18 of the evaluated routes proximate to unevaluated cultural resources would be designated for OHV use, the same as current management. Under Alternative D, the same types of impacts on cultural resources from OHV use noted above would continue to occur on those routes designated for OHV use. Overall, given reductions in routes designated for OHV use, this alternative would have less potential than Alternative A but more potential than Alternatives B and C for OHV-related impacts to cultural resources within the TMA.

Cumulative Impacts

The geographic scope or CIAA for cultural resources is the area within a quarter mile buffer of all routes proposed for designation as OHV-Open or OHV-Limited within the TMA. This encompasses the space in which the BLM has identified direct and indirect impacts that may occur and thus is a reasonable estimation of the space in which cumulative effects may occur

given the types of anticipated effects resulting from route designation and the types of cultural resources present within the project area.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative impacts to cultural resources in the CIAA include the following:

- Land and water-based recreation use
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium
- Livestock grazing and related range improvement and facility developments

Accumulating impacts to cultural resources in the CIAA include disturbance and loss of site integrity from development and use activities and rubbing on or trampling of resources or sites from livestock.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would be a continuation of current conditions, and an overall incremental change to cultural resources within the CIAA is not anticipated.

None of the action alternatives B-D propose new construction of routes or designating routes that were not already available for OHV use in the 2008 RMP and subsequent amendments. Each of the alternatives would reduce routes designated for OHV use and provide for reclamation of decommissioned routes. The action alternatives would also implement comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to cultural resources that could occur. None of the action alternatives are expected to result in any incremental impacts on cultural resources when added to other past, present, and reasonably foreseeable actions.

3.2.2 Lands with Wilderness Characteristics

How would the route designation alternatives impact inventoried wilderness characteristics in Lands with Wilderness Characteristics (LWC) areas?

Affected Environment

Travel management in LWCs follows national guidance, which includes BLM Manual 6310—Conducting Wilderness Characteristics Inventory on BLM Lands (BLM 2012b) and BLM manual 6320—Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process (BLM 2012c). The LWC inventory manual provides LWC context-based definitions for primitive routes and roads on pages 11 to 12. It also provides route analysis guidance in its Appendix C. In LWC units, which are not managed for wilderness character, OHV use is permitted to continue along designated routes. Routes within LWC underwent individual comprehensive route evaluations by the IDT; they received proposed OHV transportation designations of either OHV-Open, OHV-Limited, or OHV-Closed. A sample route report is found in Appendix I. The complete set of route reports are available on the project's ePlanning website.

The TMA has 8 inventoried LWC units comprising 62,594 acres of BLM lands, within which are 40.5 miles of evaluated routes. While BLM actively manages to protect and preserve wilderness character in Natural Areas as described in the 2008 RMP, no inventoried LWC units within this TMA are managed to maintain wilderness characteristics (i.e., are not Natural Areas) and are instead managed for multiple uses. Current LWC unit boundaries are based on LWC inventory completed for the 2008 RMP and on several inventories preceding the 2016 Moab Master Leasing Plan. The BLM's inventory of the LWC units in the Labyrinth/Gemini Bridges TMA found these units to possess wilderness characteristics even though the routes designated by the 2008 RMP Travel Plan (or subsequent amendment) existed at the time of the wilderness inventory. In other words, the presence of the routes did not disqualify these lands as possessing wilderness characteristics. The 2017 Settlement Agreement stipulates that "For purposes of minimizing damage to public lands with BLM-inventoried wilderness characteristics, the BLM will consider the potential damage to any constituent element of wilderness characteristics, including naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation, for each alternative route network."[8]

Table 3.2: LWC Units

LWC Unit Name	Acres on BLM Lands	Miles of Evaluated Routes in LWC
Arches LWC	3,032	0.1
Dead Horse Cliffs LWC	760	0.0
Dead Horse Cliffs Additions LWC	0.1	0.0
Goldbar LWC	6,561	7.1
Goldbar Canyon LWC	329	0.0
Horsethief Point LWC	8,322	0.0
Labyrinth Additions LWC	43,588	33.3
UT-020-SRD-Labyrinth Canyon A LWC	2	0.0

Environmental Effects Analysis

Potential effects that OHV use may have on LWCs include degradation or loss of naturalness, sufficient size, and outstanding opportunities for solitude and/or primitive and unconfined recreation, all key components of wilderness character. Designations allowing ongoing OHV use in LWC units may contribute to degradation or loss of these components as a result of OHV-related impacts such as vehicle noise, wheel tracks, dispersed camp sites, resource damage on or along travel routes, and expanded human presence. OHV access and the presence of OHVs can also lead to a loss of solitude and opportunity to experience primitive recreation. Resource damage can occur along routes from parking, passing, staging, authorized roadside camping, fire-wood gathering, etc. resulting in degradation of naturalness; however, users are expected to comply with 43 CFR § 8341.1 and not operate an OHV "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." Designating routes as OHV-Closed and earmarking routes for decommissioning and reclamation could help reduce

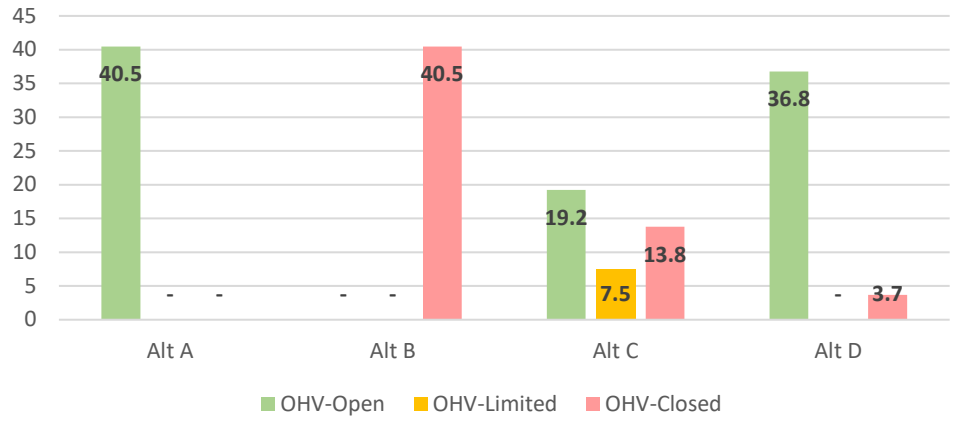
[8] The baseline monitoring report, available on this project's ePlanning page, was made publicly available on September 16, 2021. Any routes showing "damage" will be monitored prior to September 16, 2022, if this EA is not yet finalized at that point.

the overall network footprint within or near LWC units. Also, travel networks that provide for a variety of OHV opportunities could help reduce OHV user inclination to travel off-route and degrade natural character. Continuation of OHV use on designated routes would confine soil and vegetation disturbance caused by motor vehicles to those routes, and result in no additional change to the natural character of the LWC units. TMP implementation actions such as placement of barriers for closed routes, signing, and route maintenance could result in localized disturbances that would temporarily contribute to degradation of naturalness (see Implementation Guide in Appendix L).

During the LWC inventories, routes that were found to meet the definition of a Wilderness Inventory Road, or that otherwise constituted a substantial impact to naturalness, were used as LWC unit boundaries. In some cases, these routes are bounded by areas having LWC on both sides, with the route itself excluded from the unit. Some are through routes that delineate an entire unit boundary. Others are dead-end routes, stopping short of dissecting the unit. These routes that meet the Wilderness Inventory Road definition, that are otherwise excluded due to their impacts to naturalness, and that dead-end are referred to as "cherry-stems" (see BLM Manual 6310, Glossary, pgs. 10-11). Potential impacts to LWCs from OHV use of cherry-stemmed routes may be considered in two forms: 1) impacts that may occur within the LWC unit as a result of access from a cherry-stemmed route, and 2) impacts to LWCs that may occur on the route itself. Use of cherry-stemmed routes may indirectly contribute to impacts to LWCs because of their proximity to LWC; that is, noise and other access-related impacts such as off-route camping on cherry-stems could indirectly impact the LWC. In addition, some evaluated routes are in LWC units and are not cherry-stemmed.

Figure 3.4, below, was used to inform effects analysis. It shows network miles that are *in* LWCs (that is, *not* cherry-stems or boundaries). This mileage is used as an indicator of the networks' potential impacts to LWCs.

Figure 3.4: Miles of Evaluated Routes in LWC



Alternative A (No Action/Current Management)

Of the current designated route network, about 4% of the mileage designated for OHV use (OHV-Open or OHV-Limited) is located in areas inventoried as having wilderness characteristics. All 40.5 miles of evaluated routes in the TMA's LWC units would remain available for OHV use under Alternative A, which may result in dust, noise, and user conflicts

(i.e., OHV vs. primitive recreation users), potentially diminishing these areas' characteristics of naturalness and potential for solitude and primitive recreation. Impacts to LWCs within the TMA would reflect a continuation of current management.

Alternative B (Natural Resource Emphasis)

Alternative B proposes to designate as OHV-Closed all 40.5 miles of evaluated routes in the LWC units, resulting in a 100% reduction in miles designated for OHV use within LWCs compared to Alternative A. All of the OHV-Closed miles would be decommissioned and earmarked for reclamation, thereby enhancing the naturalness of the area. Alternative B's OHV route closures in LWC areas would eliminate the impacts of OHV travel on the fundamental components of wilderness characteristics. Overall, this alternative's potential for OHV use-related impacts to wilderness characteristics of LWC units would be lower than all other alternatives.

Alternative C (Multiple Use Emphasis)

Alternative C would designate 26.7 miles of evaluated routes within LWCs for OHV use, a 34% reduction compared to Alternative A. Of the 13.7 miles that would be closed to OHV use, 0.2 miles would allow authorized use only and the rest would be decommissioned and earmarked for reclamation. Under Alternative C, the same types of effects to LWCs noted above would continue to occur where routes are designated OHV-Open or OHV-Limited. Overall, this alternative's potential for OHV use-related impacts to wilderness characteristics of LWC units would be lower than Alternatives A and D but higher than Alternative B.

Alternative D (Access Emphasis)

Compared to Alternative A, Alternative D proposes to reduce the miles of evaluated routes designated for OHV use within LWCs by 9% (3.7 miles). All 3.7 miles of OHV closures would be decommissioned and earmarked for reclamation. Under Alternative D, the same types of effects to LWCs noted above would continue to occur where routes are designated OHV-Open. Overall, this alternative's potential for OHV use-related impacts to wilderness characteristics of LWC units would be lower than Alternative A but higher than the other action alternatives.

Cumulative Effects

The CIAA for LWC is the LWC units throughout the MFO. If OHV users are diverted from the Labyrinth/Gemini Bridges TMA, it could impact LWCs in those areas not included in the TMA.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to the LWCs include the following:

- Land and water-based recreation use including use of the Green River for boating activities and land-based recreation use of roads, trails, and campgrounds.
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium
- Livestock grazing and related range improvement and facility developments

Accumulating impacts to the LWC units include noise and human activity from recreation use of dispersed campsites, and development activities and equipment use. The noise and human presence from these activities may affect size, solitude, naturalness, and primitive and unconfined recreation or supplemental values of the LWC units. Accumulating impacts also include reduction in naturalness from livestock presence.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would be a continuation of current conditions, and an overall incremental change to LWC units is not anticipated.

Each action alternative would reduce routes designated for OHV use in LWC units and provide for reclamation of decommissioned routes. All of the action alternatives would also provide for operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to LWC that could occur. None of the action alternatives are expected to result in incremental impacts on LWC when added to other past, present, and reasonably foreseeable actions.

3.2.3 SOILS, NATIVE VEGETATION, AND WEEDS AND INVASIVE SPECIES

How would the route designation alternatives impact soil stability, native vegetation communities, and introduction and spread of invasive weeds?

The TMA's native vegetation types exist in a variety of soil types and depths as discussed below in Affected Environment for each vegetation type. Soil disturbance and erosion can create an environment that is conducive to the introduction and spread of noxious weeds and invasive species. Because of this interrelationship, these three resource topics are presented together in this section.

Affected Environment

Soil types in the MFO area, including the Labyrinth Rims/Gemini Bridges TMA, are variable, reflecting the interactions between topography, elevation, parent material, and time. Topography ranges from nearly level valley bottoms to vertical cliffs. The area has a variety of soil types, including highly saline soils and soils with high and moderate erosion potential. Biological soil crusts (also called cryptogamic or cryptobiotic soils) found throughout the MFO area are composed primarily of cyanolichens and cyanobacteria. These crusts are important soil stabilizers. Repeated disturbance or trampling of biological crusts can permanently destroy the living filaments of the organisms, preventing the recovery of the crusts. Blowing dust from disturbed soils can cover nearby crusts, depriving them of needed sunlight, ultimately leading to the death of the living organisms that comprise the crusts. Without these crusts, soil stability, fertility, and moisture retention capacity can be lost (BLM 2013). Within the TMA, 859.6 miles of evaluated routes are in areas with highly or moderately erodible soils. Of these, 166.0 miles receive routine maintenance, and 693.6 miles receive very little or no maintenance.

The Colorado Plateau, with its variety of elevations and precipitation zones, provides a range of biodiversity. Vegetation within the TMA is typical of both desert upland and pinyon-juniper environments, including saltbush, greasewood, shadscale, Indian ricegrass, sagebrush, tamarisk,

wild rye, and rabbitbrush. The canyon bottoms themselves contain a wide variety of riparian vegetation, including cottonwood and willows (BLM 2018). The majority of the TMA is comprised of four primary native vegetation communities or biomes: pinyon juniper, salt desert scrub, blackbrush, and sagebrush. Native vegetation provides forage for livestock grazing as well as habitat for wildlife and serves a major role in the hydrologic cycle as an interface between the area's soils and the atmosphere. Some native vegetation communities such as blackbrush show a poor history of revegetation, and some communities such as sagebrush have experienced high percentages of conversion to cheatgrass. Analysis of alternative network designations on native vegetation below will focus on the four predominant native vegetation communities (biomes) within the TMA:

Table 3.3: Primary Biomes within the TMA

Biome	BLM Acres	% of Total	Miles of Evaluated Routes within Biome	Description
Blackbrush	102,696	34%	467.1	Occurs at elevations of 2,500-8,000 feet in well-drained soils. Occurs in pure stands and as part of several other vegetation types. Blackbrush communities are generally bounded by big sagebrush and juniper in this area, and they are associated with sagebrush, shadscale, winterfat, greasewood, and rabbitbrush. This vegetation type has a poor history of revegetation. (BLM 2013, USFS 2001)
Pinyon-Juniper	92,125	30%	262.0	Occurs at elevations of 4,700-8,600 feet on landscapes of varied topography. Pinyon—which is a valuable resource for firewood harvest and wildlife habitat—tends to dominate at higher elevations, juniper at lower elevations. This vegetation community is typically associated with sagebrush, Mormon tea, and blackbrush. (BLM 2013)
Salt Desert Scrub	65,361	22%	219.0	Occurs at elevations of 4,000-5,400 feet in saline or alkaline soils with low moisture that are susceptible to wind and water erosion from surface disturbances. Salt desert scrub communities are associated with shrubs such as shadscale, greasewood, blackbrush, four-wing saltbush, Nuttall's saltbush, mat saltbush, Mormon tea, spiny hopsage, horsebrush, and rabbitbrush. Associated forbs include snakeweed and buckwheat. And associated grasses include wildrye, galleta, Indian ricegrass, and sand dropseed. (BLM 2013)
Dunes	21,451	7%	88.2	On the Colorado Plateau, dunes are found primarily in the canyonlands and high plateaus. Dune lands are characterized by mounds of sand 4 to 20 feet in height and 10 to 200 feet in diameter. Dunes support little vegetation, if any. The present vegetation in most areas consists of sand sage, Havard oak, slender buckwheat, Indian ricegrass, James galleta, sand dropseed, sandhill muhly, and a variety of forbs. In the lower-lying areas where the water collects it can support Fremont cottonwood and greasewood. Dune communities occur in elevation from 4,100 to 5,660 feet with an average precipitation of 5 to 10 inches annually. (BLM 2013)

The presence of noxious weeds and invasive species is often related to disturbances and loss of native species in those systems. Weed species are abundant, especially tamarisk and Russian olive. Encroachment of noxious and invasive species presents a problem both along river corridors as well in large areas of uplands and rangelands. OHV use on routes has the potential to introduce or spread invasive species and noxious weeds. Travel routes can serve as corridors where invasive species and noxious weeds can be introduced or spread throughout connecting

routes. For more information on exotic and introduced plants as well as invasive and noxious weeds in the MFO's jurisdiction, see pages 3-173 through 3-174 of BLM 2008b. Noxious weeds are also problematic in riparian areas. For more on travel-related effects to riparian resources, see Section 3.2.6. Within the TMA, 164.4 miles of evaluated routes are in areas of current weed infestations.

Environmental Effects Analysis

Travel network alternatives that limit the number of routes available for OHV use would provide higher levels of protection to soils from surface disturbances (decision SOL-WAT-11, SOL-WAT-16, and SOL-WAT-17 in the 2008 RMP direct the MFO to protect soils and watersheds) and, indirectly, would provide higher levels of protection to native vegetation and riparian areas. Because some routes in the TMA cross through areas of cryptobiotic soils, travel network alternatives with fewer miles open to OHV use in these areas would better protect these important soil crusts. Additionally, travel routes, particularly those that do not receive regular maintenance, can serve as a conduit for saline-laden sediment transport into ephemeral, intermittent, or perennial drainages and riparian areas during runoff events; see section 3.2.6 for more on potential effects to water resources. Surface disturbances from occasional off-route vehicle travel (e.g., passing or parking, particularly along minimally maintained routes, which tend to be narrower) can also remove soil-stabilizing agents, such as vegetative cover, soil crusts, and woody debris. Loss of one or more of these agents increases potential erosion and sediment transport into water bodies and riparian areas.

OHV and related anthropogenic use can alter soil properties and cause changes in vegetation composition, contributing to land degradation and desertification. More specifically, compaction from OHV use increases soil bulk density and decreases porosity (Assaeed 2019). As soil compaction increases, the soil's ability to support vegetation diminishes because loss of porosity inhibits root penetration from accessing nutrients and water, and reduces the infiltration and availability of water. Thus, the size and abundance of vegetation may be reduced. Additionally, the above-ground portions of plants may be crushed or damaged, leading to reduced photosynthetic capacity and poor reproduction; fugitive dust from OHV use can also disrupt photosynthetic processes, suppressing plant growth and vigor (Ouren et al. 2007). Effects from soil alteration can extend beyond the route corridor and contribute to indirect landscape effects on plants. Particularly on hillslopes, OHV use can accelerate water erosion by decreasing infiltration rates, loosening surfaces, and channeling run-off (Brooks and Lair 2005). Ouren et al. conclude, "As vegetative cover, water infiltration, and soil-stabilizing crusts are diminished or disrupted, the precipitation runoff rates increase, further accelerating rates of soil erosion" (2007).

Such soil changes may exacerbate the introduction and spread of invasive plant species or noxious weeds. Routes are a primary pathway for plant invasions into arid and semi-arid ecosystems (Brooks and Lair 2005). A study by Von der Lippe and Kowarik (2007) showed that dispersal of seeds, particularly those of non-native species, by vehicles may accelerate plant invasions and induce changes in biodiversity patterns. Along travel routes, cover of native species can decrease, giving more opportunity for weeds to flourish (Assaeed 2019). On the Colorado Plateau, invasive cover is higher along verges of paved roads compared to primitive roads, indicating a greater effect along roads that receive higher levels of construction and maintenance (Gelbard and Belnap 2003). Overall, habitat alteration, fragmentation, and

deterioration lead to competition for water, space, and nutrients, which results in decreased reproductive success for native vegetation.

TMP implementation activities include installing new signs, road maintenance (grading, installing, and maintaining water control structures, surfacing, etc.), route decommissioning or reclamation (including ripping or scarifying road surfaces and planting seed, and grading/recontouring), installing fencing or barriers, or mulching on closed routes. If implementation is proposed that falls outside of the previously disturbed road prism area, additional site-specific NEPA may be required before the activity could occur.

Indicators of potential OHV route impacts on soil health and stability include miles of routes located in areas classified as soils with high or moderate erosion potential, and miles of routes located in areas of saline soils, as presented in Figure 3.5 and Figure 3.6, below.

Figure 3.7 – Figure 3.11, which present the miles of evaluated routes in the TMA's primary vegetation communities and areas of noxious weeds and invasive plants, are used as indicators of the TMA's overall vegetation and rangeland health.

Figure 3.5: Miles of Evaluated Routes in Highly or Moderately Erodible Soils

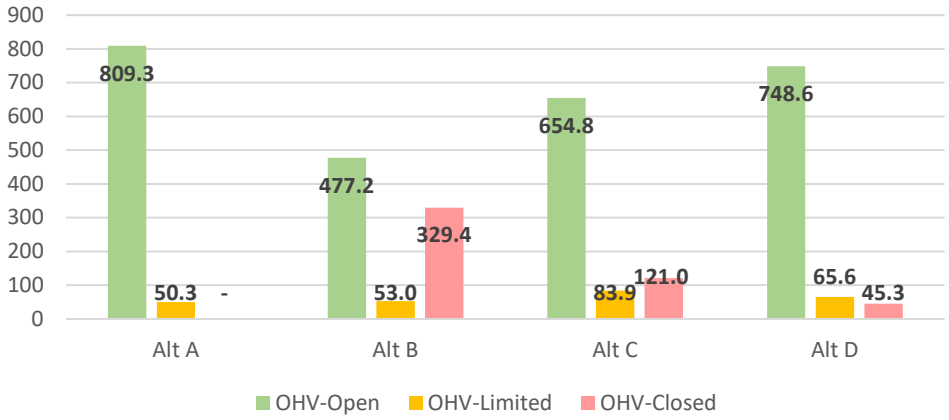


Figure 3.6: Miles of Evaluated Routes in Saline Soils

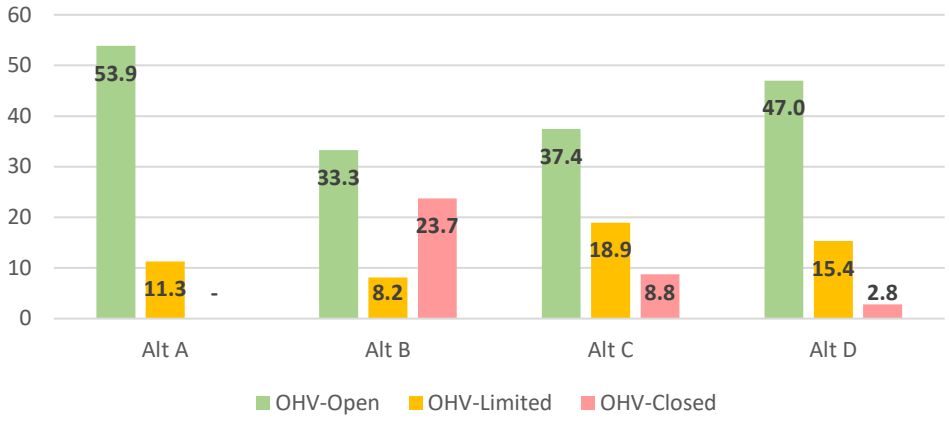


Figure 3.7: Miles of Evaluated Routes in Blackbrush

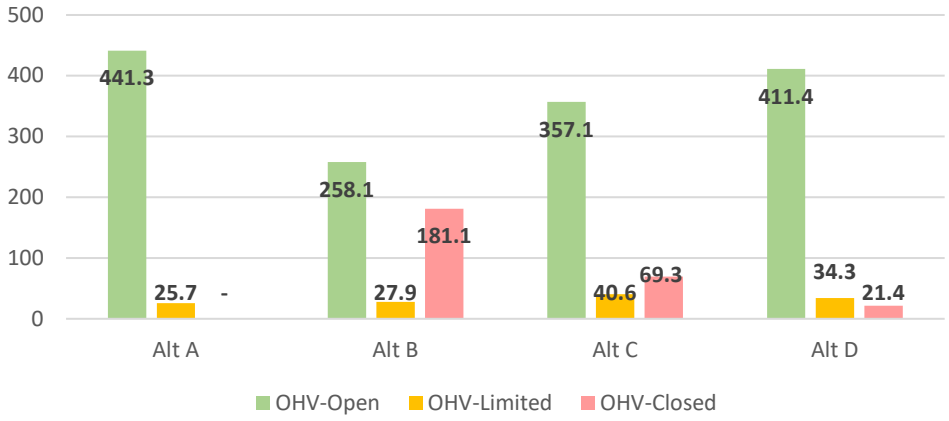


Figure 3.8: Miles of Evaluated Routes in Pinyon and Juniper Woodlands

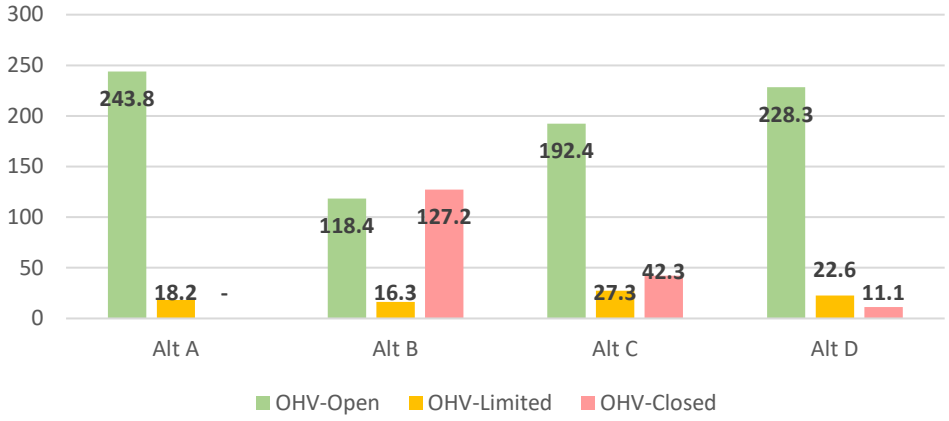


Figure 3.9: Miles of Evaluated Routes in Salt Desert Scrub

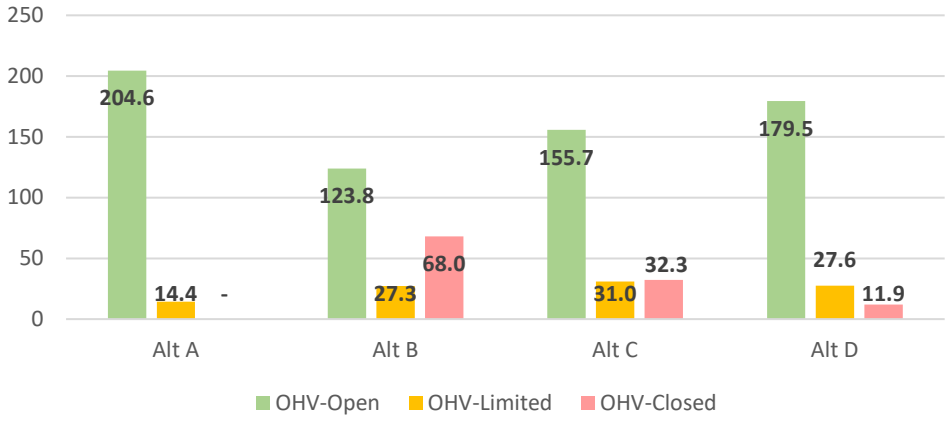


Figure 3.10: Miles of Evaluated Routes in Dunes

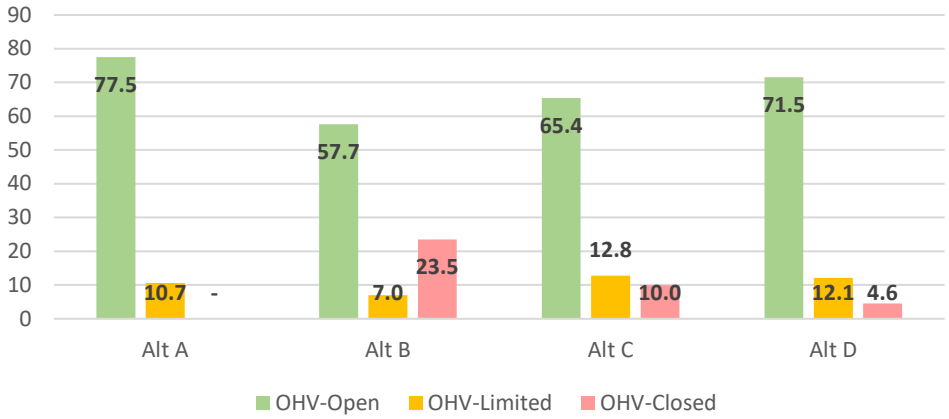
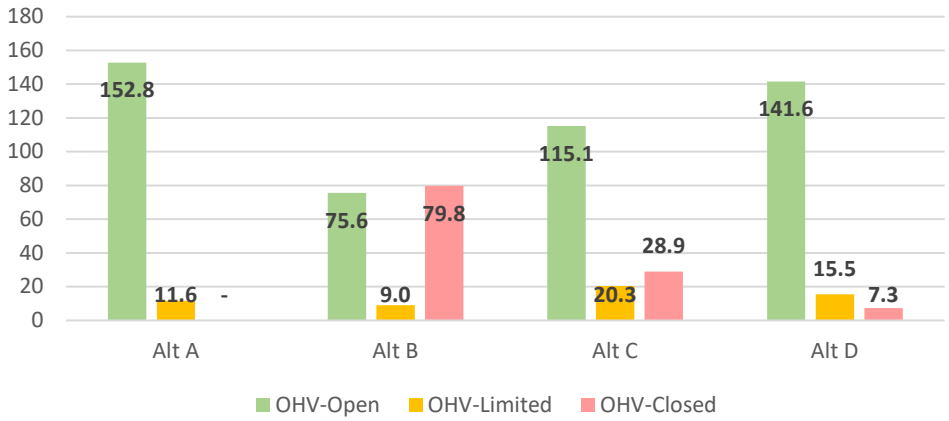


Figure 3.11: Miles of Evaluated Routes in Existing Weed Infestation Areas



Alternative A (No Action/Current Management)

Of the current designated travel network, 76% (859.6) of the miles are located in areas with erosive soils and 6% (65.1) are located in saline soils. Some of these routes currently designated for OHV use (OHV-Open or OHV-Limited) are located in riparian areas or in the vicinity of perennial streams, and nearly all routes in riparian areas are located in erosive soils, increasing the potential for sediment transport and salinization in the Green River drainage. Additionally, biologic soil crusts are found in various areas within the TMA, and Alternative A's OHV network leaves these soil crusts susceptible to access-related human impacts (i.e., damage or crushing from camping, exploring, and unauthorized off-road travel).

With all evaluated routes designated for OHV use, Alternative A would extend the potential for ongoing OHV use-related impacts such as crushing or trampling plants (driving on partially vegetated roadways, roadside parking, camping, exploring, etc.) as well as general loss of plants and loss of health and vigor from travel-related dusting and disturbance along routes. The Alternative A network also has 164.4 miles of evaluated routes designated for OHV use in existing weed infestation areas.

Impacts to soil stability and native vegetation from ongoing OHV use (i.e., increased soil compaction and susceptibility to erosion, surface rutting from OHV use during wet periods,

increased sedimentation into waterways, increased vegetation damage or loss, spread of invasive plants and noxious weeds, etc.) would reflect continuation of current management.

Alternative B (Natural Resource Emphasis)

Alternative B would designate 530.2 miles of evaluated routes in erodible soils for OHV use, a 38% reduction from Alternative A. In areas of saline soils, Alternative B would designate 41.5 miles of evaluated routes for OHV use, a 36% reduction from Alternative A. In the four primary biomes within the TMA, Alternative B would reduce the miles of routes designated for OHV use from 27% (in dunes) to 49% (in pinyon-juniper woodland). In areas of invasive species and noxious weeds, this alternative would designate 84.6 miles of evaluated routes for OHV use, a 49% reduction compared to Alternative A. Under Alternative B, the same types of effects on soil stability and native vegetation from OHV use noted above would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative would have the lowest potential of any alternative for OHV-related weed and invasive species spread, and for overall OHV-related impacts on native vegetation and soil stability.

Alternative C (Multiple Use Emphasis)

In areas of erodible soils, Alternative C would designate 738.7 miles of evaluated routes for OHV use, a 14% reduction from Alternative A. In areas with saline soils, Alternative C would designate 56.3 miles for OHV use, a 13% reduction from Alternative A. In the four primary biomes within the TMA, Alternative C would reduce the miles of routes designated for OHV use from 11% (in dunes) to 16% (in pinyon-juniper woodland). In areas of invasive species and noxious weeds, this alternative would designate 135.4 miles of evaluated routes for OHV use, an 18% reduction compared to Alternative A. Under Alternative C, the same types of effects on soil stability and native vegetation from OHV use noted above would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative's potential for OHV-related impacts to soil stability, native vegetation, and spread of invasive species and noxious weeds is lower than Alternative A but higher than Alternative B.

Alternative D (Access Emphasis)

In areas of erodible soils, Alternative D would designate 814.2 miles of evaluated routes for OHV use, a 5% reduction from Alternative A. In areas with saline soils, Alternative D would designate 62.4 miles for OHV use, a 4% reduction from Alternative A. In the four primary biomes within the TMA, Alternative D would reduce the miles of routes designated for OHV use from 4% (in pinyon-juniper woodlands) to 5% (in dunes). In areas of invasive species and noxious weeds, this alternative would designate 157.1 miles of evaluated routes for OHV use, a 4% reduction compared to Alternative A. Under Alternative D, the same types of effects on soil stability and native vegetation from OHV use noted above would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative's potential for OHV-related impacts to soil stability, native vegetation, and spread of invasive species and noxious weeds is lower than Alternative A but higher than the other action alternatives.

Cumulative Effects

The CIAA for soils, native vegetation, invasive species, and noxious weeds includes the entire TMA. This boundary was chosen because cumulative effects for soils resulting from travel route

designation decisions for the purposes of this analysis are considered localized relative to the location of the travel route-related impact, collectively the TMA network. Impacts from displaced soil transported downstream are accounted for as water quality issues and analyzed under water quality (section 3.2.6).

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to soils and native vegetation in the CIAA include the following:

- Land-based recreation, including motorized and non-motorized use (e.g., dispersed camping)
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium
- Livestock grazing and related range improvement and facility developments; livestock water infrastructure development to facilitate better grazing management on soils and vegetation
- Noxious weed and invasive species proliferation and treatment

Accumulating impacts to soils, crusts and native vegetation in the CIAA include surface disturbance from development and use activities, soil compaction on existing roads during use, trampling of native vegetation and soil crusts from livestock grazing and off-route recreation uses such as camping and exploring; loss of vegetation and soil nutrients from wildland fires; and spread of invasive species.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would reflect a continuation of current conditions, and an overall incremental change to soils and native vegetation within the CIAA is not anticipated.

None of the action alternatives B-D propose any new construction of routes, and each of these alternatives would reduce routes designated for OHV use and provide for decommissioning and reclamation of closed routes. The action alternatives would also implement comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to soils and native vegetation that could occur. None of the action alternatives are expected to result in incremental impacts on soil stability and native vegetation when added to other past, present, and reasonably foreseeable actions, while helping to reduce overall weed and invasive species spread within the CIAA.

3.2.4 SPECIAL DESIGNATION AREAS

How would the route designation alternatives impact the important and relevant values of the Areas of Critical Environmental Concern (ACECs) within the TMA, the Wild and Scenic River (WSR) quality of the Green River segment running along the TMA's western boundary, and the integrity of the Old Spanish National Historic Trail (NHT) within the TMA?

Affected Environment

ACEC designations highlight areas where special management attention is needed to protect important and relevant values such as historical, cultural, and scenic values, or fish and wildlife or other natural resources. ACEC designations indicate to the public that the BLM recognizes that an area has significant values and has established special management measures to protect those values (BLM 1988). The Federal Land Policy and Management Act directs the BLM to prioritize the identification and potential designation of ACECs through the land-use planning process. The types of activities allowed within an ACEC depend on the resource and natural values the area is designated to protect.

The Ten Mile Wash ACEC (4,988 acres; contains 22.4 miles of evaluated routes) is noted for its scenic, cultural, wildlife, and the natural systems or processes, as well as natural hazards that are found within the ACEC. Ten Mile Wash drains into the Green River just downstream of White Wash and upstream of Spring Canyon. The ACEC consists of the Ten Mile drainage from the Green River to two miles upstream of Dripping Spring. The ACEC's high-quality scenery includes sandstone buttes, cliffs, side canyons, and alcoves; the scenery is enhanced by the presence of a riparian greenbelt that is located within the bottom of the canyon. The ACEC contains significant cultural resources, including important habitation sites and unusual artifacts. The wash provides a favorable environment for wildlife within an extremely arid portion of the MFO and contains a rich mixture of riparian, wetland, and hydrologic resources. The riparian/wetland ecosystems in Ten Mile Wash are exemplary and rare; they serve as attractors for wildlife and for human activities, making the wash extremely susceptible to adverse impacts. The wash is subject to extreme flooding, posing potential safety hazards to OHV and camping activities. The potential for flooding is great because the Ten Mile Wash watershed basin drains an estimated 175,185 acres (BLM 2013).

The Highway 279/Shafer Basin/Long Canyon ACEC (1,081 acres within the TMA; contains 0.9 miles of evaluated routes within the TMA) is a corridor along the scenic byway of Highway 279 providing extraordinary scenery and ancient rock imagery. Shafer Basin itself is not within the TMA. For more information on this ACEC, see pages 3-130 through 3-131 and 3-136 through 3-137 of the 2008 RMP.

The Wild and Scenic Rivers (WSR) Act of 1968 established legislation for a National Wild and Scenic Rivers System to protect and preserve designated rivers in their free-flowing condition and also to protect and preserve their immediate environments. In 2019, the 49.2-mile segment of the Green River forming the TMA's western boundary was officially designated as "Scenic" in the Wild and Scenic Rivers System by the 2019 John D. Dingell, Jr. Conservation, Management, and Recreation Act, Public Law 116-9, for its outstandingly remarkable scenery, recreation, wildlife, fish, cultural, and ecological values. The designation of "Scenic" means the section of river is free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped but accessible in places by roads (BLM 2012d). Rock art and

other features in areas along this stretch of the Green River remain significant to some Native American populations. Cultural sites in the area are important for interpreting regional prehistory and many are eligible for the NRHP. This stretch of river provides excellent recreation opportunities, including flatwater paddling, camping, and hiking. The deeply incised Labyrinth Canyon was named by explorer John Wesley Powell for its many intricate twists and turns and is within the 49.2-mile WSR corridor. Varnished cliffs are cut in places by the narrow mouths of shaded side canyons with mature cottonwood trees. In the lower parts of the canyon, vertical cliffs of Wingate sandstone rise 1,000 feet above the river. Fossilized dinosaur bones are also visible from the river. This portion of the Green River provides habitat for four endangered fish: the Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker. The river contains critical habitat as designated by U.S. Fish and Wildlife Service for these species (Appendix J of BLM 2008b). The provisional[9] Labyrinth Canyon WSR corridor extends 0.25 miles out from the ordinary high-water mark on both banks of the river, as required by the WSR Act. As such it is considerably smaller in area that the geographical feature commonly known as Labyrinth Canyon. The provisional WSR corridor within the TMA contains 27.8 miles of evaluated routes. Some of this mileage, although in the WSR corridor, is not in the canyon itself but on the upland rims of the actual canyon.

In 2002, Congress designated several branches of the Old Spanish Trail as America's 15th National Historic Trail (P. L. 107-325), through an amendment to the National Trail Systems Act. This designation acknowledged the significant role that this pack trail network played in the exploration and settlement of the interior Mountain West and southern California. The Old Spanish NHT is a 700-mile trail that extends from Santa Fe, New Mexico to Los Angeles, California. The Old Spanish Trail, which was a Native American thoroughfare until the Spanish capitalized on the route in the 1700s and early 1800s, connected missions in southern California to the New Mexico trade centers of Taos and Santa Fe to the east. Continued use of the Old Spanish Trail in the middle 1800s eventually resulted in Euro-American settlement in the area by Mormon colonizers. Although few traces of the Old Spanish Trail routes have survived, the travel corridors through which the pack mule trains and New Mexico traders passed remain, and the challenges that faced these travelers can still be vicariously experienced. The Old Spanish NHT within the TMA parallels U.S. Highway 191 north of the Colorado River and then generally follows the Blue Hills road toward the town of Green River. This 40-mile portion of the trail in the TMA is subject to potential effects of erosion, littering, and damage or degradation that could diminish its importance (i.e., condition) as a National Historic Trail. Within the TMA, 113.1 miles of evaluated routes are within 1 mile of the Old Spanish NHT.

Environmental Effects Analysis

Regarding scenic values in the ACECs and the WSR corridor, travel route use can increase damage and disruption to the natural appearance of landscapes by providing opportunities for route proliferation, illegal off-road landscape damage, littering, and other harmful activities. Routes also impact visual resources by creating contrasting lines where they do not follow natural landscape contours. Changes in color and form from road cut backslopes and fill slopes create visible impacts. Potential effects on the riparian vegetation communities, wildlife habitat, and cultural values of the ACECs and WSR corridor include trampling of vegetation from off-route motorized or non-motorized use; soil disturbance; route proliferation; and exposure, loss,

[9] A permanent corridor will be established for the WSR during the RMP Amendment process.

or damage of cultural resources. WSR qualities can be negatively impacted where travel routes serve as a conduit for sediment transport (indirect) into intermittent or perennial drainages and riparian areas during runoff events. Motorized travel in areas of highly erosive soils or in sensitive areas, such as stream channels and riparian habitats, increases the potential for surface runoff (i.e., soil displacement) and the resultant water quality impacts. OHV use on routes crossing or in proximity to the Old Spanish NHT increases the potential for damage to the trail's historic integrity and increases the potential for disruption of travelers' vicarious experiences along the trail. Travel routes can also provide beneficial access for recreational opportunities as well as interpretive and educational opportunities for cultural resources. For mileage/designation breakdowns of routes in the ACECs, WSR corridor, and in proximity to the Old Spanish NHT, see Figure 3.12 – Figure 3.15.

Figure 3.12: Miles of Evaluated Routes in Ten Mile Wash ACEC

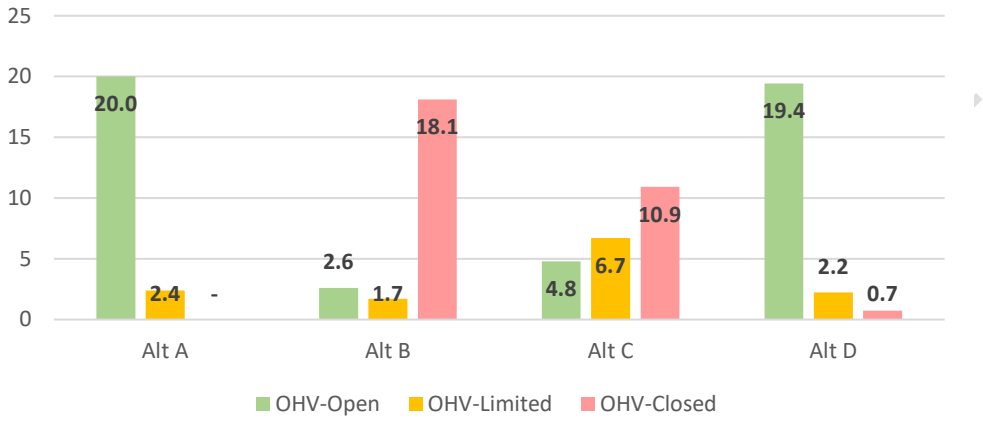


Figure 3.13: Miles of Evaluated Routes in Highway 279 / Shafer Basin / Long Canyon ACEC

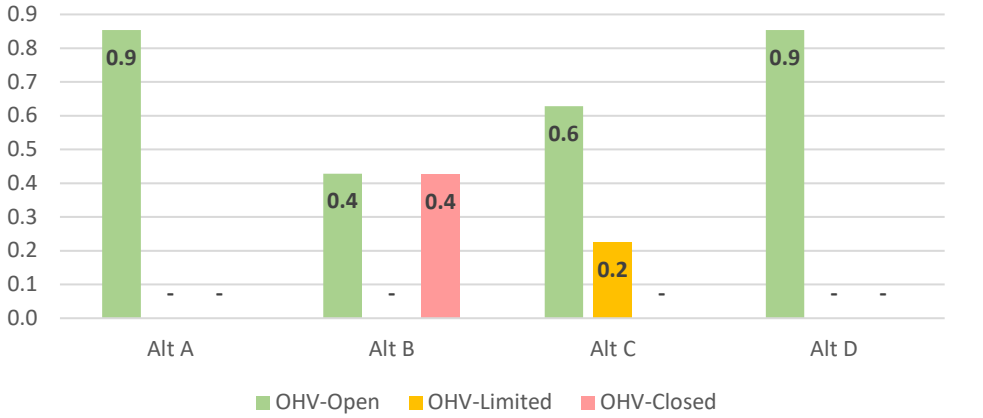


Figure 3.14: Miles of Evaluated Routes in Green River Scenic WSR Corridor

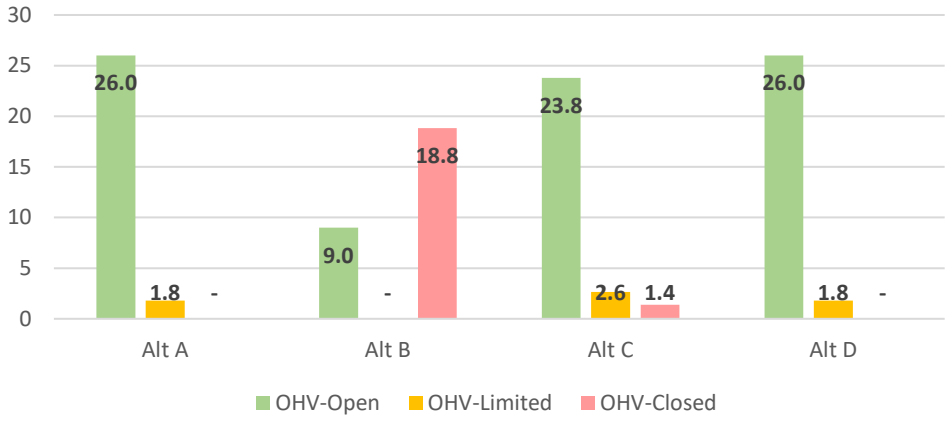
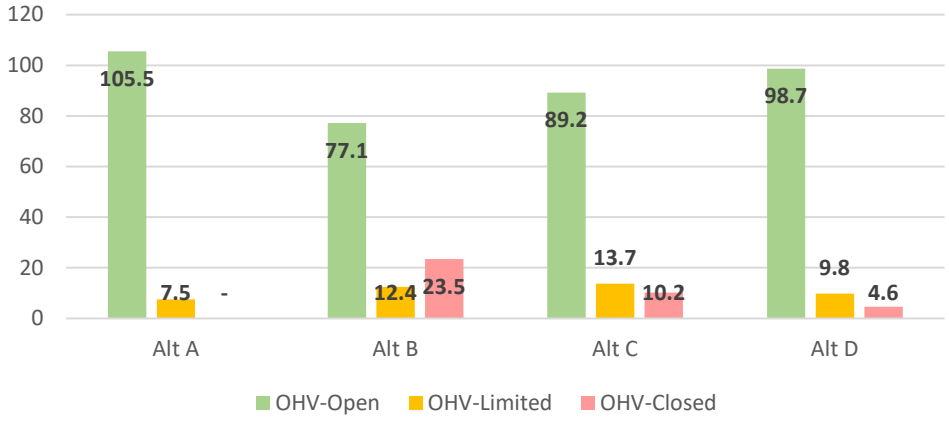


Figure 3.15: Miles of Evaluated Routes within 1 Mile of the Old Spanish NHT



Alternative A (No Action/Current Management)

Under Alternative A, all 22.4 miles of evaluated routes within the Ten Mile Wash ACEC and all 0.9 miles of evaluated routes within the Highway 279/Shafer Basin/Long Canyon ACEC would remain designated for OHV use (OHV-Open or OHV-Limited). These travel designations leave the ACECs susceptible to travel-related effects such as those discussed above which could potentially impact the ACECs' scenic qualities, increase the potential for damage to their cultural resources, and damage or destroy plant and wildlife habitat. Impacts to the ACECs' relevant and important values from ongoing OHV use would reflect a continuation of current management.

The WSR corridor within the TMA contains 27.8 miles of evaluated routes. Because these route miles would remain designated for OHV use under Alternative A, the WSR's outstandingly remarkable values (scenery, recreation, wildlife, fish, cultural resources, and ecology) would remain susceptible to travel route-related adverse effects of route proliferation, increases or decreases in recreation opportunities, sediment transport and water quality degradation, illegal off-road landscape damage, degradation of cultural resources, littering, etc. Overall, impacts to the WSR's outstandingly remarkable values from ongoing OHV use would reflect a continuation of current management.

Under Alternative A, all 113.1 miles of evaluated routes proximate to (within 1 mile of) the Old Spanish NHT would remain designated for OHV use. These OHV designations would leave the trail susceptible to travel-related effects which could potentially impact the resource values (i.e., historic, scientific, educational, interpretive, and recreational) that affect the purpose of the trail. Impacts would reflect a continuation of current management.

Alternative B (Natural Resource Emphasis)

Within the Ten Mile Wash ACEC, Alternative B would designate 4.3 miles of evaluated routes for OHV use (1.7 miles of which would be limited by vehicle width), an 81% reduction from Alternative A. Within the Highway 279/Shafer Basin/Long Canyon ACEC, Alternative B would designate 0.4 miles of evaluated routes for OHV use, a 44% reduction from Alternative A. The same effects on the ACECs' relevant and important values noted above would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, the potential for OHV-related impacts to the ACECs under this alternative would be the lowest of any alternative.

Alternative B would designate 9.0 miles of evaluated routes in the WSR corridor for OHV use, a 68% reduction compared to Alternative A. Under Alternative B, some effects on the corridor's outstandingly remarkable values would continue to occur on the miles of evaluated routes designated OHV-Open. Overall, the potential for OHV use-related impacts to the corridor under this alternative would be lower than all other alternatives.

Of the evaluated routes proximate to the Old Spanish NHT, Alternative B would designate 89.5 miles for OHV use, a 21% reduction from Alternative A. The effects noted above to the trail's purpose and integrity would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, the potential for OHV-related impacts to the Old Spanish NHT under Alternative B would be the lowest of any alternative

Alternative C (Multiple Use Emphasis)

Within the Ten Mile Wash ACEC, Alternative C would designate 11.5 miles of evaluated routes for OHV use, a reduction of 49% compared to Alternative A. And within the Highway 279/Shafer Basin/Long Canyon ACEC, Alternative C would designate all 0.9 miles for OHV use, the same as Alternative A. The same effects on the ACECs' relevant and important values noted above would continue to occur on those routes designated OHV-Open or OHV-Limited; however, 5.0 miles of the evaluated routes designated OHV-Limited within the two ACECs would be restricted seasonally to help protect wildlife. Overall, the potential for OHV-related impacts to the ACECs under this alternative would be lower than Alternative A but higher than Alternative B.

Alternative C would designate 26.4 miles of evaluated routes in the WSR corridor for OHV use, a reduction of 5% compared to Alternative A. Under Alternative C, effects on the corridor's outstandingly remarkable values would continue to occur on the miles of evaluated routes designated OHV-Open or OHV-Limited (routes proposed as OHV-Limited in the WSR corridor would be limited by vehicle width). Overall, the potential for OHV use-related impacts to the corridor under this alternative would be lower than Alternative A but higher than Alternative B.

Of the evaluated routes proximate to the Old Spanish NHT, Alternative C would designate 102.9 miles for OHV use, a 9% reduction from Alternative A. The effects noted above to the trail's purpose and integrity would continue to occur on those routes designated OHV-Open or OHV-

Limited. Overall, the potential for OHV-related impacts to the Old Spanish NHT under Alternative C would be lower than Alternative A but higher than Alternative B.

Alternative D (Access Emphasis)

Within the Ten Mile Wash ACEC, Alternative D would designate 21.6 miles of evaluated routes for OHV use, a reduction of 3% compared to Alternative A. And within the Highway 279/Shafer Basin/Long Canyon ACEC, Alternative D would designate all 0.9 miles of evaluated routes for OHV use, the same as in Alternative A. The same effects on the ACECs' relevant and important values noted above would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, the potential for OHV-related impacts to the Ten Mile Wash ACEC under Alternative D would be lower than Alternative A but higher than the other action alternatives. The potential for OHV-related impacts to the Highway 279/Shafer Basin/Long Canyon ACEC would be the same as in Alternative A, higher than the other action alternatives.

Under Alternative D, there would be no route designation changes within the WSR corridor in the TMA. Effects on the corridor's outstandingly remarkable values would continue to occur on the 27.8 miles designated for OHV use. Overall, the potential for OHV use-related impacts to the corridor under this alternative would be the same as Alternative A and higher than the other action alternatives.

Of the evaluated routes proximate to the Old Spanish NHT, Alternative D would designate 108.5 miles for OHV use, a 4% reduction from Alternative A. The effects noted above to the trail's purpose and integrity would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, the potential for OHV-related impacts to the Old Spanish NHT under Alternative D would be lower than Alternative A but higher than the other action alternatives.

Cumulative Effects

The CIAA for the ACECs is the entire TMA, which accommodates the setting of both ACECs. The CIAA for the WSR corridor is the Green River from Ruby Ranch to the Canyonlands National Park Boundary; this segment includes about four miles of river that is not within the TMA but is the segment that people experience by boat. The CIAA for the Old Spanish NHT is the trail segment north of the Colorado River up to the Green River crossing; this includes the trail within the TMA as well as the "tails" of the trail north and south of the TMA, which creates a geographic and topographic unit that people are likely to experience.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to these special designation areas include the following:

- Land- and water-based recreation, including land-based recreation use of roads, trails, campgrounds, and dispersed campsites and water-based use of the Green River for boating activities
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium

- Livestock grazing and related range improvement and facility developments; livestock water infrastructure development to facilitate better grazing management on soils and vegetation

Accumulating impacts to the ACECs include visual impacts from development activities and equipment use; disturbance and loss of cultural site integrity from development and use activities; disturbance of wildlife and wildlife habitat from human activity and development and equipment use; stream sedimentation and contamination from the presence of road prisms in areas with steep slopes or high erosion potential; livestock trampling of riparian vegetation. Accumulating impacts to the WSR corridor include loss of solitude and naturalness due to human activity and development in the vicinity of the river. Accumulating impacts to the Old Spanish NHT include loss of integrity from human activity on and around the trail as well as disruption of travelers' experiences from human activity or livestock grazing in the trail's vicinity.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would be a continuation of current conditions, and an overall incremental change to the ACECs, WSR, and Old Spanish NHT is not anticipated.

The action Alternatives B-D do not propose any new construction of routes. Alternatives B and C would reduce miles of routes designated for OHV use in all of the specially designated areas. Alternative D would reduce miles of routes designated for OHV use in the Ten Mile Wash ACEC and proximate to the Old Spanish NHT but would not reduce miles designated for OHV use in the Highway 279/Shafer Basin/Long Canyon ACEC or the Green River Scenic WSR corridor. The action Alternatives would all provide for reclamation of decommissioned routes. The action alternatives would also implement comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to the TMA's special designation areas. None of the action alternatives are expected to result in incremental impacts on the TMA's specially designated areas when added to other past, present, and reasonably foreseeable actions.

3.2.5 VISUAL RESOURCES

How would the route designation alternatives impact visual resources within the TMA?

Affected Environment

The Labyrinth/Gemini Bridges TMA is an internationally recognized, world-famous scenic destination containing a large number of areas that possess a high degree of scenic quality and a high level of visual sensitivity. The area draws an increasing number of visitors each year who come to the area to recreate and sightsee. The TMA contains a high level of visual appeal, as far-range views are attainable throughout much of the area. The Green River and its four major eastern canyons (Mineral, Hell-Roaring, Spring, and Ten Mile) drain much of the western portion of the TMA and provide dramatic canyon scenery. The Highway 313 corridor leading to Dead Horse Point State Park and the Island in the Sky entrance of Canyonlands National Park offers high scenic quality and visual sensitivity; Highway 313 is designated as a State Scenic Byway.

The quality of visual resources is *measured* with visual resource inventory (VRI) classes. VRI classes are assigned through an inventory process and serve as the basis for considering visual values. As noted in the BLM's visual resource inventory manual, "Inventory classes are informational in nature and provide the basis for considering visual values in the RMP process. They do not establish management direction and are not used as a basis for constraining or limiting surface disturbing activities" (BLM 1986). Class I is assigned to those areas where a management decision has been made previously to maintain a natural landscape. Classes II, III, and IV are assigned based on a combination of scenic quality, sensitivity level, and distance zones, with Class I containing the highest visual quality and Class IV the lowest visual quality. An inventory of visual resources for BLM lands in the TMA was conducted in 2011.

Visual resources in the TMA are *managed* in accordance with the 2008 RMP. Visual resource management (VRM) is a process the BLM uses to manage scenic values to reduce visual impacts of development or other surface-disturbing activities on public lands. There are four visual resource classes: I, II, III, and IV. Class I is assigned to areas where management decisions have been made to maintain natural landscapes. The objective of Class II is to retain the existing character of the landscape. The objective of Class III is to partially retain the existing character of the landscape and Class IV is assigned where decisions allow for activities that involve major landscape character modification. VRM classes are assigned through RMPs and are used as a basis for management (BLM 1986). For more details on visual resources management in the TMA, see pages 3-174 to 3-177 of the 2008 Moab Proposed RMP/EIS (BLM 2008b)

Table 3.4: Miles of Evaluated Routes by VRI Class

VRI Class	BLM Acres	Miles
VRI Class I	0	0.0
VRI Class II	189,736	729.0
VRI Class III	50,120	168.5
VRI Class IV	63,960	230.1

Table 3.5: Miles of Evaluated Routes by VRM Class

VRM Class	BLM Acres	Miles
VRM Class I	0	0.0
VRM Class II	108,365	392.0
VRM Class III	153,212	560.5
VRM Class IV	42,415	175.3

Environmental Effects Analysis

Existing travel routes and OHV use can inadvertently contribute to damage and disruption to the natural appearance of landscapes by providing OHV access opportunities for route proliferation (i.e., unauthorized user-created OHV routes extending off existing routes). Other travel-related surface disturbances such as roadside camping can lead to expansion of invasive species and noxious weeds and subsequently higher potential for disruptive wildfire events. OHV use on dirt roads can increase dust levels in the air, the extent of which depends on traffic characteristics and road quality (Etyemezian et al. 2003). In turn, the presence of dust particles in the air can reduce viewsheds (Duniway et al. 2019). Routes also impact visual resources by creating contrasting lines where they do not follow natural landscape contours. Because they lack formal design and construction standards, user-created routes may not follow ground contours and can extend up

slopes, leading to rilling, erosion, and contrasting lines. Changes in color and form from road cuts and fills create visible impacts. However, the formal establishment of a route network that includes operation and management components (such as those provided in the action alternatives) can help minimize the potential effects noted above of route proliferation and future degradation of visual resources. Under all action alternatives, the application of specified operation and management tools provided in the TMP Implementation Guide (Appendix L)—such as human-made barriers, route markers, and signs to educate OHV users of low-impact and responsible use—would help reduce or prevent impacts to the visual elements of line, form, and color.

Regardless of the final route designation decision for each travel route, it is assumed there will be follow-up action on the ground. For permanently closed routes, it can be assumed that actions would include the placement of closure signs, reclamation, or installation of barricades. For routes designated for OHV use, maintenance actions may include the use of heavy equipment for grading and drainage maintenance or hand tools for directional signing. The effects of these actions on visual resources are expected to be minor and short-term but are included in this analysis. Overall, the route designations will result in some routes being closed, thereby eventually reducing the overall footprint of the route network on the landscape. Fewer routes mean that there would be fewer impacts to the natural-appearing landscape, thus enhancing visual resources. More site-specific analysis of maintenance or management actions may be needed if such actions could affect high-quality visual landscapes.

Figure 3.16 and Figure 3.17, below, inform the effects analysis. They present the miles of routes in VRI and VRM Class II areas in the TMA. Analysis does not include Class I, as there are no evaluated routes within Class I areas. It also does not include Class III and IV because they allow for changes in form, line, and color and would not provide for a useful comparison between alternatives.

Figure 3.16: Miles of Evaluated Routes in VRI Class II Areas

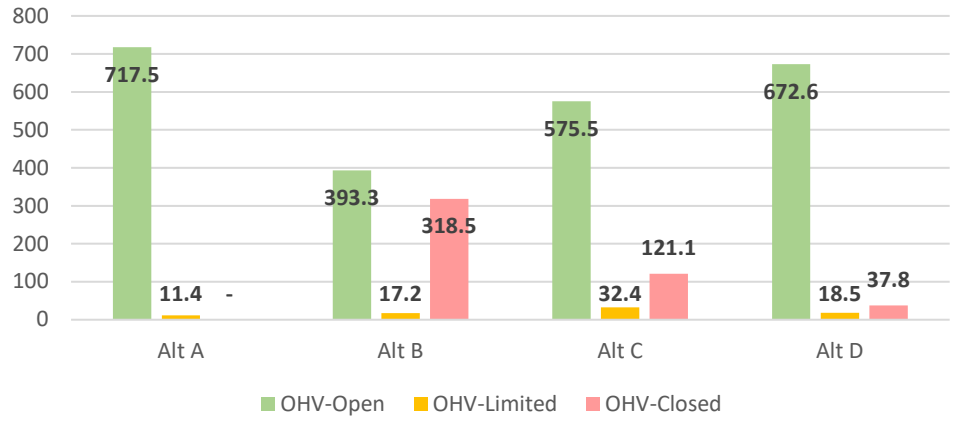
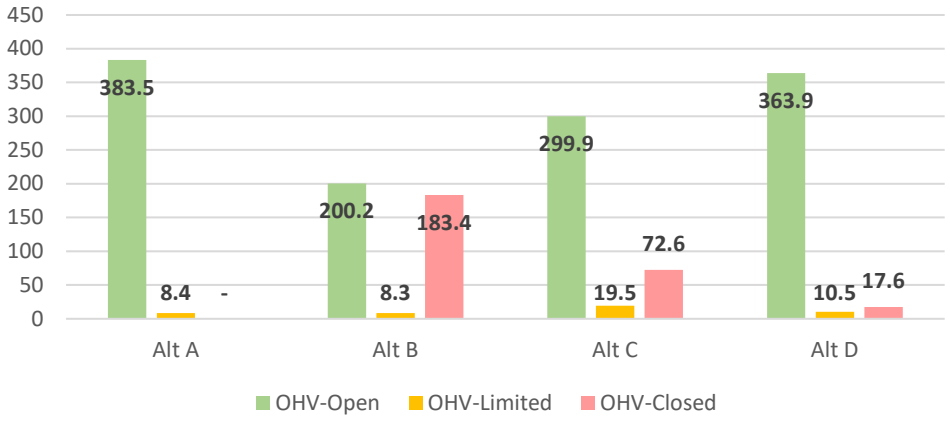


Figure 3.17: Miles of Evaluated Routes in VRM Class II Areas



Alternative A (No Action/Current Management)

Under Alternative A, there would be no route designation changes in the TMA. All of the 729.0 miles of evaluated routes in VRI Class II areas and all 392.0 miles of evaluated routes in VRM Class II areas would remain designated for OHV use (OHV-Open or OHV-Limited). Impacts to the TMA's visual resources (i.e., degradation of visual quality, disruption of natural appearance, etc.) would reflect a continuation of current management.

Alternative B (Natural Resource Emphasis)

In VRI Class II areas, Alternative B would designate 410.5 miles for OHV use, a 44% reduction from Alternative A. Of the 318.5 miles of evaluated routes in VRI Class II areas that would be closed to OHV use under this alternative, 33.1 miles would remain designated for authorized or administrative use only, 5.0 miles would be designated for non-motorized use, and 280.5 miles would be decommissioned and earmarked for reclamation. In VRM Class II areas, Alternative B would designate 208.5 miles of evaluated routes for OHV use, a 47% reduction compared to Alternative A. Of the 183.4 miles of evaluated routes in VRM Class II areas that would be closed to OHV use under this alternative, 14.6 miles would remain designated for authorized or administrative use only, 5.0 miles would be designated for non-motorized use, and 163.8 miles would be decommissioned and earmarked for reclamation. The same types of impacts to the TMA's visual resources from OHV use noted above would continue to occur on those routes designated OHV-Open; however, given the number of routes that would be closed to OHV use as well as the number of routes that would be decommissioned and reclaimed, Alternative B's potential for OHV use-related impacts to the TMA's visual resources would be the lowest of any alternative.

Alternative C (Multiple Use Emphasis)

In VRI Class II areas, Alternative C would designate 607.9 miles for OHV use, a 17% reduction from Alternative A. Of the 121.1 miles of evaluated routes in VRI Class II areas that would be closed to OHV use under this alternative, 16.5 miles would remain designated for authorized or administrative use only, 10.1 miles would be designated for non-motorized use, and 94.5 miles would be decommissioned and earmarked for reclamation. In VRM Class II areas, Alternative C would designate 319.4 miles of evaluated routes for OHV use, a 19% reduction compared to

Alternative A. Of the 72.6 miles of evaluated routes in VRM Class II areas that would be closed to OHV use under this alternative, 6.1 miles would remain designated for authorized or administrative use only, 10.1 miles would be designated for non-motorized use, and 56.4 miles would be decommissioned and earmarked for reclamation. The same types of impacts to the TMA's visual resources from OHV use noted above would continue to occur on those routes designated OHV-Open. Overall, given the number of routes that would be decommissioned to OHV use as well as the number of routes that would be closed and reclaimed, Alternative C's potential for OHV use-related impacts to the TMA's visual resources would be lower than Alternative A but higher than Alternative B.

Alternative D (Access Emphasis)

In VRI Class II areas, Alternative D would designate 691.1 miles for OHV use, a 5% reduction from Alternative A. Of the 37.8 miles of evaluated routes in VRI Class II areas that would be closed to OHV use under this alternative, 9.2 miles would remain designated for authorized or administrative use only, 2.0 miles would be designated for non-motorized use, and 26.7 miles would be decommissioned and earmarked for reclamation. In VRM Class II areas, Alternative D would designate 374.4 miles of evaluated routes for OHV use, a 4% reduction compared to Alternative A. Of the 17.6 miles of evaluated routes in VRM Class II areas that would be designated OHV-Closed under this alternative, 2.5 miles would remain designated for authorized or administrative use only, 2.0 miles would be designated for non-motorized use, and 13.1 miles would be decommissioned and earmarked for reclamation. The same types of impacts to the TMA's visual resources from OHV use noted above would continue to occur on those routes designated OHV-Open. Overall, given the number of routes that would be closed to OHV use as well as the number of routes that would be decommissioned and reclaimed, Alternative D's potential for OHV use-related impacts to the TMA's visual resources would be lower than Alternative A but higher than the other action alternatives.

Cumulative Effects

The CIAA for visual resources is the TMA and the lands within its viewshed. This covers the area that could be incrementally impacted by the action Alternatives.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to the visual quality in the CIAA include the following:

- Land- and water-based recreation, including land-based recreation use of roads, trails, campgrounds, and dispersed campsites and water-based use of the Green River for boating activities
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium
- Livestock grazing and related range improvement and facility developments

Accumulating impacts to visual quality in the CIAA include changes in form, line, and color from increased recreation use, development activities and equipment use; dust plumes from use of existing roads; livestock presence and changes in form, line, and color from range

improvements and facility development; and changes in form, line, and color from wildland fires.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would be a continuation of current conditions, and an overall incremental change to visual resources in the CIAA is not anticipated.

None of the action alternatives B-D propose any new construction of routes or other surface-disturbing activities that could degrade the TMA's visual appearance. Each of the network alternatives would reduce OHV-Open designations and provide for reclamation of decommissioned routes. Over time these reclaimed route footprints would blend back in with the surrounding landscape. The action alternatives would also implement new comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to the TMA's physical environment and visual appearance. None of the action alternatives are expected to result in incremental impacts on visual resources when added to other past, present, and reasonably foreseeable actions.

3.2.6 WATER RESOURCES: RIVERS AND STREAMS, RIPARIAN AREAS AND FLOODPLAINS, AND WATER QUALITY

How would the route designation alternatives impact water resources within the TMA?

Affected Environment

Water resources—particularly important in this arid portion of the MFO—are managed to ensure that water quality standards, stream conditions, and floodplain and riparian function are not diminished as a result of BLM actions such as travel route designations (see goals, objectives, and management decisions for riparian and soil and water, pages 99-105 of the 2008 RMP). The surface waters of the TMA consist primarily of 44 miles of the Green River as well as numerous springs, several perennial and intermittent streams, and seasonal vernal/ephemeral pools. The area includes a number of tributaries to the Green River, including Ten Mile Canyon, Spring Canyon, Hell Roaring Canyon, and Mineral Canyon. Perennial streams within the TMA are spring fed with increased flows and recharge occurring in conjunction with spring snowmelt and monsoonal precipitation events. Interrupted flow in both perennial and intermittent stream systems is common, and the dimensions of the wetted area may vary seasonally based upon available precipitation. All stream systems are flashy. The subbasins and watersheds within and adjacent to the TMA typically have a lower snowpack than others in the MFO. Numerous stock ponds in the area provide water to cattle and wildlife.

Riparian areas are a form of wetland transition between permanently saturated wetlands and upland areas. In the arid Southwest, the riparian ecosystems depend on water availability, defined by the amount, timing, duration, and source. Stream systems supporting riparian areas are characterized as perennial (yearlong), intermittent (seasonal), or ephemeral (storm). Riparian areas are defined as areas of land directly influenced by permanent (surface or subsurface) water. They have visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks with perennial water flow are typical riparian areas. They include wetlands and those portions of floodplains and valley bottoms that support riparian vegetation (Meehan 1991). Although prevalent within the TMA, excluded are such sites as ephemeral

streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil (BLM 1991). It is important to note that an ephemeral stream is one that flows only in direct response to precipitation and whose channel is at all times above the water table. In some cases, intermittent or ephemeral streams which do not currently exhibit riparian characteristics may in fact be connected to a water table and could potentially develop riparian attributes with management changes.

Riparian areas comprise less than one percent of the 22 million acres of public lands administered by the BLM in Utah. However, these small but unique areas are among the most important, productive, and diverse ecosystems in the state. Riparian areas—occurring on streambanks and floodplains, at springs, seeps, potholes, wet meadows, sloughs, marshes, swamps, and bogs—are all important resources for aquatic organisms, wildlife, grazing, and recreation. Riparian areas, which constitute 18,106 acres within the TMA, provide many benefits in the area, including filtering and purifying water, reducing sediment loads and enhancing soil stability, contributing to groundwater recharge, dissipating high-energy flows (floods), providing thermal refugia and habitat for obligate species, and supporting greater biodiversity. Healthy and productive riparian areas provide water, food, cover, and travel corridors for many aquatic and terrestrial wildlife species, some of which are obligate to the riparian area and not found in xeric upland areas. Native riparian plants and their root systems contribute to improved water quality and quantity by holding soils in place while filtering sediments, increasing ground water recharge, and protecting streambanks. The value of riparian areas to the general public has been increasing by providing opportunities for a wide variety of recreation activities and aesthetic attributes. However, riparian ecosystems are fragile resources that are among the first indicators of impacts from disturbance.

The 2013 Analysis of the Management Situation for the 2016 Master Leasing Plan states that "Some notable differences in riparian/wetland condition and priorities have occurred in areas with popular OHV use (and associated dispersed camping), reoccurring livestock grazing, and increased use of county access roads" (BLM 2013). The IDT gave specific attention to riparian areas during the route evaluation process by considering riparian resources an important issue in proposing alternative route designations. Surface runoff and transport of saline soils has been linked to increased salinity levels in the Colorado River, of which the Green River is a major tributary. Surface-disturbing activities from travel-related disturbances in or near areas of highly erosive soils or in sensitive areas, such as stream channels and riparian habitats, increase the potential for surface runoff (i.e., soil displacement), vegetation loss, geomorphic change, sediment transport and water quality impacts in streams and riparian areas. In general, travel route proximity to riparian areas or intermittent or perennial drainages is an important factor relating to the condition of aquatic and riparian habitats including impacts to water quality.

The Ten Mile Wash ACEC is one specific example of this concept within the TMA. A proper Functioning Condition (PFC) assessment performed by an IDT in 2012 at Ten Mile Wash concluded that the area from Dripping Springs to Trail Canyon is Functioning at Risk. Specifically, this PFC report on Ten Mile states, "roads are impacting banks" and there is "accelerated bank erosion" and the presence of gullies and active "downcutting" within the roadway. PFC assessments also indicate the presence of "cut banks, unnatural overflow channels" and that "roads influence overflow channels … old roads become overflow channels." The PFC report shows that the banks are not laterally stable because the channel follows the roads resulting in less sinuosity. Therefore, point bars are not forming nor is vegetation

establishing on them. The PFC report summary states that "road impacts have become major since the 1980s" and that the road in Ten Mile Wash may be one of the biggest influences on riparian condition. When developing network alternatives, the IDT considered designations that would reduce impacts to water resources including seasonal or total road closure, or change in road alignment.

Within the TMA, 8 evaluated routes cross perennial streams, 16 evaluated routes cross intermittent streams, and 382 evaluated routes cross ephemeral streams. Of the 79.3 miles of evaluated routes that are in riparian areas, 17.6 miles are subject to routine maintenance.

Environmental Effects Analysis

The following assumptions and methodologies were applied in this analysis of potential effects on water resources from the alternative travel route network designations:

- In addition to routes that directly cross a riparian area or intermittent, perennial, or ephemeral drainage, routes or portions of routes that are located within 100 meters of riparian areas are included in analysis.
- Travel network alternatives that designate more miles as OHV-Closed in and near riparian areas and streams would provide higher levels of protection from surface disturbances and indirectly help reduce and minimize effects to water resources including aquatic habitats, riparian areas, and water quality. Since all routes proposed as OHV-Closed under the action alternatives are minimally maintained, stream crossings are not armored or culverted. Minimally maintained roads in and near riparian areas and streams therefore cause impacts to those resources; a reduction in miles in these areas is beneficial. The route reports (Appendix I) detail those routes that are in or near riparian areas and streams.
- Impacts to water resources would be reduced and minimized by applying BMPs for operation and maintenance of all routes designated for motorized use (see L.3.5 in Appendix L).
- Access to stock ponds/reservoirs would continue for permittees and other authorized users.

Travel routes can serve as a conduit for sediment transport (indirect) into intermittent or perennial drainages and riparian areas during runoff events (Miniat et al. 2019). Surface disturbances from motorized and non-motorized travel can also remove soil-stabilizing agents, such as vegetative cover, soil crusts, and woody debris. Travel routes parallel to or within the active channel can reduce channel sinuosity in low gradient systems, reducing the ability of the channel to meander, one way streams naturally attenuate flood energy. Loss of one or more of these agents increases the potential for erosion and sediment transport into water bodies and riparian areas, elevating turbidity in watersheds. Routes in areas of erosive soils that are proximate to, leading to, or crossing drainages will result in higher amounts of sediment travel and deposition in water bodies and riparian areas during storms and runoff events (Ouren et al. 2007). Indicators are rills and gullies leading to and from travel routes and draining into existing perennial or intermittent streams or riparian areas and declining riparian zone vegetation health, diversity, density, and vigor. Impacts to floodplains primarily consist of loss of vegetation and geomorphic changes to bank angle, bank stability, increasing channel width, decreased sinuosity, increasing width/depth ratios, and in some cases creating artificial flow channels at or near route/stream intersections. Floodplain connectivity may be impaired due to increased erosion and

channel downcutting resulting from accelerated flood velocities linked to loss of vegetation or soil compaction.

TMP implementation activities that could result in compaction or increased sediment or contaminant load include route maintenance (i.e., surface and ditch blading, drainage structure installations, etc.), ripping and seeding of closed routes, and sign placement (digging post holes). These effects are likely to be minor and temporary because they occur infrequently. If implementation is proposed that falls outside of the previously disturbed area, additional site-specific NEPA may be required before the activity could occur. Some of the activities listed above could have a long-term beneficial effect on water resources. For example, sign placement could encourage managed travel on stable designated routes that are less disruptive to waterways; drainage structures installed at appropriate intervals and locations (i.e., with adequate buffer areas at outlets) could help minimize route-related erosion and sediment transport into waterways; and seeding and planting of closed routes could help reestablish native vegetation communities, thereby improving soils' resiliency to water impairment-related erosion.

Indicators of potential OHV route impacts on the TMA's water resources include the number of routes in or crossing streams, and the number of routes in or proximate to (within 100 meters of) riparian areas or springs. Figure 3.18 – Figure 3.21, below, show the number of evaluated routes in each alternative network that are crossing or proximate to TMA streams and riparian areas.

Figure 3.18: Number of Evaluated Routes In or Crossing Perennial Streams

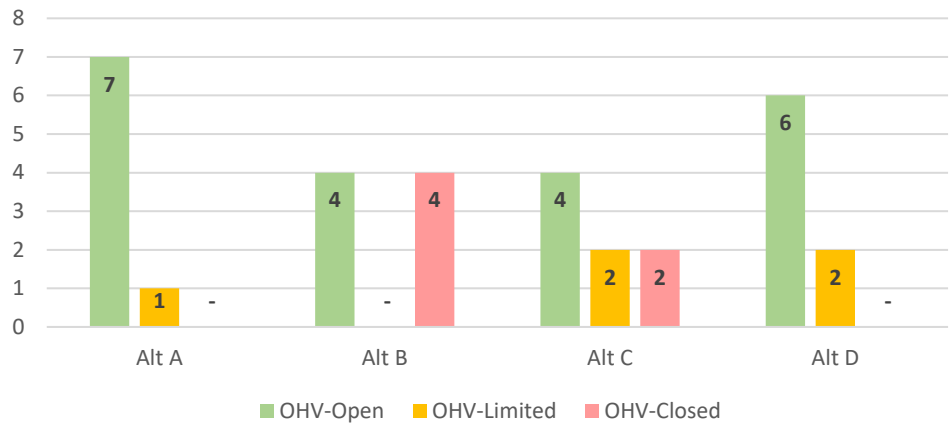


Figure 3.19: Number of Evaluated Routes In or Crossing Intermittent Streams

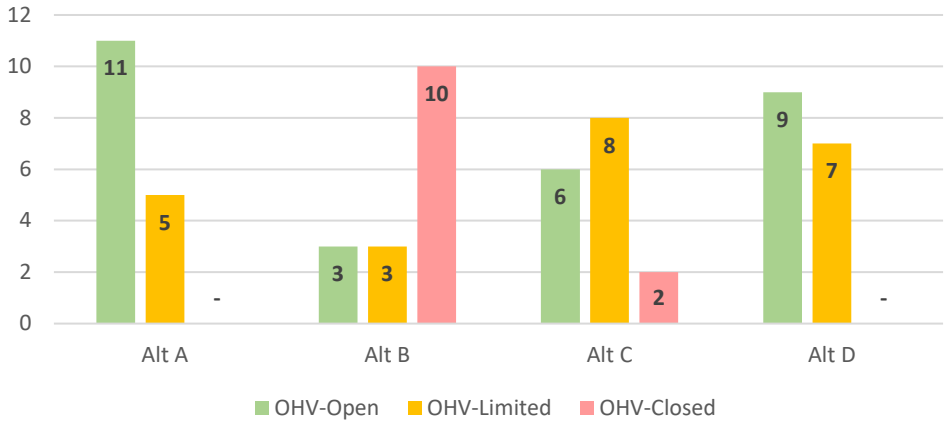


Figure 3.20: Number of Evaluated Routes In or Crossing Ephemeral Streams

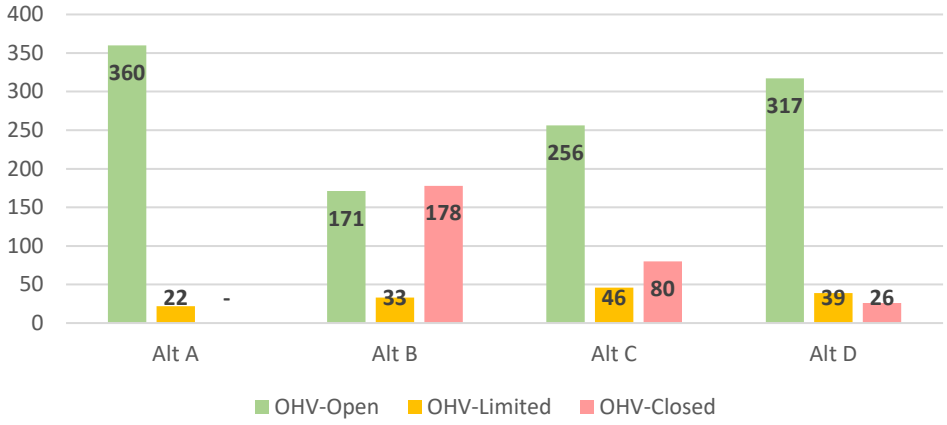
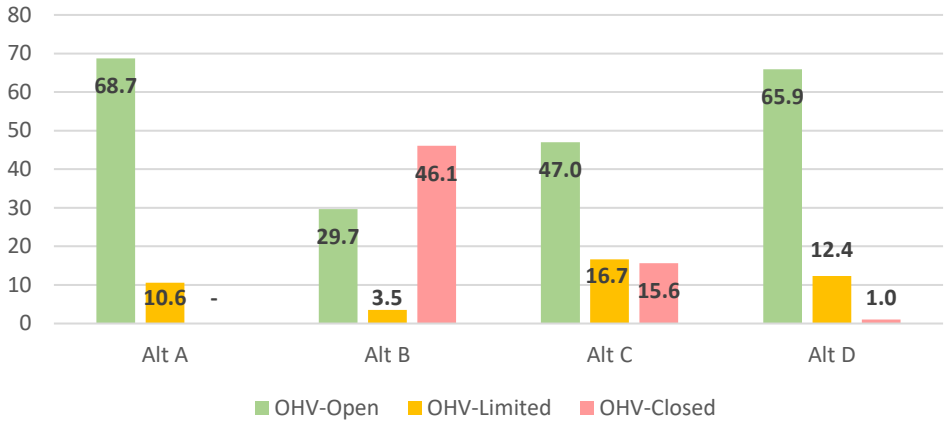


Figure 3.21: Miles of Evaluated Routes In, Crossing, or within 100 Meters of Riparian Areas or Springs



Alternative A (No Action/Current Management)

Within the current designated travel network, 24 evaluated routes cross perennial or intermittent streams and 382 evaluated routes cross ephemeral streams. A total of 79.3 miles of evaluated

routes (7% of the network) are within 100 meters of riparian areas or springs. All of the Alternative A routes associated with streams, riparian areas, and springs would remain designated for OHV use under this alternative. This OHV and associated human use (i.e., camping, exploring, etc.) on routes in or proximate to streams and riparian areas causes erosion, sedimentation, and loss of important streamside and riparian vegetative cover. Subsequent sediment travel and deposition in streams and riparian areas leads to water quality degradation. Impacts to water quality from ongoing OHV use (i.e., erosion, sedimentation and salination, loss of important streamside and riparian vegetative cover, etc.) would reflect continuation of current management.

Alternative B (Natural Resource Emphasis)

Under Alternative B, 10 evaluated routes designated for OHV use would cross perennial or intermittent streams, a 58% reduction compared to Alternative A. Of the evaluated routes crossing ephemeral streams, Alternative B would designate 204 routes for OHV use, a 47% reduction from Alternative A. Of the evaluated routes in or proximate to riparian areas or springs, Alternative B would designate 33.2 miles for OHV use, a 58% reduction from Alternative A. Specifically, Alternative B would emphasize natural resources by closing the Ten Mile route within the Ten Mile ACEC, including the section that is Functioning at Risk, and the Tubes and Dead Cow motorcycle routes, eliminating impacts of OHV use on water resources in these systems. Under Alternative B, the same types of effects on water resources from OHV use noted above would continue to occur on those routes designated OHV-Open or OHV-Limited; however, overall, this alternative would have the lowest potential of any alternative for ongoing OHV-related impacts to water resources within the TMA.

Alternative C (Multiple Use Emphasis)

Under Alternative C, 20 evaluated routes designated for OHV use would cross perennial or intermittent streams, a 17% reduction compared to Alternative A. Of the evaluated routes crossing ephemeral streams, Alternative C would designate 302 routes for OHV use, a 21% reduction from Alternative A. Of the evaluated routes in or proximate to riparian areas or springs, Alternative C would designate 63.7 miles for OHV use, a 20% reduction from Alternative A. Specifically, Alternative C would emphasize multiple use by allowing the Dripping Springs to Midway route within the Ten Mile ACEC, currently Functioning at Risk, to remain open while closing to OHV use the Midway to Green River section, which experiences less OHV use and contains riparian areas that are currently in PFC. The Tubes and Dead Cow motorcycle routes would remain open. Under Alternative C, the same types of effects on water resources from OHV use noted above would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative would have lower potential for ongoing OHV-related impacts to water resources than Alternative A but higher potential than Alternative B.

Alternative D (Access Emphasis)

Under Alternative D, all 24 evaluated routes crossing perennial or intermittent streams would be designated for OHV use, the same as Alternative A. Of the evaluated routes crossing ephemeral streams, Alternative D would designate 356 routes for OHV use, a 7% reduction from Alternative A. Of the evaluated routes in or proximate to riparian areas or springs, Alternative D would designate 78.3 miles for OHV use, a 1% (1.1-mile) reduction from Alternative A. Specifically, Alternative D would emphasize OHV-based access by allowing the Ten Mile,

Tubes, and Dead Cow routes to remain open. Under Alternative D, the same types of effects on water resources from OHV use noted above would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative would have similar potential for ongoing OHV-related impacts to water resources as Alternative A but higher potential for such effects compared to the other action alternatives.

Cumulative Effects

The CIAA for rivers and streams, riparian areas, and floodplains includes the entire MFO area. Riparian areas within the MFO are incredibly diverse and important habitats comprising 1-2% of the landscape. Due to their rarity, impacts to any riparian areas should be analyzed in relation to the entire "population" of such habitats.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to water quality, riparian areas, and wetlands cumulative effects in the CIAA include the following:

- Land- and water-based recreation, including land-based recreation use of roads, trails, campgrounds, and dispersed campsites and water-based use of the Green River for boating activities
- Livestock grazing and related range improvement and facility developments; livestock water infrastructure development to facilitate better grazing management on soils and vegetation
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium

Accumulating impacts to water quality, riparian areas, and wetlands in the CIAA include sedimentation and contamination from loss of vegetation; exposed soils and soil disturbance and displacement resulting from development and use activities; compaction on existing roads during use; trampling of soils and riparian vegetation from livestock grazing and off-route recreation uses such as camping and exploring; and loss of vegetation and soil nutrients resulting from wildland fires. Some soil instability, erosion, and sediment travel into waterways can occur from road prisms in areas with steep slopes or high erosion potential in combination with natural snowmelt and runoff events.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would reflect a continuation of current conditions, and an overall incremental change to water quality, wetlands, and riparian areas within the CIAA is not anticipated.

None of the action alternatives B-D propose any new construction of routes, and each of these alternatives would reduce routes designated for OHV use and provide for reclamation of decommissioned routes. The action alternatives would also implement a comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to the TMA's water resources. None of the action alternatives are expected to result in incremental impacts on water resources when added to other past, present, and reasonably foreseeable actions.

3.2.7 WILDLIFE: FISH (T&E AND BLM SENSITIVE SPECIES)

How would the route designation alternatives impact Threatened and Endangered and BLM Sensitive fish species and habitat within the TMA?

Affected Environment

The fish-bearing waters of the TMA consist primarily of 44 miles of the Green River, known as Labyrinth Canyon, as well as seasonally inundated side channels, backwaters, and confluence habitats associated with tributaries to the Green River, including Ten Mile Canyon, Spring Canyon, Hell Roaring Canyon, and Mineral Canyon. Critical habitat for federally listed fish species and important habitat for BLM Sensitive fish species extends from the wetted channel to the elevation of the 100-year floodplain. These special status species fish have declined due to streamflow regulation, competition with and predation by nonnative fish species, and habitat modification resulting in habitat loss, degradation, and fragmentation caused by watershed changes, including increased sedimentation and negative water quality changes (e.g., pollutants and pesticides). More information on the habitat requirements of these Endangered and BLM Sensitive fish species can be found below.

In terms of fisheries, the Green River is important in comparison with other rivers in the Colorado River Basin region because of the uniqueness of fish species and connectivity within the river system. The Green River is also recognized on a national level due to the high level of fish migration through its river system and is often referred to as the "superhighway for fish." This river is considered regionally important for the recovery of the four federally listed species.

The Labyrinth Canyon segment, sometimes called the "nursery" reach, provides key connectivity, migration, nursery, and/or spawning areas for an intact native fish species assemblage consisting of four federally listed species, the Colorado pikeminnow, humpback chub, razorback sucker, and bonytail chub; three conservation agreement species, the roundtail chub, bluehead sucker, and flannelmouth sucker; and two other native species, the mottled sculpin and speckled dace. These fish species have overlapping needs and occupy different habitat in different stretches along the river as they migrate through the river system.

Labyrinth Canyon contains critical habitat, as designated by U.S. Fish and Wildlife Service, for the Colorado pikeminnow and the razorback sucker. This segment is unique in that its gravel bars provide important spawning habitat while the lower-gradient meandering character provides critical slackwater nursery habitats (e.g., backwaters, side channels, etc.) for larval and young-of-year Colorado pikeminnow and razorback sucker. The following information, extracted from Utah Division of Wildlife Resources (UDWR) reports, highlights the relative importance of the Labyrinth segment of the Green River. In 2020, 125 young-of-year Colorado pikeminnow were encountered on the lower Green River (Labyrinth/Stillwater), and none on the middle Green River (Split Mountain to Sand Wash). Over the 2000-2013 sample period, weighted regression indicated abundance of adult Colorado pikeminnow declined in the Green River Subbasin but in the Desolation-Gray Canyon and lower Green River reaches numbers were stable. The total number of razorback sucker larvae captured annually by light trapping has increased significantly on the lower Green River (Labyrinth/Stillwater) since sampling began in 2009, with the exception of 2020, when sampling was suspended due to COVID-19. Additionally, one young-of-year razorback was collected from the lower Green River in 2020 during seine

sampling while none were encountered in other locations. (Bestgen, et al. 2018; UDWR 2018, 2020a, UDWR 2020b)

Bluehead sucker (*Catostomus discobolus*) – BLM Sensitive

Bluehead suckers are widespread in rocky riffle habitats of small to large rivers in the Upper Colorado River Basin. They now occupy about 50% of their historical range in the Upper Colorado River Basin (UDWR 2006).

Bonytail chub (*Gila elegans*) – Endangered

The bonytail chub was listed as endangered on April 23, 1980. It is a medium-sized fish species in the minnow family that is endemic to the large rivers of the Colorado River Basin. The species is adapted to mainstem rivers, where it has been observed in pools and eddies (USFWS 2008). Primary threats include stream flow regulation and habitat modification, competition with and predation from nonnative fishes, hybridization with other native *Gila* species, and pesticides and pollutants (USFWS 2002a). Historically widespread and abundant in mainstem rivers, its populations have been greatly reduced; currently, remnant populations occur in the wild in low numbers (USFWS 2008). For more details on habitat, threats, and trends, see page viii of Bonytail (*Gila elegans*) Recovery Goals: Amendment and Supplement to the Bonytail Chub Recovery Plan (USFWS 2002a).

Colorado pikeminnow (*Ptychocheilus lucius*) – Endangered

The Colorado pikeminnow was federally listed as an endangered species in 1967 before being fully protected by the ESA on January 4, 1974. It is the largest fish in the minnow family, is native to North America, and evolved as the main predator in the Colorado River system. The species is a long-distance migrator that requires long sections of river with unimpeded passage as well as pools, deep runs, and eddy habitats with high spring flows. Primary threats include stream flow regulation and habitat modification, competition with and predation from nonnative fishes, and pesticides and pollutants (USFWS 2002b). Historically found throughout warm-water reaches of the Colorado River Basin, the species is currently restricted to the Upper Colorado River Basin and inhabits warm-water reaches of the Colorado, Green, and San Juan River and associated tributaries (USFWS 2008). For more details on habitat, threats, and trends, see page viii of Colorado Pikeminnow (*Ptychocheilus lucius*) Recovery Goals: Amendment and Supplement to the Colorado River Squawfish Recovery Plan (USFWS 2002b) and page 20 of Colorado Pikeminnow (*Ptychocheilus lucius*) 5-Year Review: Summary and Evaluation (USFWS 2011).

Flannelmouth sucker (*Catostomus latipinnis*) – BLM Sensitive

The flannelmouth sucker is typically found in mainstem and tributary streams. Young flannelmouth are found in quiet, shallow riffles and near-shore eddies while adults use deeper riffles and runs. The species now occupies about 50% of its historical range in the Upper Colorado River Basin (UDWR 2006).

Humpback chub (*Gila cypha*) – Endangered

The Humpback chub was listed as endangered on March 11, 1967 before being fully protected by the ESA on January 4, 1974. It is a medium-sized fish in the minnow family that is endemic

to the Colorado River Basin. Humpback chub migrate very little and seem to prefer canyon reaches. In Utah, humpback chub occur in a few whitewater areas of the Green River. Primary threats include stream flow and habitat modification, competition with and predation by nonnative fishes, parasitism, hybridization with other native *Gila* species, and pesticides and pollutants (USFWS 2008). Historically, humpback chub were distributed throughout much of the Green River and tributaries; present concentrations in the Upper Colorado River Basin occur in canyon-bound river reaches. For more details on habitat, threats, and trends, see pages 3 to 11 of Humpback Chub (*Gila cypha*) 5-Year Review: Summary and Evaluation (USFWS 2018a).

Razorback sucker (*Xyrauchen texanus*) – Endangered

The razorback sucker was designated as endangered on October 23, 1991. It is endemic to warm-water portions of the Colorado River system. It is found most commonly in low-velocity habitats such as backwaters, floodplains, flatwater river reaches, and reservoirs (USFWS 2018b). Threats include stream flow regulation and habitat modification, competition with and predation by nonnative fishes, and pesticides and pollutants. Historically, razorback suckers were found in the mainstem Colorado River and major tributaries in Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming, and Mexico and were once so abundant they were used as food by early settlers and were commercially marketable in the mid-1900s. Currently, the largest concentration is found in Lake Mohave; the largest populations in the upper basin are found in the upper Green and lower Yampa rivers. In the Upper Colorado River Basin, they are found in limited numbers in both lentic and riverine environments. As of July 7, 2021, the USFWS has proposed to downlist the razorback sucker from an Endangered species to a Threatened species, as the species' status "has improved due to conservation actions and partnerships, and the threats to the razorback sucker identified at the time of listing in 1991 have been eliminated or reduced to the point that the species is no longer currently in danger of extinction throughout all or a significant portion of its range, but it is still likely to become so within the foreseeable future without current active and intensive management" (86 FR 35708 35728). For more details on habitat, threats, and trends see the Species Status Assessment for the Razorback Sucker *Xyrauchen texanus* (USFWS 2018b).

Roundtail chub (*Gila robusta*) – BLM Sensitive

Habitat consists of rocky runs, rapids, and pools of creeks, streams, and rivers. They now occupy about 45% of their historical range in the Upper Colorado River Basin (UDWR 2006).

Environmental Effects Analysis

During the route evaluation process, the IDT considered special status fish habitat in addressing designation criterion 8342.1 (b): "Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats." This attention to special status fish habitat as a potential resource conflict is noted in the Route Reports and informed the IDT's formulation of alternative route networks. The action alternatives include measures to minimize impacts to endangered or threatened species and their habitats, such as proposing routes for closure or seasonal limitations under some alternatives.

Use of travel routes in this TMA can potentially have effects on special status fish species that include physical or chemical habitat modification or direct mortality from vehicle strikes at

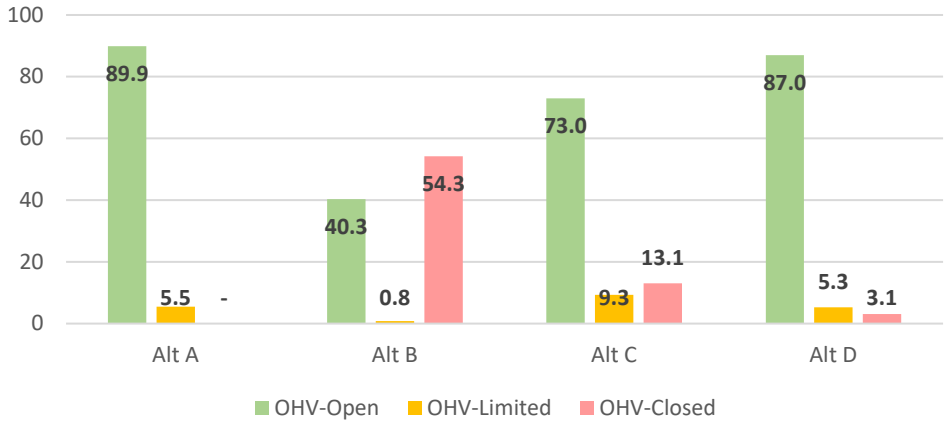
crossings. OHV use and maintenance activities can increase erosion, sedimentation, salinity, and contaminant delivery into critical habitat for ESA-listed fish. Erosion often increases at stream crossings and from OHV use directly within stream channels or upon stream banks. However, upland travel routes can also be a source and a conduit for OHV-related contaminants and sediment directly from the road surface or from uplands draining onto the road, increasing sediment delivery to stream crossings. OHV use during wet periods can result in surface rutting or head-cutting, particularly in washes or streams, which can concentrate and accelerate water flow, erosion, and sediment transport, thereby reducing water quality. Such erosion and head-cutting can lead to channel incision and subsequent lowering of the water table, ultimately causing streams to lose access to their floodplains, resulting in a loss of riparian habitat. Mortality of riparian vegetation and compaction of riparian and wetland soils from OHV travel and maintenance activities can cause reduced infiltration, breakdown of vegetation capillary action, drying up or dusting of wetlands and riparian areas, bank instability, and increased erosion. Travel routes traversing through saline soils may also contribute to increased downstream salinity.

In terms of fish habitat within the TMA, the physical size of tributary confluence habitats can be reduced through increased deposition, and aggradation within critical side-channel and backwater habitat can lead to the degradation or eventual loss of slackwater nursery habitats. Colonization of newly deposited sediment by invasive woody species (e.g., tamarisk, Russian olive) can further imperil these important habitats. In some cases, important gravel and cobble substrates may be buried in finer sediments. Delivery of OHV-related contaminants or increased salinity is likely to degrade water quality. Designations that limit, decommission, or reclaim closed routes on or near waterways, floodplains, riparian areas, and wetlands can reduce or stop the perpetuation of the effects described above by reducing or eliminating OHV use, or limiting the size of the OHV.

TMP implementation activities that can affect special status fish species include route maintenance (i.e., surface and ditch blading, drainage structure installations, etc.), ripping and seedbed preparation of closed routes, and sign installations (digging post holes). These effects are likely to be minor and temporary because they occur infrequently. Some of the activities listed above and other implementation activities can have a positive effect on water resources. For example, sign placement can encourage managed travel on stable designated routes less disruptive to waterways; drainage structures installed at appropriate intervals and locations (i.e., with adequate spacing for road grades, soil types, and buffer areas at outlets) can help minimize route-related erosion and sediment transport into waterways; and seeding and planting of closed routes can help reestablish native vegetation communities, thereby improving the soils' resiliency to water impairment-related erosion.

Effects are analyzed collectively for the special status fish species in the TMA, as the habitat for each species is the same: the portions of the Green River along the TMA's western boundary as well as active channels and adjacent floodplains of perennial or seasonally inundated tributary reaches and confluences connected to the Green River. The miles of evaluated routes within the Conditional Area of Influence (AOI) were used as an indicator of impacts to special status fish. The Conditional AOI includes the 100-year floodplain (the AOI) and ½-mile buffer of the portions of the Green River along the TMA's western boundary, as indicated in the USFWS Information for Planning and Consultation data (USFWS 2021).

Figure 3.22: Miles of Evaluated Routes in Conditional AOI for Special Status Fish Species



Alternative A (No Action/Current Management)

Under Alternative A, there would be no route designation changes in the TMA. The current designated travel network has 95.4 miles of evaluated routes within the Conditional AOI for special status fish species in the TMA. The effects described above from the evaluated routes and related use and maintenance would continue to occur on those routes designated OHV-Open. Impacts to the TMA's fish species (i.e., degradation of water quality and fish habitat due to erosion; sedimentation; increased salinity; and loss of important streamside and riparian vegetative cover) from the routes and ongoing related use would reflect a continuation of current management.

Alternative B (Natural Resource Emphasis)

Within the Conditional AOI for special status fish in the TMA, Alternative B would designate 41.1 miles of evaluated routes for OHV use, a 57% reduction from Alternative A. The effects described above from the evaluated routes and related use and maintenance would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, Alternative B would have the lowest potential of any alternative for OHV use-related impacts to fish and fish habitat within the TMA.

Alternative C (Multiple Use Emphasis)

Within the Conditional AOI for special status fish in the TMA, Alternative C would designate 82.3 miles of evaluated routes for OHV use, a 14% reduction from Alternative A. The effects described above from the evaluated routes and related use and maintenance would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, Alternative C would have lower potential than Alternative A but higher potential than Alternative B for OHV use-related impacts to fish and fish habitat within the TMA.

Alternative D (Access Emphasis)

Within the Conditional AOI for special status fish in the TMA, Alternative D would designate 92.3 miles of evaluated routes for OHV use, a 3% reduction from Alternative A. The effects described above from the evaluated routes and related use and maintenance would continue to

occur on those routes designated OHV-Open or OHV-Limited. Overall, Alternative D would have lower potential than Alternative A but higher potential than the other action alternatives for OHV use-related impacts to fish and fish habitat within the TMA.

Cumulative Effects

The CIAA for special status fish species is a ½-mile IPaC buffer that intersects the TMA. This represents the likely inputs of salinity or sediment delivery related to the proposed Alternatives.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to special status fish species in the CIAA include the following:

- Amendments to the Recovery Plans for bonytail chub, Colorado pikeminnow, and razorback sucker
- Range-wide Conservation Agreement and Strategy for Roundtail Chub (*Gila Robusta*), Bluehead Sucker (*Catostomus Discobolus*), and Flannelmouth Sucker (*Catostomus Latipi*)
- Land-based recreation, including use of roads, trails, campgrounds, and dispersed campsites; water-based use of the Green River and its corridor for boating activities and camping
- Livestock grazing and related range improvement and facility developments; livestock water infrastructure development to facilitate better grazing management on soils and vegetation
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium

Accumulating impacts to special status fish species in the CIAA include sedimentation and contamination from loss of vegetation, exposed soils and soil disturbance and displacement resulting from development and use activities, compaction on existing roads during use, trampling of riparian vegetation and soils from livestock grazing and off-route recreation uses such as camping and exploring; and from loss of vegetation and soil nutrients resulting from wildland fires. Some soil instability, erosion, and sediment travel into fish habitat can occur on routes in areas with steep slopes or high erosion potential in combination with natural snowmelt and runoff events.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would reflect a continuation of current conditions, and an overall incremental change to special status species within the CIAA is not anticipated.

None of the action alternatives B-D propose any new construction of routes, and each of these alternatives would reduce miles of routes designated for OHV use and provide for reclamation of decommissioned routes. The action alternatives would also implement comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to the TMA's fish and special status fish species. None of the action alternatives are expected to result in incremental impacts on the

TMA's special status fish species and their habitats when added to other past, present, and reasonably foreseeable actions.

3.2.8 WILDLIFE: GENERAL WILDLIFE

How would the route designation alternatives impact general wildlife species and habitat within the TMA?

Affected Environment

The TMA supports various big game and other general wildlife habitat and species. Due to its varied terrain, the presence of the Green River, and a wide range in elevation, wildlife resources in the Labyrinth/Gemini Bridges TMA are quite rich. Large game and predator mammals include desert bighorn sheep, pronghorn, mule deer, mountain lion, black bear, coyote, and fox. The desert bighorn herd is endemic to the area having been present prior to European settlement. Some of the bird species found in the TMA include turkey vulture, red-tailed hawk, golden eagle, bald eagle, great-horned owl, burrowing owl, cliff swallow, pinyon jay, common raven, canyon wren, mountain bluebird, and American dipper. Reptiles found in the area include several types of lizard and snake, including the collared lizard, gopher snake, night snake, and Western rattlesnake.

Not all TMA wildlife, wildlife habitat, and potential effects on these resources from the alternative travel networks are discussed below; rather, analysis focuses on those that are necessary for making a reasoned choice between alternatives and were identified as issues in scoping. This includes potential impacts to desert bighorn sheep, pronghorn antelope, and amphibians.

Table 3.6: Acres of General Wildlife Habitat and Miles of Evaluated Routes in Habitat

Species	Habitat Acres on BLM Lands within TMA	Miles of Evaluated Routes within Habitat
Desert bighorn	93,098	294.2
Pronghorn	111,742	394.6
Amphibians	18,106	79.3

Desert bighorn sheep (*Ovis canadensis nelsoni*)

Desert bighorn sheep inhabit remote and rugged terrain—slickrock canyons, rocky slopes, and canyonlands—and are one of the resources managed in the Highway 279/Shafer Basin/Long Canyon ACEC. Bighorns are native to Utah and were well known to the prehistoric inhabitants of the state; they inhabited nearly every mountain range in the state prior to European settlement. The habitat types preferred by bighorn are areas with steep, rough terrain with good visibility (talus slopes and canyons) and flatter valley floors, which have rough terrain or escape cover nearby (BLM 2008b). Bighorn sheep are gregarious; in the Moab area, ewes, lambs, and young rams form small family groups of 8-10 animals while rams tend to form separate bachelor groups and only come in contact with the family groups during the rut. Desert bighorn have struggled to survive human impacts. Today, they generally occur in southern Utah and in the MFO do not migrate, but rather remain in the same canyon systems year-round. The MFO in cooperation with the UDWR, Foundation for North American Wild Sheep, Brigham Young University,

Canyonlands Natural History Association, and the National Fish and Wildlife Foundation have done extensive GPS collar studies from 2002 through 2010 and currently Joel Berger with Colorado State University is conducting additional research via collars the UDWR placed on animals in 2019. This large pool of collar data has allowed the Moab BLM to further refine the crucial habitats that support this herd. These animals are mostly found in the large canyon systems, making canyon bottoms, talus slopes, and canyon rims vital habitats for this herd. The UDWR has incorporated this data into their statewide habitat files as lambing habitat, though these areas are utilized yearlong. The TMA is part of UDWR's La Sal/Potash management unit; the bighorn in this unit is under its population objective (UDWR 2019).

Pronghorn antelope (*Antilocapra americana*)

Pronghorn historically ranged widely west of the Mississippi. The late 1800s saw drastic declines in population due to fencing, habitat loss, and unregulated hunting, but populations have since recovered; recent estimates place the North American population around 800,000, including nearly 16,000 in Utah. Pronghorn primarily inhabit grasslands and shrub steppe biomes with succulent forb vegetation and available water (UDWR 2017). Pronghorn prefer areas with large tracts of flat to rolling open terrain where they rely on keen eyesight and swift movement to avoid predators (BLM 2013). The northern half of the TMA contains yearlong crucial pronghorn habitat.

Amphibians

Amphibians common in the TMA include Great Basin spadefoot (*Spea intermontana*), red-spotted toad (*Anaxyrus punctatus*), Woodhouse's toad (*Anaxyrus woodhousii*), tiger salamander (*Ambystoma tigrinum,*), northern leopard frog (*Lithobates pipiens*), and canyon tree frog (*Hyla arenicolor*). A UDWR amphibian report states that "of all locations surveyed to date, Kane Creek and Ten Mile Canyon appear to hold the most diverse and thriving amphibian populations" (UDWR 2016).

Environmental Effects Analysis

Motorized visitation to the TMA varies by season (with March, April, May, September, and October being the most popular months). These high-visitation months often coincide with the most crucial seasons for wildlife (especially the spring seasons). This means that the effects of travel on wildlife can be exacerbated because of the timing of that visitation.

The nature and type of impacts on big game and general wildlife and their habitats from travel route designations and route-related uses include habitat avoidance and abandonment, interference of daily movement, increased physical stress that can result in decreased health and parturition, and increased vehicle collisions resulting in injury or mortality (Ouren et al. 2007, Ortega 2012). Studies suggest noise from OHV use is a factor in wildlife disturbance (Naidoo and Burton 2020). Recreational disturbance from motorized and non-motorized activities affects big game behavior by increasing travel time and decreasing feeding and resting time (Naylor et al. 2009). Avoidance of human disturbance can also cause indirect habitat loss and impair forage availability (Dwinnell et al. 2019); species avoidance is strongest for mountain biking and motorized vehicles (Naidoo and Burton 2020). These impacts can escalate seasonally during sensitive birthing, rearing, and breeding seasons and during extreme weather regimes such as

drought, extreme heat or cold, or heavy snowfall. Habitat loss and fragmentation are direct impacts of OHV route designations and OHV use. OHV use can contribute to:

- Increased soil erosion and direct loss of vegetative habitat
- Invasive plants and noxious weed establishment in disturbed areas which in turn increases the potential and frequency for wildland fire
- Surface disturbances that promote growth and spread of invasive plants and noxious weeds into native vegetative communities, reducing habitat quality, foraging availability, and thermal cover
- Increased dusting of crucial native vegetative habitat resulting in plant mortality, and subsequent reduction of habitat quality, foraging availability, and thermal cover

The potential for direct and indirect impacts on big game and general wildlife habitats from OHV use can be estimated by comparing miles of routes and/or percentage of a given travel network designated as OHV-Open, OHV-Limited, and OHV-Closed in areas of wildlife habitats. Conversely, travel routes can also provide beneficial access for resource management activities such as vegetation monitoring, wildlife monitoring, hunting and legal game retrieval, invasive species treatment, and wildland fire suppression. Hunting and game retrieval access serves to support UDWR management efforts where hunting is used as a management tool to control populations of big game species.

For potential OHV-related impacts to amphibians, see Section 3.2.6, which describes effects from OHV use in riparian areas.

TMP implementation activities that could affect general wildlife and their habitats include preparation of new maps and brochures that would benefit wildlife and wildlife habitat by helping to direct and keep users on designated routes; installation of new signs; route maintenance (grading, installing water control structures, surfacing, etc.); route decommissioning or reclamation (including ripping the ground and planting seed, grading/recontouring); or installation of fencing or barriers. If implementation is proposed that falls outside of the previously disturbed area, additional site-specific NEPA may be required before the activity could occur. Seeding and planting on closed routes could accelerate reclamation and help to reestablish habitat. Implementation activities in riparian areas are of particular concern for general wildlife and migratory birds, though some implementation activities would have a positive effect on riparian habitats; for example, sign placement could encourage managed travel on routes less disruptive to riparian resources.

The wildlife analysis below focuses on desert bighorn sheep, pronghorn antelope, and amphibians, but identified impacts will have similar effects on other wildlife species and habitat in the TMA. Analysis for bighorn will focus on travel-related effects on lambing habitats identified by the UDWR, as bighorn are particularly sensitive to disturbance during the lambing season but typically reside in these lambing habitats year-round. Analysis for amphibians will focus on riparian areas, which are used as a proxy for amphibian habitat.

Figure 3.23: Miles of Evaluated Routes in Desert Bighorn Lambing Areas

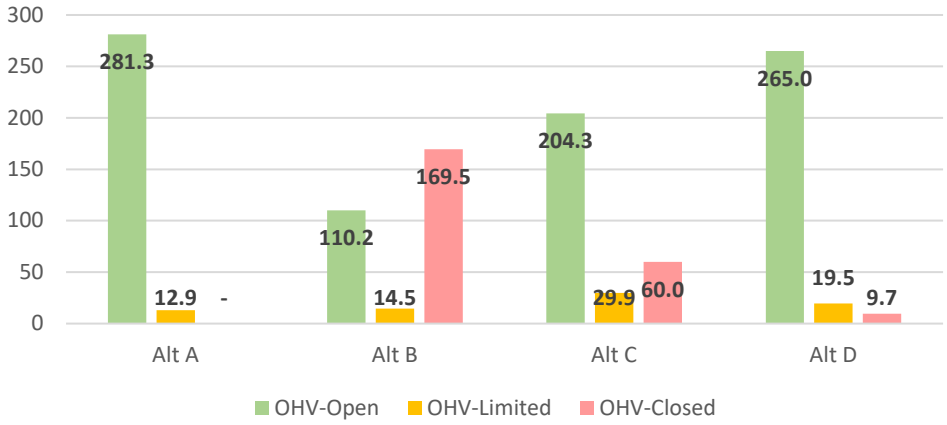


Figure 3.24: Miles of Evaluated Routes in Pronghorn Antelope Habitat

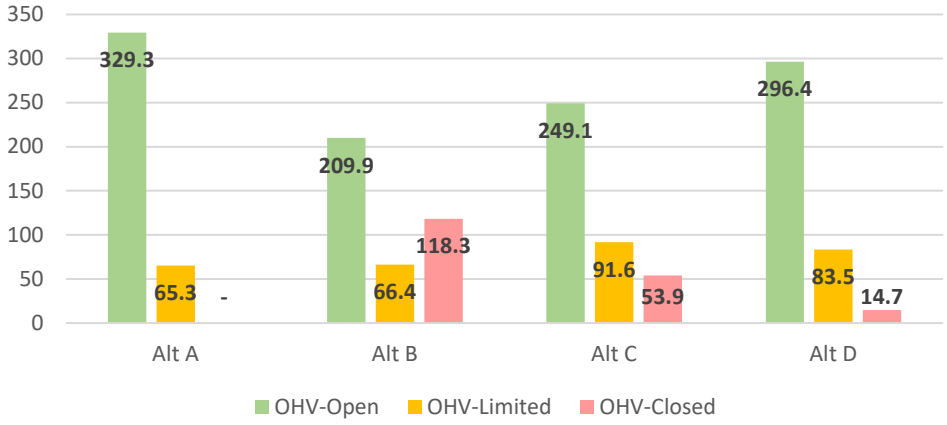
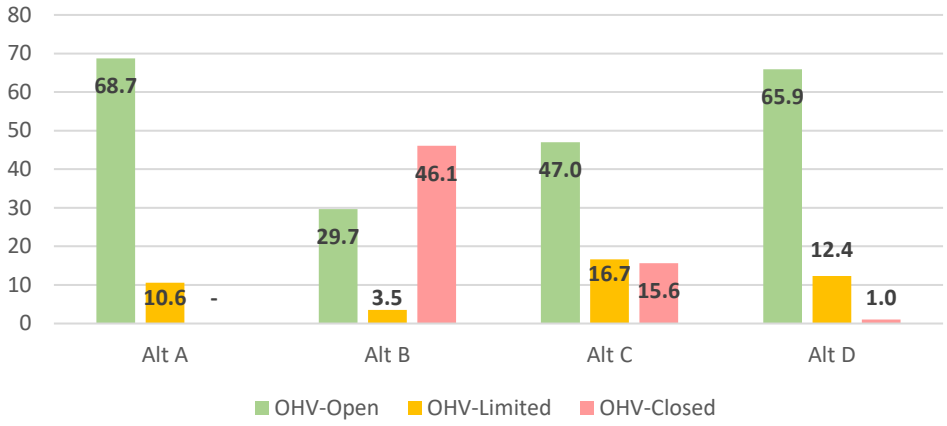


Figure 3.25: Miles of Evaluated Routes in Amphibian Habitat



Alternative A (No Action/Current Management)

Under Alternative A, there would be no route designation changes in the TMA. The current designated travel route network has 294.2 miles of evaluated routes within desert bighorn crucial

lambing areas, all of which would remain designated for OHV use year-round. Within pronghorn yearlong crucial habitat, the current travel network has 394.6 miles of evaluated routes, all of which would remain designated for OHV use. And within amphibian habitat, the current travel network has 79.3 miles of evaluated routes, all of which would remain designated for OHV use under this alternative. Impacts to habitat from ongoing OHV use (i.e., direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.) would reflect a continuation of current management.

Alternative B (Natural Resource Emphasis)

In desert bighorn crucial lambing areas, Alternative B would designate 124.7 miles of evaluated routes for OHV use. This would be a 58% reduction in miles designated for OHV use compared to Alternative A; under this alternative, routes with known resource conflicts for desert bighorn lambing were proposed as closed rather than as seasonally limited. Within pronghorn yearlong crucial habitat, Alternative B would designate 276.3 miles of evaluated routes for OHV use, a 30% reduction from Alternative A. In amphibian habitat, Alternative B would designate 33.2 miles for OHV use, a 58% reduction from Alternative A; specifically, Alternative B would close the Ten Mile route within the Ten Mile ACEC and the Tubes and Dead Cow motorcycle routes, eliminating impacts of OHV use on riparian areas in these systems. Effects noted above to general wildlife and habitat would continue to occur from those routes designated OHV-Open or OHV-Limited. Overall, Alternative B would have the lowest potential of any alternative for OHV-related impacts to general wildlife.

Alternative C (Multiple Use Emphasis)

In desert bighorn crucial lambing areas, Alternative C would designate 234.2 miles of evaluated routes for OHV use. This would be a 20% reduction in miles designated for OHV use compared to Alternative A; additionally, of the routes designated for OHV use, Alternative C would designate 9.6 miles of evaluated routes within desert bighorn crucial lambing areas as OHV-Limited with a seasonal restriction to help protect wildlife such as bighorn sheep, migratory birds, and raptors during lambing and nesting seasons. Within pronghorn yearlong crucial habitat, Alternative C would designate 340.7 miles for OHV use, a 13% reduction compared to Alternative A. Within amphibian habitat, Alternative C would designate 63.7 miles of evaluated routes for OHV use, a 20% reduction from Alternative A; specifically, Alternative C would allow the Dripping Springs to Midway route within the Ten Mile ACEC to remain open while closing the less-used Midway to Green River section, and the Tubes and Dead Cow motorcycle routes would remain open as well. Effects noted above on general wildlife and habitat would continue to occur from those routes designated OHV-Open or OHV-Limited; routes limited seasonally would help protect bighorn sheep, migratory birds, and raptors from OHV-related disturbances during lambing and nesting seasons. Overall, Alternative C's potential for OHV-related impacts to general wildlife would be lower than Alternative A but higher than Alternative B.

Alternative D (Access Emphasis)

In desert bighorn crucial lambing areas, Alternative D would designate 284.5 miles of evaluated routes for OHV use; this would be a 3% reduction in miles designated for OHV use compared to Alternative A. Of the routes designated for OHV use in desert bighorn crucial lambing areas, Alternative D would designate 2.4 miles as OHV-Limited with a seasonal restriction to help

protect wildlife such as bighorn sheep, migratory birds, and raptors during lambing and nesting seasons. Within pronghorn yearlong crucial habitat, Alternative D would designate 379.9 miles for OHV use, a 4% reduction compared to Alternative A. In amphibian habitat, Alternative D would designate 78.3 miles for OHV use, a 1% (1.1-mile) reduction from Alternative A. Effects noted above on general wildlife and habitat would continue to occur from those routes designated OHV-Open or OHV-Limited; routes limited seasonally would help protect bighorn sheep, migratory birds, and raptors during lambing and nesting seasons. Overall, Alternative D's potential for OHV-related impacts to general wildlife would be lower than Alternative A but higher than the other action alternatives.

Cumulative Effects

Note: For cumulative effects analysis related to amphibian species, see Section 3.2.6.

The CIAA for bighorn and pronghorn includes habitats south of I-70, north of the Colorado River, east of the Green River, and west of the Dolores River/Colorado River confluence. I-70 and the rivers are reasonable travel corridor impediments for most terrestrial animals.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to general wildlife in the CIAA include the following:

- Utah Pronghorn Statewide Management Plan
- Utah Bighorn Sheep Statewide Management Plan
- Bighorn Sheep Unit Management Plan: La Sal, Potash/South Cisco WMU #13
- Land-based recreation, including use of roads, trails, campgrounds, and dispersed campsites; water-based use of the Green River and its corridor for boating activities and camping
- Livestock grazing and related range improvement and facility developments; livestock water infrastructure development to facilitate better grazing management on soils and vegetation
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium
- Noxious weed and invasive species proliferation and treatment

Accumulating impacts to general wildlife in the CIAA include vegetation alteration and habitat fragmentation from increased human activity and noise from recreation use and development and equipment use; human activity and noise on existing roads during use; collisions with vehicles; livestock trampling and browsing of vegetation; drought; and removal of vegetation from wildfires.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would be a continuation of current conditions, and overall incremental impacts to general wildlife and their habitats within the CIAA is not anticipated.

None of the action alternatives B-D propose any new construction of routes, and each of the alternatives would reduce routes designated for OHV use and provide for reclamation of

decommissioned routes. The action alternatives would also implement comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to the TMA's general wildlife species. None of the action alternatives are expected to result in incremental impacts on the TMA's general wildlife species and their habitats.

3.2.9 WILDLIFE: MIGRATORY BIRDS, INCLUDING RAPTORS

How would the route designation alternatives impact migratory birds and their habitat within the TMA?

Affected Environment

Migratory birds, including nesting raptors, use the TMA for foraging, roosting, and nesting. Many migratory birds depend on riparian areas (for more on riparian resources, see Section 3.2.6), so the riparian vegetation found along the Green River corridor and in the canyon bottoms within the TMA are particularly valuable, both during migration and for nesting. Nesting habitat for migratory birds includes tree limbs, ground sites, and rock outcrops. Raptors are widely accepted to be indicator species of environmental health because of their position at the top of food chains. Romin and Muck state that "Each raptor nest, its offspring, and supporting habitats are considered important to the long-term viability of raptor populations and are vulnerable to disturbance by many human activities" (2002). Raptors tend to nest on promontory points such as cliff faces and rock outcrops, but they may also nest in pinyon, juniper, or deciduous trees (BLM 2013).

Raptors within the TMA include burrowing owl, buteos, Cooper's hawk, ferruginous hawk, golden eagle, great horned owl, Mexican spotted owl, peregrine falcon, prairie falcon, raven, and red-tailed hawk. Mexican spotted owl is addressed in more detail in Section 3.2.10. See Appendix F for a list of migratory birds of particular concern in the TMA. Additional information can be found in Appendix R of the 2008 RMP and pages 3-187 to 3-188 of the 2008 Proposed RMP/EIS.

Environmental Effects Analysis

Motorized visitation to the TMA varies by season (with March, April, May, September, and October being the most popular months). These high-visitation months often coincide with the most crucial seasons for birds (especially the spring seasons). This means that the effects of travel on migratory birds can be exacerbated because of the timing of that visitation.

The nature and type of impacts on migratory birds and their habitat suitability from travel route designations and route-related uses include disturbance, mortality or injury from collision, and trampling or damage of brooding, nesting, foraging, and cover habitat. Travel route use can also cause disturbance or interference with courtship, nesting, brood-rearing, or fledging activities. Because of sensitivity and fidelity to nest territory, abandonment of nest sites due to nearby human disturbances is of particular concern. Habitat-associated indirect risk factors of travel routes and related use include damage, loss, or fragmentation through isolation of habitats, establishment or spread of invasive weeds, and increased wildfire potential. OHV noise disturbances affecting birds can vary from abrupt and brief, like the disturbance caused by a

single user passing by, to more extended disturbances like those resulting from high traffic volumes on a busy holiday or dispersed camping taking place within nesting or foraging habitat. Accordingly, species' responses may also range from brief, immediate responses, such as alerting or flushing, to more long-term responses like abandonment of preferred habitat; however, while some species are negatively affected, others occur more frequently nearer roads due to factors such as prey availability or vegetation type (Kaseloo and Tyson 2004). Indirect effects also include altering or influencing of prey species (e.g., rodents, lizards, and snakes) behavior as a result of disturbance to cover vegetation (Romin and Muck 2002).

TMP implementation activities that could affect migratory birds and their habitats include installing new signs, route maintenance (grading, installing water control structures, surfacing, etc.), route decommissioning or reclamation (including ripping the ground and planting seed, grading/recontouring), or installing fencing or barriers. If implementation is proposed that falls outside of the previously disturbed area, additional site-specific NEPA may be required before the activity could occur. Seeding and planting on closed routes could accelerate reclamation and help to reestablish habitat. Implementation activities in riparian areas are of particular concern for migratory birds, though some implementation activities would have a positive effect on riparian habitats; for example, sign placement could direct travel on routes less disruptive to riparian resources.

Because the entire TMA contains some level of potential migratory bird habitat, Figure 3.26 (identical to Figure 2.1), which shows total miles of routes by major designation for each alternative, is used as an indicator for potential OHV-related impacts to migratory birds.

Figure 3.26: Miles of Evaluated Routes in Migratory Bird Habitat

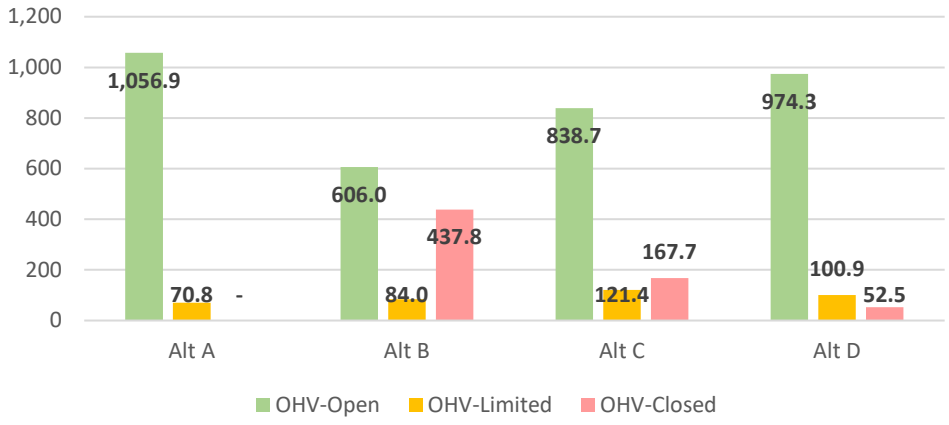
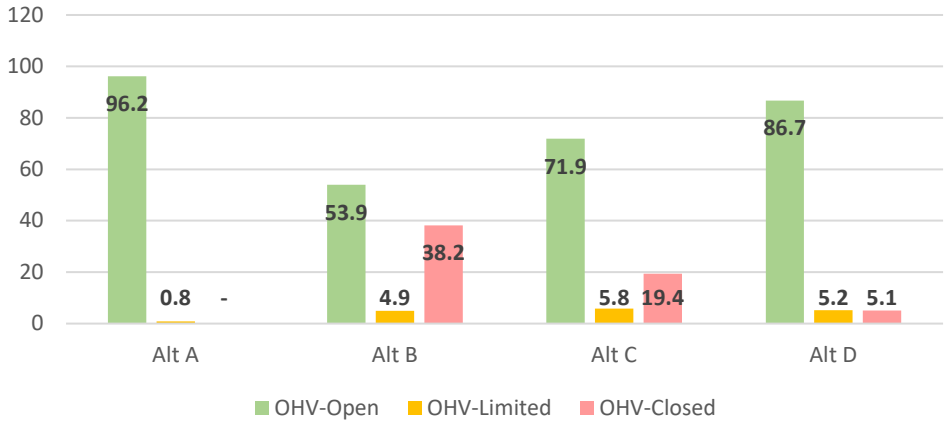


Figure 3.27, below, shows the miles of routes proximate to known raptor nests (i.e., within a specified buffer distance of nests). Proximity distances are based on those recommended in Appendix R of the 2008 RMP: for peregrine falcon, the proximity distance is 1 mile; for burrowing owl, it is ¼ mile; for other raptor species, it is ½ mile (BLM 2008c, p. R-13).

Figure 3.27: Miles of Evaluated Routes Proximate to Known Raptor Nests



Alternative A (No Action/Current Management)

The entire TMA provides some level of habitat potential for migratory birds, so all route miles and related uses in the current travel network have the potential to affect migratory birds and their habitat. The current travel network contains 1,127.7 miles of evaluated routes, all of which would remain open year-round to motorized use under Alternative A. Continuation of this level of OHV-Open designations would extend the potential for ongoing direct and indirect adverse impacts to migratory bird and raptor habitat described above throughout the TMA. Additionally, 97.0 miles of evaluated routes are proximate to raptor nests within the TMA, all of which would remain designated for year-round OHV use under Alternative A. Impacts to habitat from route designations and ongoing OHV use (i.e., direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.) would reflect a continuation of current management.

Alternative B (Natural Resource Emphasis)

Within the TMA-wide migratory bird potential habitat, Alternative B would designate 690.0 miles of evaluated routes for year-round OHV use, a 39% reduction compared to Alternative A. Of the evaluated routes proximate to raptor nests in the TMA, Alternative B would designate 58.8 miles for year-round OHV use, a 39% reduction from Alternative A. Effects on migratory birds and raptors, as noted above, would continue to occur from those routes designated OHV-Open or OHV-Limited under this alternative. Overall, Alternative B would have the lowest potential of any alternative for OHV-related impacts to migratory birds and raptors.

Alternative C (Multiple Use Emphasis)

Within the TMA-wide migratory bird potential habitat, Alternative C would designate 941.8 miles of evaluated routes for year-round OHV use, a 16% reduction compared to Alternative A. Alternative C would also designate 18.3 miles of evaluated routes as OHV-Limited with a seasonal restriction to help protect wildlife such as migratory birds. Of the evaluated routes proximate to raptor nests in the TMA, Alternative C would designate 74.8 miles for year-round OHV use, a 23% reduction from Alternative A; Alternative C would also designate 3.0 miles of evaluated routes proximate to known raptor nests as OHV-Limited with a seasonal limitation that would restrict motorized use during nesting season. Effects on migratory birds and raptors, as

noted above, would continue to occur from those routes designated for OHV use year-round. Overall, Alternative C's potential for OHV-related impacts to migratory birds and raptors is lower than Alternative A but higher than Alternative B.

Alternative D (Access Emphasis)

Within the TMA-wide migratory bird potential habitat, Alternative D would designate 1,072.9 miles of evaluated routes for year-round OHV use, a 5% reduction compared to Alternative A. Alternative D would also designate 2.4 miles of evaluated routes as OHV-Limited with a seasonal restriction to help protect wildlife such as migratory birds. Of the evaluated routes proximate to raptor nests in the TMA, Alternative D would designate 89.6 miles for year-round OHV use, an 8% reduction from Alternative A. Alternative D would also designate 2.4 miles of evaluated routes proximate to known raptor nests as OHV-Limited with a seasonal limitation that would restrict motorized use during nesting season. Effects on migratory birds and raptors, as noted above, would continue to occur from those routes designated for OHV use year-round. Overall, Alternative D's potential for OHV-related impacts to migratory birds, including raptors, is lower than Alternative A but higher than the other action alternatives.

Cumulative Effects

The CIAA for migratory birds includes the entire TMA plus a ½-mile buffer, as deemed appropriate by BLM wildlife staff expertise. Many species of migratory birds and raptors nest, migrate through, and over-winter in the MFO and the TMA. Though birds can travel great distances during migration, typically the nesting, migrating, and wintering individuals in or within ½ mile of the TMA will be most directly impacted by all activities with the TMA.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to migratory birds in the CIAA include the following:

- Land-based recreation, including use of roads, trails, campgrounds, and dispersed campsites; water-based use of the Green River and its corridor for boating activities and camping
- Livestock grazing and related range improvement and facility developments; livestock water infrastructure development to facilitate better grazing management on soils and vegetation
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium
- Noxious weed and invasive species proliferation and treatment

Accumulating impacts to migratory birds in the CIAA include vegetation alteration and habitat fragmentation from increased human activity and noise from recreation use and development and equipment use; human activity and noise on existing roads during use; collisions with vehicles; livestock trampling and browsing of vegetation; drought; and removal of vegetation from wildfires.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would be a continuation of current conditions, and

overall incremental impacts to migratory birds and their habitats within the CIAA is not anticipated.

None of the action alternatives B-D propose any new construction of routes, and each of the alternatives would reduce routes designated for OHV use and provide for reclamation of decommissioned routes. The action alternatives would also implement comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to the TMA's migratory bird and raptor species. None of the action alternatives are expected to result in incremental impacts on the TMA's migratory bird and raptor species and their habitats.

3.2.10 WILDLIFE: SPECIAL STATUS SPECIES (FEDERALLY LISTED AND UTAH BLM SENSITIVE SPECIES)

How would the route designation alternatives impact special status wildlife species and their habitat within the TMA?

Affected Environment

ESA-Listed Animal Species

The animal species below are listed as Threatened or Endangered under the ESA and have the potential to occur in the TMA. Details on habitat, threats, and trends for the ESA-listed species below as well as the BLM sensitive species listed lower in this section can be found in the "Special Status Species" sections of the 2008 Moab Proposed RMP/EIS (BLM 2008b, pages 3-147 to 3-164), the 2008 Moab RMP Biological Opinion (USFWS 2008), the UDWR Wildlife Action Plan 2015-2025 (UDWR 2015), NatureServe Explorer (NSE 2021), and BLM Instruction Memorandum No. UT IM-2019-005. All species listed below have at least the potential to occur in the TMA. Additional habitat, threat, and trend information sources are listed under each species. For acres of habitat and miles of evaluated routes within habitat in the TMA, see Table 3.7, below.

Table 3.7: Acres of Special Status Species Habitats and Miles of Evaluated Routes within Habitat

Species	Habitat Acres on BLM Lands within TMA	Miles of Evaluated Routes within Habitat
Mexican spotted owl	28,210	87.0
Southwestern willow flycatcher	16,606	57.0
Western yellow-billed cuckoo	1,138	5.1
White-tailed prairie dog and burrowing owl	18,700	62.8
Kit fox and special status bats	303,994	1,127.7

Mexican spotted owl (*Strix occidentalis lucida*) – Endangered

The Mexican spotted owl is a medium-sized owl that occurs in the forested mountains and canyonlands of the southwestern United States and Mexico. It is mottled in appearance with irregular white and brown spots on its abdomen, back, and head with several thin white bands

that mark an otherwise brown tail. Listed as threatened on March 16, 1993 (58 FR 14248), the initial Mexican Spotted Owl Recovery Plan (1995) partitioned the owl's habitat into eleven distinct recovery units, now called Ecological Management Units. Encompassing the TMA is the Colorado Plateau Ecological Management Unit. Within this unit, the species is primarily known to inhabit narrow, steep-walled, or hanging canyons where complex rocky terrain and favorable aspect substitute for the habitat elements found in old-growth forest utilized in other areas (Willey and Ward 2003). In Utah, these habitats, referred to as rocky-canyon habitats, typically include landscapes with complex tributary canyons, a variety of desert scrub and riparian vegetation communities, prominent vertical cliffs, and relatively cooler temperatures, which come from reduced insulation as a result of favorable canyon aspect. Within the rocky-canyon habitat, owls prefer to nest in caves and roost in caves or on rocky ledges, as well as in trees. While they nest and roost predominantly in the narrow, deeply incised sandstones canyons, they are known to forage farther afield in broader canyons and pinyon-juniper woodlands, both above and below the canyon rim, though research indicates that the majority of time spent foraging occurs below the rim (USFWS 2012). Modeled habitat exists within the TMA.

The original listing of the Mexican spotted owl in 1993 cited two primary reasons: historical alteration of its habitat resulting from timber-management practices and the threat of these practices continuing. Currently, threats to its population in the U.S. have transitioned from timber harvest to an increased risk of stand-replacing wildland fire (USFWS 2012). Neither of those two threats are expected to impact the TMA modeled habitat due to spotty tree and ground cover, but habitat alteration and fragmentation have the potential to negatively affect any owls that would be present. For additional details on Mexican spotted owl habitat, threats, and trends see the Mexican Spotted Owl Recovery Plan (USFWS 2012).

Southwestern willow flycatcher (*Empidonax trailii extimus*) – Endangered

The southwestern willow flycatcher is a small neotropical migratory bird that exclusively nests in dense tree and shrub riparian habitats. It was listed as endangered on February 27, 1995 (60 FR 10694). The historical range of the species included Arizona, California, Colorado, New Mexico, Texas, and Utah. The current range is similar but the quantity of suitable habitat within that range has been greatly reduced. Although often considered to use only cottonwood-willow associations, it is known to nest in various exotic species in the southwest, such as tamarisk and Russian olive. In general, its distribution follows its riparian habitat: relatively small, isolated, widely dispersed locales. Breeding territories have been found primarily where surface water or saturated soil is present, and nests are usually less than 20 meters from water (Johnson and Essen 2005). On October 19, 2005, 120,824 acres of critical habitat were formally designated across Arizona, New Mexico, California, Nevada, and Utah. Although critical habitat within Utah was only designated along the Virgin River in Washington County, the TMA contains suitable habitat for the species.

Threats to the southwestern willow flycatcher are numerous and complex but the primary factors include habitat loss and modification, invasive species in breeding habitats, brood parasitism, vulnerability of small population numbers, stresses during migration and in wintering habitats. For more details on habitat, threats, and trends, see the Final Recovery Plan for the Southwestern Willow Flycatcher (USFWS 2002c).

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) – Threatened

The western yellow-billed cuckoo was listed as threatened on October 3, 2014 (79 FR 59991 60038). It is a riparian-obligate species found intermittently throughout the western United States that nests in low to moderate elevation deciduous riparian woodlands (USFWS 2016). Though their current distribution in Utah is poorly understood, they appear to be an extremely rare breeder in lowland riparian habitats statewide. Much of the western yellow-billed cuckoo riparian habitat has been converted to farmland and housing, leading to population declines. Critical habitat was designated on April 21, 2021 (86 FR 20798 21005). It includes 298,845 acres in Arizona, California, Colorado, Idaho, New Mexico, Texas, and Utah. No designated critical habitat exists within the TMA and no known populations exist within the TMA. Suitable habitat within the TMA is limited by dry conditions, narrowness of existing riparian zones, grazing, and the presence of brown-headed cowbirds.

The cuckoo was listed due to loss of riparian habitat from agricultural use, water use, road development and urban development. Ongoing threats include habitat destruction and degradation from the invasion of tamarisk, livestock use of riparian areas, water withdrawals, and human development. For additional details on cuckoo habit, threats, and trends, see the Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-Billed Cuckoo (*Coccyzus americanus*); Proposed Rule (78 FR 61621 61666).

BLM Sensitive Animals

The TMA contains habitat for the following BLM Sensitive animals. For acres of habitat and miles of evaluated routes within habitat in the TMA, see Table 3.7, below.

Big free-tailed bat (*Nyctinomops macrotis*) – BLM Sensitive

The big free-tailed bat is a UDWR-listed species of concern and a BLM-listed sensitive species that has a wide but discontinuous distribution from western North America to South America. It occupies rocky areas in rugged or hilly country. It is found throughout eastern Utah but tends to migrate out of Utah for the winter. The species roosts and forms maternity colonies near the tops of cliffs, though sometimes they utilize buildings, caves, or tree cavities. The entire TMA has potential habitat for big free-tailed bat use. For more details on habitat and threats, see NSE 2021, UDWR 2008, and UDWR 2015.

Burrowing owl (*Athene cunicularia*) – BLM Sensitive

This species is migratory, arriving in its northern breeding range around April-May, and known to inhabit open grassland and prairies, using abandoned animal burrows at sites that occur in a variety of shrub-dominated habitats, often in sparsely vegetated areas. Stresses on the western burrowing owl include habitat loss and fragmentation due to urban land conversion and declines in populations of colonial burrowing mammals (USFWS 2003). Within the MFO, most burrowing owl nests are found in prairie dog habitat, as burrowing owls nest in abandoned burrows; because of this interrelationship, white-tailed prairie dog habitat will be used to analyze both species. For more details on habitat, threats, and trends, see NSE 2021.

Ferruginous hawk (*Buteo regalis*) – BLM Sensitive

See discussion for migratory birds and raptors in Section 3.2.9.

Kit fox (*Vulpes macrotis*) – BLM Sensitive

Kit fox habitat within the TMA is comprised of semi-desert and shrub-grass biomes that consist primarily of shadscale, greasewood, and sagebrush. In Utah, dens tend to be on flat, well-drained uplands. Kit foxes may use several dens, especially in summer. The entire TMA has potential habitat for kit fox use. For more details on habitat, threats, and trends, see NSE 2021.

Spotted bat (*Euderma maculatum*) – BLM Sensitive

This species occurs in various habitats from desert to montane coniferous stands, including open ponderosa pine, pinyon-juniper woodland, canyon bottoms, riparian and river corridors, meadows, open pasture, and hayfields. Most records are from deep, narrow, rocky canyons, where crevices in cliff walls are primary roosting sites. They are considered rare in Utah, though potential habitat exists throughout the TMA. For more details on habitat, threats, and trends, see pages 7-13, 85-91, and 97-107 of The Bats of Utah: A Literature Review (UDWR 2000).

Townsend's big-eared bat (*Corynorhinus townsendii*) – BLM Sensitive

Townsend's big-eared bat is found in many different types of habitats but tend to prefer forested areas and roost in caves, mines, and buildings. They are considered particularly sensitive to human disturbance (BLM 2013). The entire TMA has potential habitat for Townsend's big-eared bat use. For more details on habitat, threats, and trends, see pages 7-13, 85-91, and 97-107 of The Bats of Utah: A Literature Review (UDWR 2000).

White-tailed prairie dog (*Cynomys leucurus*) – BLM Sensitive

The white-tailed prairie dog is a UDWR-listed species of concern and a BLM-listed sensitive species. The species was found not warranted for ESA listing in 2017. They require relatively deep, well-drained soils for development of burrows, and they inhabit areas with flat to gently rolling slopes in grasslands and high desert scrub. White-tailed prairie dogs prefer saltbush and sagebrush habitats with an understory of grasses and forbs. Because they obtain most of their water from plants, moist vegetation is crucial to maintaining populations. Their burrows provide habitat for burrowing owls and small mammals, and prairie dogs also serve as an important prey species for a number of predators. Their current range is similar to their historic range, but their abundance has declined because of control efforts and plague. Populations since a 2008 survey have been relatively stable (UDWR 2015). The TMA contains modeled habitat for white-tailed prairie dog. For more details on habitat, threats, and trends, see UDWR 2007.

Environmental Effects Analysis

During the route evaluation process, the IDT considered special status wildlife species and their habitat in addressing designation criterion 8342.1 (b): "Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats." This attention to special status wildlife species and their habitat as a potential resource conflict is noted in the route reports and informed the IDT's formulation of alternative route networks. The action alternatives include measures to minimize impacts to special status wildlife species and their habitats, such as proposing routes for closure or seasonal limitations. (A sample route report is found in Appendix I. The full set of route reports can be found on the project's ePlanning website).

Motorized visitation to the TMA varies by season (with March, April, May, September, and October being the most popular months). These high-visitation months often coincide with the most crucial seasons for special status wildlife species (especially the spring seasons). This means that the effects of travel on special status species can be exacerbated because of the timing of that visitation.

OHV use and related recreation have been shown to have adverse effects on ESA-listed and BLM Sensitive animal species and their habitats. The effects of OHV use can be wide-ranging and detrimental to species and their populations especially if important habitats, like riparian areas, are affected (Gutzwiller et al. 2017). These effects can include direct mortality, injury, habitat destruction, habitat alteration, and habitat fragmentation (Brooks and Lair 2005, Ouren et al. 2007, Trombulak and Frissell 2000). Direct mortality can result from accidental collisions with OHVs, intentional and illegal poaching of special status wildlife, or the inadvertent destruction of eggs, nests, and burrows by unwitting individuals. Injury can result from animal-vehicle collisions or animal exposure to OHV effects such as the inner-ear bleeding found to occur in small mammals exposed to OHV-generated noise (Ouren et al. 2007). Additionally, roadside use, whether by foot, camping, roadside parking, passing, staging, or other means, can lead to the alteration of animal behavior or alteration or destruction of foraging, burrowing, or nesting habitats. Because of this, travel routes that go through or are adjacent to nesting, burrowing, or riparian habitat areas are of particular concern.

Disturbance from OHV use and human presence can also result in indirect impacts to special status species. Because many animal species respond to humans in the same ways they respond to predators, OHV use can trigger behavioral changes like increased flight and vigilance, and result in the disruption or displacement of other essential behaviors including breeding, nesting, foraging, hunting, and predator-avoidance activities (Larson et al. 2016, Ouren et al. 2007, Trombulak and Frissell 2000). Noise from OHVs can negatively impact birds by affecting nest-site selection or masking biologically important sounds, including mating calls or predator and prey sounds (Ortega 2012). These OHV noise disturbances can vary from abrupt and brief, like the disturbance caused by a single user passing by, to more extended disturbances like those resulting from high traffic volumes on a busy holiday or dispersed camping taking place within nesting or foraging habitat. Accordingly, species' responses may also range from brief, immediate responses, such as alerting or flushing, to more long-term responses like abandonment of preferred habitat (Kaseloo and Tyson 2004, Ortega 2012). These behavioral changes result in increased expenditures of time and energy towards avoiding humans and decreased expenditures of time and energy towards beneficial activities like foraging or caring for young, ultimately causing declines in abundance and occupancy, reduced reproductive success, and altered species richness and community composition (Larson et al. 2016, Ouren et al. 2007).

Impacts from route designations and OHV use affect habitat as well, further reducing resource availability through the introduction of non-native species, reductions in native vegetative cover, and detrimental changes to the physical and chemical environment like altered and amplified erosion patterns, reduced water infiltration, reduced water quality, reduced soil fertility, and increases in pollutants (Brooks and Lair 2005, Ouren et al. 2007, Trombulak and Frissell 2000). These reductions in habitat quality and connectivity exacerbate the direct and indirect impacts to individuals detailed above and can result in effects to native wildlife populations, species richness, and community composition (Larson et al. 2016, Ouren et al. 2007, Trombulak and Frissell 2000). Reduced density, diversity and biomass of lizards, birds, small prey species, and

even special status predators like the BLM sensitive kit fox have been associated with OHV use areas (Ouren et al. 2007, Jones et al. 2017). Specialist species, like the kit fox and other special status animals analyzed in this section, are particularly vulnerable to ecosystem alterations. The environmental changes outlined above have historically favored generalist species, like coyotes and ravens, at the expense of specialist species, like kit foxes and burrowing owls (Wilson and Willis 1975, With and Crist 1995, McKinney 1997, Hoffmeister et al. 2005). For more details on species-specific travel-related effects, see the 2008 Moab Proposed RMP/EIS (BLM 2008b), the 2008 Moab Biological Opinion (USFWS 2008), the Utah Wildlife Action Plan 2015-2025 (UDWR 2015b), the Mexican Spotted Owl Recovery Plan (USFWS 2012), the Final Recovery Plan for the Southwestern Willow Flycatcher (USFWS 2002c), and NatureServe Explorer (NSE 2021).

TMP implementation activities that can affect special status animals and their habitats include road maintenance (grading, installing water control structures, etc.), route reclamation (including ripping the ground and planting seed, grading/recontouring), or installing signs or fencing or barriers (digging post holes). Seeding and planting on closed routes can also accelerate reclamation and help to reestablish habitat. If implementation is proposed that falls outside of the previously disturbed area, additional site-specific NEPA may be required before the activity could occur.

Route networks with open or limited designations can contribute to the perpetuation of OHV use-related effects as discussed above. Conversely, closed and limited designations that prohibit OHV use wholly or in part can reduce or eliminate the perpetuation of the OHV-use effects, thereby benefitting wildlife species.

Figure 3.28 – Figure 3.32, below, which show the miles of routes proximate to or within special status wildlife species habitats, are used as indicators of potential impacts to special status wildlife species. Proximity distances for the federally listed species are based on those recommended in Appendix Q of the 2008 RMP.

Figure 3.28: Miles of Evaluated Routes within ½ Mile of Mexican Spotted Owl Habitat

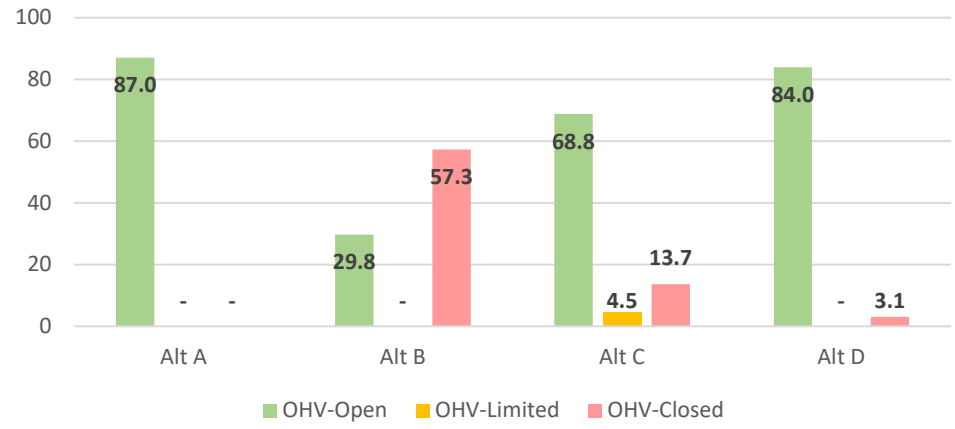


Figure 3.29: Miles of Evaluated Routes within ¼ Mile of Southwestern Willow Flycatcher Habitat

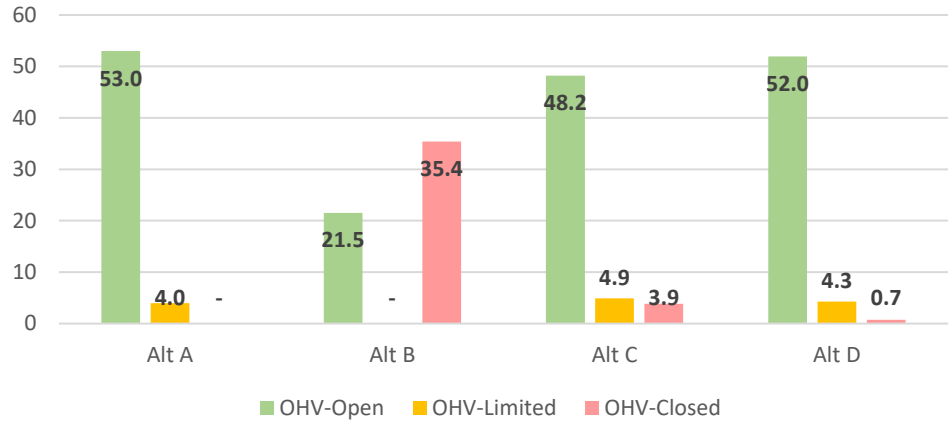


Figure 3.30: Miles of Evaluated Routes within ½ Mile of Western Yellow-Billed Cuckoo Habitat

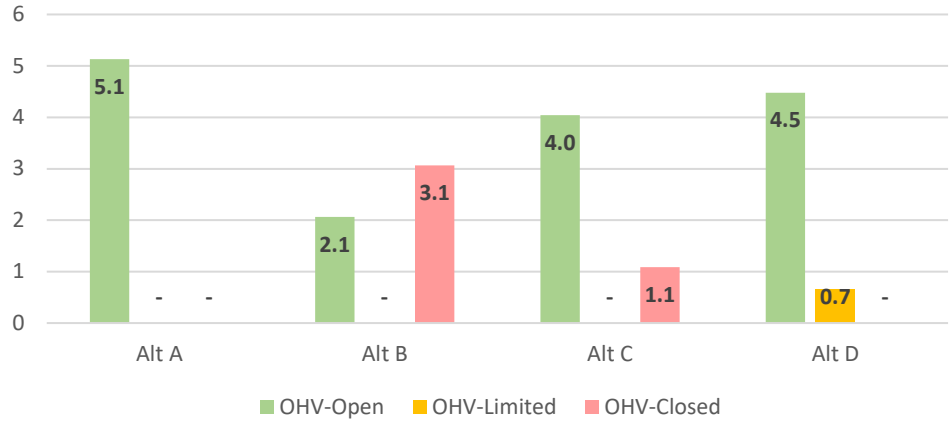


Figure 3.31:Miles of Evaluated Routes in White-Tailed Prairie Dog Modeled Habitat and Burrowing Owl Territory

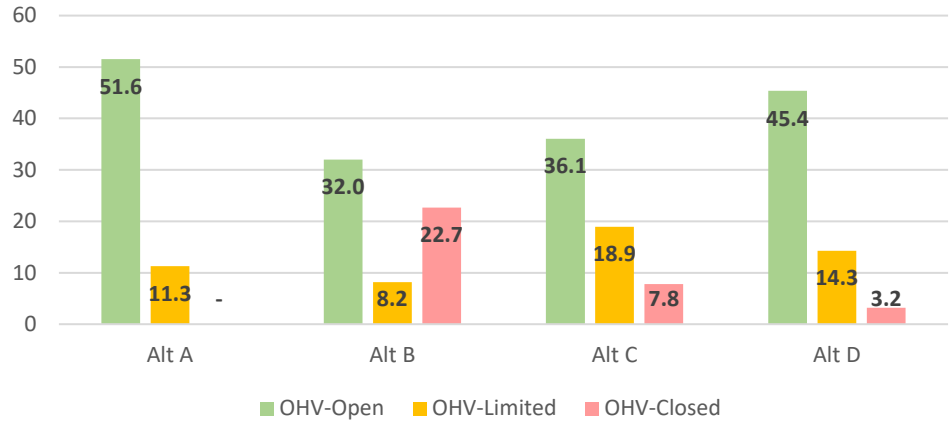
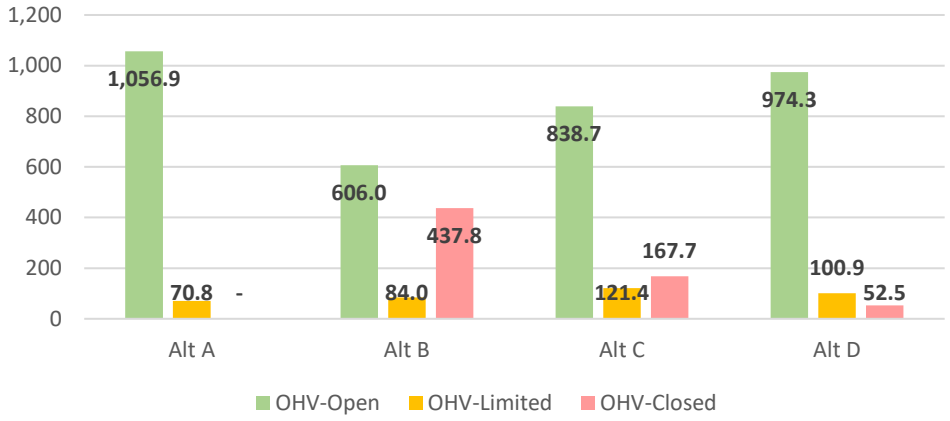


Figure 3.32: Miles of Evaluated Routes in Kit Fox and Special Status Bat Habitat[10]



Alternative A (No Action/Current Management)

Under Alternative A, there would be no route designation changes in the TMA. Of the evaluated routes in the Alternative A network, 8% (87.0 miles) are within ½ mile of Mexican spotted owl modeled habitat, 5% (57.0 miles) are within ¼ mile of Southwestern willow flycatcher suitable habitat, 0.5% (5.1 miles) are within ½ mile of Western yellow-billed cuckoo suitable habitat, and 6% (62.8 miles) are in white-tailed prairie dog modeled habitat and burrowing owl territory. Some habitat potential for kit fox, big free-tailed bat, spotted bat, and Townsend's big-eared bat, and spotted bat occurs across the entire TMA. Impacts to special status animal habitat from ongoing OHV use (i.e., direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.) would reflect a continuation of current management. The Alternative A travel network, with the most route miles open to OHV use in special status animal habitats, would have the greatest potential for adverse impacts to listed and sensitive species of any of the alternatives.

Alternative B (Natural Resource Emphasis)

Under this alternative, routes with known resource conflicts for special status species, particularly in riparian habitat areas, were proposed as closed rather than as seasonally limited. Alternative B would designate 29.8 miles of evaluated routes for OHV use within Mexican spotted owl modeled habitat, a 66% reduction from Alternative A. In Southwestern willow flycatcher suitable habitat, Alternative B would designate 21.5 miles of evaluated routes for OHV use, a 62% reduction compared to Alternative A. In Western yellow-billed cuckoo suitable habitat, Alternative B would designate 2.1 miles of evaluated routes for OHV use, a 60% reduction compared to Alternative A. In white-tailed prairie dog modeled habitat and burrowing owl territory, Alternative B would designate 40.2 miles of evaluated routes for OHV use, a 36% reduction compared to Alternative A. Finally, in kit fox and special status bat potential habitat, which includes the entire TMA, Alternative B would designate 690.0 miles for OHV use, a 39% reduction from Alternative A. The same types of effects to special status animal habitat noted above would continue to occur from those routes designated OHV-Open or OHV-Limited.

[10] Note: Some level of habitat potential exists across the entire TMA for these species.

Overall, Alternative B would have lower potential than all other alternatives for OHV-related impacts to special status animals within the TMA.

Alternative C (Multiple Use Emphasis)

Under Alternative C, some routes are proposed for seasonal restrictions during sensitive periods for wildlife. Within Mexican spotted owl modeled habitat, Alternative C would designate 73.3 miles of evaluated routes for OHV use, a 16% reduction from Alternative A; of the routes designated for OHV use, 4.5 miles would be limited seasonally. In Southwestern willow flycatcher suitable habitat, Alternative C would designate 53.1 miles of evaluated routes for OHV use, a 7% reduction from Alternative A; of the routes designated for OHV use, 0.5 miles would be limited seasonally. In Western yellow-billed cuckoo suitable habitat, Alternative C would designate 4.0 miles of evaluated routes for OHV use, a 21% reduction compared to Alternative A. In white-tailed prairie dog modeled habitat and burrowing owl territory, Alternative C would designate 55.0 miles of evaluated routes for OHV use, a 12% reduction compared to Alternative A. Finally, in kit fox and special status bat potential habitat, which includes the entire TMA, Alternative C would designate 960.1 miles for OHV use, a 15% reduction from Alternative A. The same types of effects to special status animal habitat noted above would continue to occur from those routes designated OHV-Open or OHV-Limited. Overall, Alternative C would have lower potential than Alternative A but higher potential than Alternative B for OHV-related impacts to special status animals within the TMA.

Alternative D (Access Emphasis)

Alternative D would designate 84.0 miles of evaluated routes for OHV use within Mexican spotted owl modeled habitat, a 4% reduction from Alternative A. In Southwestern willow flycatcher suitable habitat, Alternative D would designate 56.3 miles of evaluated routes for OHV use, a 1% reduction compared to Alternative A. In Western yellow-billed cuckoo suitable habitat, Alternative D would designate all 5.1 miles of evaluated routes for OHV use, the same as Alternative A; of these, 0.7 miles would be restricted seasonally. In white-tailed prairie dog modeled habitat and burrowing owl territory, Alternative D would designate 59.7 miles of evaluated routes for OHV use, a 5% reduction compared to Alternative A. Finally, in kit fox and special status bat potential habitat, which includes the entire TMA, Alternative D would designate 1,075.2 miles for OHV use, a 5% reduction from Alternative A. The same types of effects to special status animal habitat noted above would continue to occur from those routes designated OHV-Open or OHV-Limited. Overall, Alternative D would have lower potential than Alternative A but higher potential than the other action alternatives for OHV-related impacts to special status animals within the TMA.

Cumulative Effects

The CIAA for terrestrial special status wildlife species includes habitats south of I-70, north of the Colorado River, east of the Green River, and west of the Dolores River/Colorado River confluence; I-70 and the rivers represent reasonable travel corridor impediments for terrestrial species. The CIAA for burrowing owl includes ¼ mile from potential habitats within the TMA, and for ferruginous hawk includes ½ mile from potential habitats within the TMA (buffer distances are based on guidance in Appendix R of the 2008 RMP); both species nest, migrate through, and over-winter in the MFO and though birds can travel great distances during migration, typically the nesting, migrating, and wintering individuals in or near the TMA will be

most directly impacted by activities with the TMA. The CIAA for ESA-listed avian species includes buffered nesting habitat; though birds can travel great distances during migration, the TMA is not identified as a wintering area for any of these species and any potential winter residents would also likely utilize nesting-type habitats.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to special status wildlife in the CIAA include the following:

- Mexican Spotted Owl Recovery Plan
- Southwestern Willow Flycatcher Recovery Plan
- Land-based recreation, including use of roads, trails, campgrounds, and dispersed campsites; water-based use of the Green River and its corridor for boating activities and camping
- Livestock grazing and related range improvement and facility developments; livestock water infrastructure development to facilitate better grazing management on soils and vegetation
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium
- Noxious weed and invasive species proliferation and treatment

Accumulating impacts to special status wildlife in the CIAA include vegetation alteration and habitat fragmentation from increased human activity and noise from recreation use and development and equipment use; human activity and noise on existing roads during use; collisions with vehicles; livestock trampling and browsing of vegetation; drought; and removal of vegetation from wildfires. While not all the actions and events noted above may have contributed to direct or indirect impacts to special status animal species, associated site disturbances, access routes, and OHV use have also resulted in establishment and spread of invasive species and noxious weeds which compete with special status animal habitats.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would be a continuation of current conditions, and overall incremental impacts to special status wildlife and their habitats within the CIAA is not anticipated.

None of the action alternatives B-D propose any new construction of routes, and each of the alternatives would reduce routes designated for OHV use and provide for reclamation of decommissioned routes. The action alternatives would also implement comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to help offset ongoing route-related impacts to the TMA's special status wildlife species. None of the action alternatives are expected to result in incremental impacts on the TMA's special status wildlife species and their habitats.

3.3 POTENTIAL IMPACTS TO RECREATION USER OPPORTUNITIES AND EXPERIENCES

3.3.1 RECREATION

How would the route designation alternatives impact recreation opportunities and experiences in the TMA?

Affected Environment

The TMA offers significant opportunities for a variety of outdoor recreation activities, particularly scenic driving and viewing, full-sized vehicle exploring, dirt biking, UTV-ing, mountain biking, climbing, camping, hiking, paddling, horseback riding and hunting. The Moab area is economically dependent upon recreation-based businesses, and the number of visitors continues to grow annually—peaking each year during spring and fall months. The TMA is managed as a Destination Special Recreation Management Area (SRMA), with sufficient facilities and infrastructure in order to provide opportunities for primarily front-country recreation experiences. Most of the area is easily accessible from Moab, and receives moderate to heavy recreation use, both motorized and non-motorized. Recreation infrastructure ranges from developed campgrounds and trailheads to directional signing (BLM 2018). The TMA adjoins Canyonlands National Park and Dead Horse Point State Park, further attracting visitors to the area.

Motorized recreation is popular in the TMA and while the area offers a wide variety of recreation opportunities, it absorbs a particularly high level of OHV use relative to other areas within the MFO. There are several world class 4WD/OHV routes used by the annual Easter Jeep Safari event, including the Secret Spire, Gold Bar/Golden Spike, Hey Joe, Hell Roaring Rim, Gemini Bridges, Copper Ridge, Long Canyon, and Crystal Geyser routes. A 1,866-acre open OHV area (i.e., open to cross-country travel) is located at the White Wash Sand Dunes. Utah Highway 313 is a Utah State Scenic Byway and is popular for scenic driving outings; Highway 313 terminates at Dead Horse Point State Park. One backcountry airstrip in the TMA has been considered for designation (Mineral). There are three other airstrips in the TMA (Big Flat, Spring Canyon and Deadman Point) that are seldom used; while they are not considered for designation in this TMP, they could be considered for designation in the future on a case-by-case basis through an implementation-level planning decision.

The TMA also offers well-known non-motorized opportunities. There are 152 miles of popular mountain biking routes within the TMA, including those located in the Klondike Bluffs and Bar M Mountain Bike Focus Areas, as well as the Navajo Rocks, Magnificent Seven, and Horsethief trail systems. Hiking and backpacking opportunities include the Spring Canyon drainage and the constructed and maintained Corona Arch, Jeep Arch, Portal, Jewel Tibbets Arch, Longbow Arch, and Dellenbaugh Tunnel hiking trails, as well as numerous backcountry opportunities. Trails accessing paleontological sites are located at the Mill Canyon Tracksite, the Mill Canyon Dinosaur Trail, the Dinosaur Stomping Grounds, and the Copper Ridge Sauropod Site. Canyoneering activities are popular in the side canyons of Long Canyon, as well as in some side canyons of Culvert Canyon. Seven Mile Canyon is a popular equestrian destination. In addition, little-used routes near Jug Rock are popular with horseback riders.

The portion of the Green River forming the western boundary of the TMA is called Labyrinth Canyon, and it is popular for flatwater float trips by canoe or raft. Approximately 28 miles of evaluated routes are adjacent to the non-motorized float trip, including the Hey Joe Route, Ten Mile, the Tubes, Dead Cow and Hell Roaring Canyon. The BLM has received complaints from boaters concerning the noise made by motorized vehicles along the river corridor. BASE jumping and highlining are also popular in the area, primarily along the Mineral Bottom Road. Hunting access and opportunity is important in some areas of the TMA as well. Camping is limited to designated sites on 208,099 acres of the TMA.[11] In certain locations, such as along Utah Highway 313, all the designated sites are within developed campgrounds. In the remaining areas where camping is restricted, campsites are marked and designated. These areas include lands to the east of the Dubinky Well Road, Bartlett Wash, Gemini Bridges, and Bride Canyon, as well as lands designated as desert bighorn sheep lambing habitat. On the remainder of BLM lands within the TMA, dispersed camping is currently allowed, although driving off designated routes to access campsites is not allowed.

The MFO receives 1,894,393 visitor days per year, of which 483,921 were within the TMA (FY 2019). Visitor days are not expected to decrease regardless of which alternative travel network is chosen; that is, people will continue to come to the TMA and will drive the roads that are available (see Appendix G for an estimate of the economic impacts to recreation from this plan).

Environmental Effects Analysis

Direct effects that travel networks and their use have on recreation include reductions or gains in access for desired recreation opportunities and experiences and in encounters or conflicts with other users seeking different experiences (e.g., equestrian users on open OHV routes encountering OHV users) or with authorized users. Indirect impacts or effects include the actual gain or loss of recreation user opportunities and experiences afforded by the public lands for which a given travel network serves to provide access.

Based on use trends within the MFO, it is highly likely that visitation and demand for recreation opportunities will continue to increase, with visitors continuing to seek a diverse mix of motorized and non-motorized opportunities. Users seeking non-motorized recreation experiences (i.e., hiking, biking, hunting, and horseback riding), particularly near the Green River and its tributary canyons in the TMA, may in some cases benefit from a travel network that closes more OHV routes, as these users may encounter fewer conflicts with motorized users. Conversely, users seeking OHV opportunities would benefit from a network with more open route designations. In some cases, motorized and non-motorized user conflicts are minimized due to topographic screening. Providing for a broad variety of motorized and non-motorized opportunities would also enhance user safety by, at times, separating motorized users from non-motorized users (e.g., reducing or eliminating encounters between motorcycle and equestrian or mountain bike users).

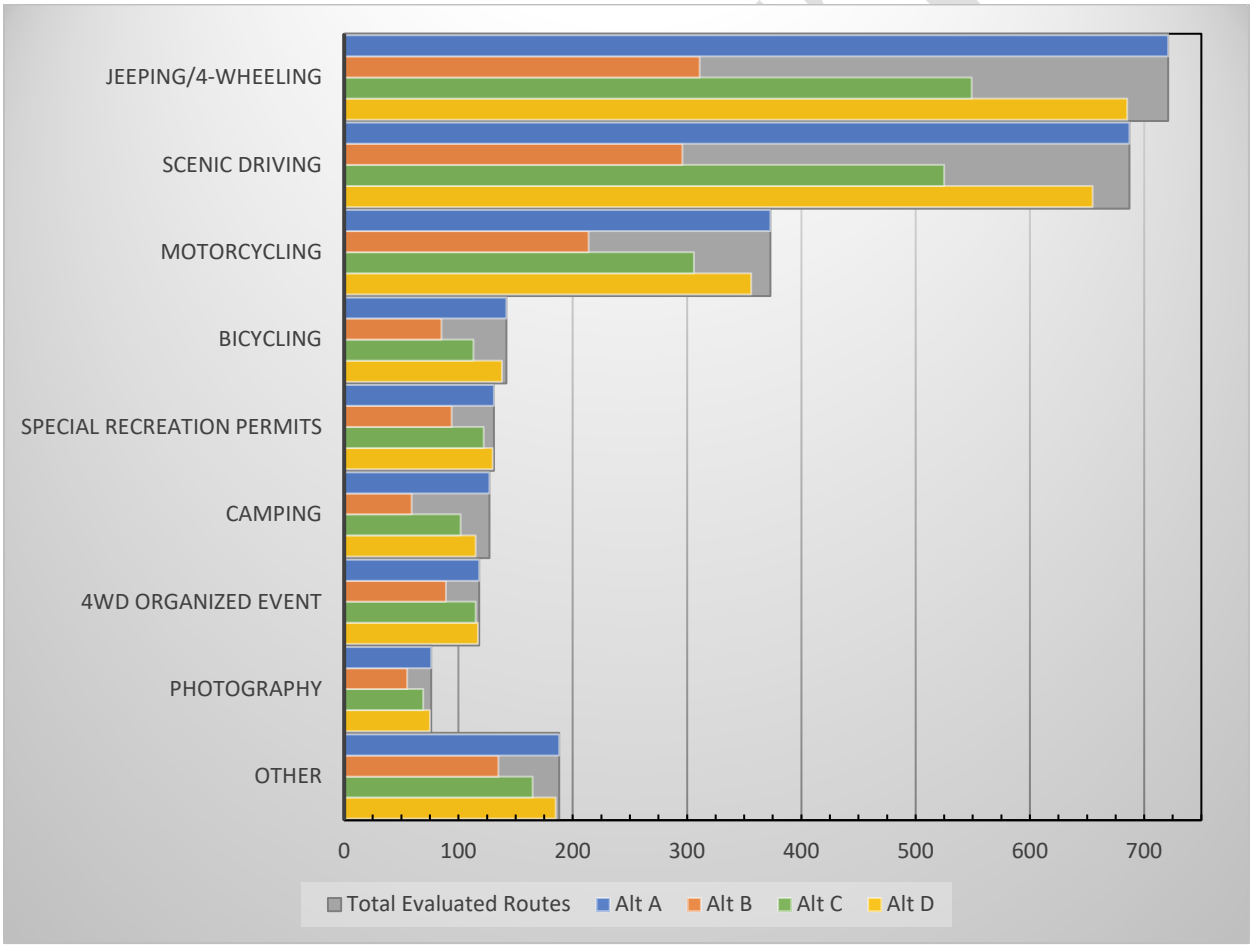
Table C.21 in Appendix C, which shows acres of BLM lands within the TMA that are greater than ½ mile, 1 mile, and 2 miles from evaluated routes, provides more context for non-motorized opportunities. For additional analysis of opportunities for primitive and unconfined recreation, see Section 3.2.2 (Lands with Wilderness Characteristics).

[11] Due to the increase in camping and its effects on natural and cultural resources, the BLM is in the process of limiting camping to designated sites in additional areas, increasing from 90,957 acres previously limited to designated sites within the TMA (see DOI-BLM-UT-Y010-2021-0094-EA).

TMP implementation activities that could affect recreation include route maintenance (surface and ditch grading and drainage structure replacement or installation, etc.), and sign placement (digging post holes). Maintenance can interrupt or temporarily block normal route use or access to recreation opportunities. However, maintenance actions would likely also enhance long-term access and safety for recreation experiences. Sign installation would direct recreationists to their destinations and educate recreationists on allowable uses for a particular route. If implementation is proposed that falls outside of the previously disturbed area, additional site-specific NEPA may be required before the activity could occur.

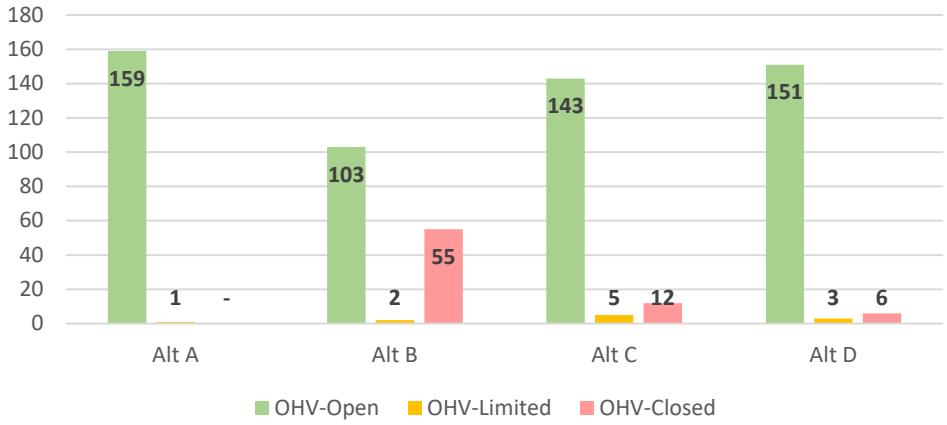
In analyzing the impacts of the various travel network alternatives on recreation, network miles and percent of a given network are used to provide a quantitative comparison of increased or decreased recreation user access for a variety of recreation activities and opportunities.

Figure 3.33: Number of Evaluated Routes Providing Opportunities for Various Recreation Activities



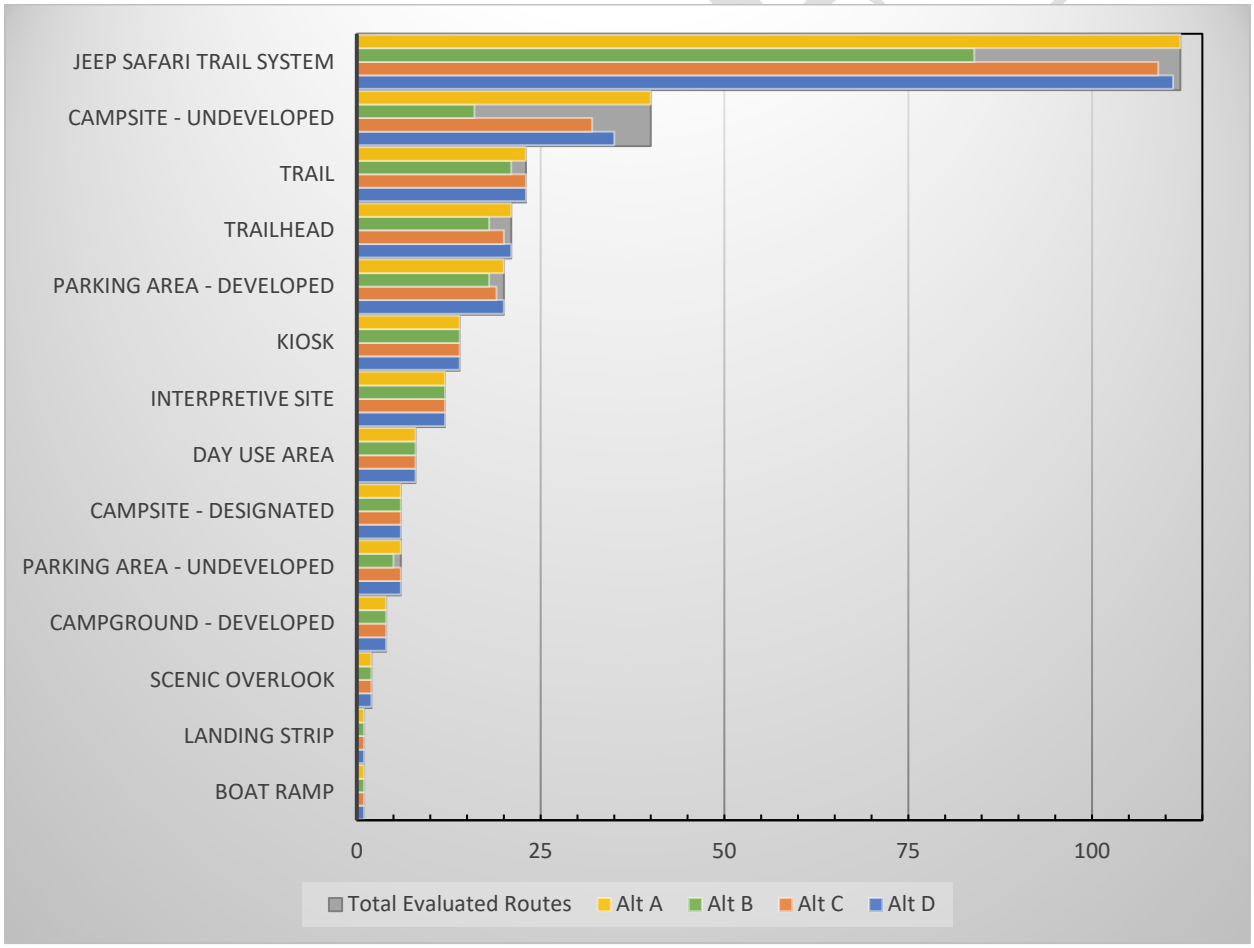
* For a breakdown of "Other" recreation activities in the TMA, see Table C.22 in Appendix C.

Figure 3.34: Number of Evaluated Routes Providing Primary Access to Recreation Destinations



Note: Some routes lead to more than one recreation destination.

Figure 3.35: Number of Evaluated Routes Providing Primary OHV Access to Recreation Destinations by Type



Alternative A (No Action/Current Management)

Most OHV-Open routes in the 2008 RMP travel network provide access for a variety of recreation activities. Approximately 18% of the evaluated routes in the TMA provide primary access to recreation destinations, particularly the Jeep Safari system and dispersed campsites. Under Alternative A, all evaluated routes accessing recreation destinations and opportunities, including the 27.8 miles of routes near the Green River (i.e., in the Green River WSR corridor) would remain designated for OHV use (OHV-Open or OHV-Limited). With all routes in this alternative remaining designated for OHV use, impacts to user access, conflicts of use (between motorized and non-motorized recreation users and authorized users), route-finding confusion, and route proliferation would reflect a continuation of current management.

Alternative B (Natural Resource Emphasis)

Of the evaluated routes providing OHV-centric opportunities (Jeeping/4-wheeling, scenic driving, and motorcycling), Alternative B would designate for OHV use 43%–57% fewer routes compared to Alternative A, though the decreases would be less (25%–28%) for routes currently associated with Special Recreation Permits (SRPs) or motorized events. Of the evaluated routes used to access non-motorized activities, Alternative B would designate for OHV use 14%–40% fewer, depending on activity, compared to Alternative A. Most routes accessing scarce opportunities such as flatwater canoeing, slacklining, and BASE jumping would be designated for OHV use. Of the evaluated routes accessing recreation destinations, Alternative B would designate 105 routes for OHV use, a 34% reduction from Alternative A. Routes accessing many of the most popular recreation opportunities, including most of the designated Jeep Safari routes, would be designated for OHV use. Of the evaluated routes near the Green River, which have the potential for user conflicts between OHV users and non-motorized boaters, Alternative B would designate 9.0 miles for OHV use, a 68% reduction from Alternative A. Overall, Alternative B would also provide less OHV-facilitated access for recreation opportunities and experiences compared to the other alternatives; however, it would also have the lowest potential of any alternative for conflicts between motorized and non-motorized users, and between recreation users and authorized users.

Alternative C (Multiple Use Emphasis)

Of the evaluated routes providing OHV-centric opportunities (Jeeping/4-wheeling, scenic driving, and motorcycling), Alternative C would designate for OHV use 18%–24% fewer compared to Alternative A, though the decreases would be less (3%–7%) for routes currently associated with SRPs or motorized events. Of the evaluated routes used to access non-motorized activities, Alternative C would designate for OHV use 6%–21% fewer, depending on activity, compared to Alternative A. Most routes accessing scarce opportunities such as flatwater canoeing, slacklining, and BASE jumping would be designated for OHV use. Of the evaluated routes accessing recreation destinations, Alternative C would designate 148 routes for OHV use, an 8% reduction from Alternative A. Routes accessing many of the most popular recreation opportunities, including the designated Jeep Safari routes, would be designated for OHV use. Of the evaluated routes near the Green River, which have the potential for user conflicts between OHV users and non-motorized boaters, Alternative C would designate 26.4 miles for OHV use, a 5% reduction from Alternative A. Overall, Alternative C would provide less OHV-facilitated

access for recreation opportunities compared to Alternative A; however, it would also have lower potential than Alternative A for user conflicts within the TMA.

Alternative D (Access Emphasis)

Of the evaluated routes providing OHV-centric opportunities (Jeeping/4-wheeling, scenic driving, and motorcycling), Alternative D would designate for OHV use 5% fewer compared to Alternative A, though the decreases would be less (1%) for routes currently associated with SRPs or motorized events. Of the evaluated routes used to access non-motorized activities, Alternative D would designate for OHV use 1%–10% fewer, depending on activity, compared to Alternative A; for some opportunities, there would be no change in routes designated for OHV use. All routes accessing scarce opportunities such as flatwater canoeing, slacklining, and BASE jumping would be designated for OHV use. Of the evaluated routes accessing recreation destinations, Alternative D would designate 154 routes for OHV use, a 4% reduction from Alternative A. Routes accessing many of the most popular recreation opportunities, including the designated Jeep Safari routes, would be designated for OHV use. Of the evaluated routes near the Green River, which have the potential for user conflicts between OHV users and non-motorized boaters, Alternative D would designate 27.8 miles for OHV use, the same as Alternative A. Overall, Alternative D would provide less OHV-facilitated access for recreation opportunities compared to Alternative A (but more access than the other action alternatives); however, it would also have slightly lower potential than Alternative A but higher potential than the other action alternatives for user conflicts within the TMA.

Cumulative Effects

The CIAA for recreation is the entire MFO area. The entire MFO area includes lands available for recreation within striking distance of Moab–not just those in the TMA. Moab is the basecamp for recreation users and while they heavily utilize the TMA, it is not the only location near Moab utilized for recreation use.

Past, present, and reasonably foreseeable plans, projects, or actions contributing to cumulative effects to recreation in the CIAA include the following:

- Land-based recreation, including use of roads, trails, campgrounds, and dispersed campsites; water-based use of the Green River and its corridor for boating activities and camping
- Non-motorized trail development
- Labyrinth Rims Recreation Area Management Plan (RAMP)
- Utah Pronghorn Statewide Management Plan
- Utah Bighorn Sheep Statewide Management Plan
- Livestock grazing and related range improvement and facility developments; livestock water infrastructure development to facilitate better grazing management on soils and vegetation
- Moab Master Leasing Plan and its associated Reasonably Foreseeable Development Scenarios for oil and gas and potash
- Mineral exploration and development, including oil and gas and locatable minerals such as lithium, potash, and uranium

Accumulating impacts to recreation in the CIAA are directly associated with loss or gain of OHV recreation user access from travel route designations; user conflicts (i.e., conflicts between authorized users—such as ROW holders or grazing permittees—and public users); conflicts between public users seeking different types of recreation experiences; and loss of solitude for recreation users from increased use and development.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from the existing route network and ongoing OHV use would be a continuation of current conditions, and an overall incremental change to recreation is not anticipated.

Alternatives B-D do not propose any new construction of routes. Alternatives B-D, with decreases in designations allowing for OHV use, would reduce accumulating conflicts between motorized and non-motorized recreation users and between recreation users and authorized users; however, there would also be incremental reductions in OHV access for recreating users relative to these Alternatives' OHV route closures. All the action alternatives B-D would implement comprehensive route network operation and management activities through a TMP Implementation Guide (Appendix L) that would provide formal guidance for signing, reclamation, and adaptive management protocols and help to effectively reduce ongoing route-related user conflicts between recreation users and between recreation users and authorized users that could occur under any of the action alternatives.

4 CONSULTATION AND COORDINATION

4.1 LIST OF PREPARERS

4.1.1 BUREAU OF LAND MANAGEMENT

The following staff assisted with assembling this EA and the TMP Implementation Guide (Appendix L). Additional staff contributed to the route evaluation that supports the EA and Implementation Guide.

Name	Title
Gabe Bissonette	Ecologist, Moab Field Office
Nicollee Gaddis-Wyatt	Field Manager, Moab Field Office/District Manager
Lori Hunsaker	Archaeologist, Moab Field Office
Beth Lament	GIS Specialist, Moab and Monticello Field Offices
Todd Murdock	Recreation Planner and Project Lead, Moab Field Office
Dave Pals	Assistant Field Manager and Geologist, Moab Field Office
Pam Riddle	Wildlife Biologist, Moab Field Office
Jordan Davis	Range Management Specialist, Moab Field Office
Jill Stephenson	Planning and Environmental Specialist, Moab Field Office
Bill Stevens	Recreation Planner/Economist, Moab Field Office
Katie Stevens	Recreation Planner and Project Lead, Moab Field Office
Lisa Wilkolak	Realty Specialist, Moab Field Office
David Williams	Range Management Specialist, Moab Field Office

4.1.2 INTERDISCIPLINARY TEAM INVOLVEMENT AND COOPERATORS

BLM resource and resource use disciplines represented on the IDT during route evaluation included: cultural resources, soils, water quality, riparian and wetlands, geology and minerals, paleontology, GIS, hydrology, law enforcement, natural resources, outdoor recreation planning, public health and safety, minerals, native vegetation and rangeland management, noxious weeds and invasive species, lands and realty, and environmental planning and NEPA. Cooperating Agencies involved with this project included Grand County, the Utah School and Institutional Trust Lands Administration (SITLA), and the State of Utah Public Lands Policy Coordinating Office (PLPCO). After route evaluations, these cooperators reviewed the preliminary alternative travel route networks and provided feedback on the preliminary route designations and the draft alternative route networks.

4.1.3 ADVANCED RESOURCE SOLUTIONS, INC. (ARS)

The following contractor staff also assisted with developing the TMP and EA

Name	Title
Tom Folks	Travel Management Planner
Cameron Gale	Travel Management Planner/Writer
Dennis Gale	Travel Management Planner/Writer
Derek Givens	Travel Management Planner/GIS Specialist
Les Weeks	Company Owner

4.2 PUBLIC REVIEW

Public scoping occurred from March 23 – April 26, 2021, and was intended to solicit input from the public on the issues and potential impacts that could be addressed in this EA. This scoping also provided the public with the opportunity to review the preliminary alternatives prior to the public comment period for the Draft EA. Scoping comments were considered and used in this EA's preparation (see Section 1.6). See the scoping report on this project's ePlanning page for a summary of public scoping.

4.2.1 COOPERATOR INPUT

On November 12, 2021, a draft copy of this EA was provided to the Cooperating Agencies (Grand County, PLPCO, and SITLA). Each of these entities provided comments on the draft; their comments are summarized below.

Grand County expressed a desire to see a more robust discussion of user conflicts in the TMA; they asked that 30% of the TMA be more than 0.5 miles from a motorized route and 15% of the TMA be more than one mile from a motorized route. To this end, the County provided a list of routes which they wished to see designated OHV-Closed or OHV-limited in Alternative B. The County further encouraged the BLM to make greater use of "administrative use only" designations, and to consider making certain routes open only to full-sized vehicles because they are quieter, reducing conflicts with "quiet recreation."

PLPCO asked that all asserted R.S. 2477 rights of way be open under all alternatives. PLPCO further stated that Alternative B is not reasonable, would result in a loss of income, and does not reflect the recreational desires of the visiting public. The office asked that hunting opportunities and emergency services be addressed more robustly, and stated that Alternative D aligns more fully with the State of Utah's Resource Management Plan. The State also asked that 21 specific routes be kept open under all alternatives.

SITLA expressed a desire to maintain access to State Lands. SITLA stated that there are situations where one access route to SITLA is insufficient due to topographic or other constraints. SITLA calls out seven routes that are closed in Alternative B and two routes that are closed in Alternative C that they wish to see open in those alternatives to provide multiple access routes to SITLA lands.

The BLM considered cooperator input and updated the alternatives, as the BLM deemed appropriate, to ensure a robust range to analyze in this EA.

4.3 CONSULTATION

4.3.1 NATIONAL HISTORIC PRESERVATION ACT (NHPA) SECTION 106

The BLM is conducting NHPA consultation in accordance with the 2018 Travel PA. These consultation efforts included seeking input from Indian tribes and consulting parties regarding BLM's Class I Inventory, cultural resource potential models, the Area of Potential Effect, the need to conduct additional cultural resource surveys, and BLM's finding of effect. BLM's consultation efforts are documented in Appendix H.

Tribal Consultation

Tribal consultation is ongoing.

Other Consulting Parties

Consultation with other interested parties is ongoing.

The Utah State Historic Preservation Office

State Historic Preservation Office consultation is ongoing.

4.3.2 ENDANGERED SPECIES ACT SECTION 7

Coordination and communication with the USFWS is ongoing.

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APPENDIX B ABBREVIATIONS AND ACRONYMS

ACEC	Area of Critical Environmental Concern
AOI	Area of Influence
ATV	All-terrain vehicle
BLM	Bureau of Land Management
BMP	Best management practice
CFR	Code of Federal Regulations
CIAA	Cumulative impacts analysis area
EA	Environmental Assessment
IDT	Interdisciplinary team
LWC	Land with wilderness characteristics
MFO	Moab Field Office
NEPA	National Environmental Policy Act
NSE	NatureServe Explorer
OHV	Off-highway vehicle
PFC	Proper Functioning Condition
PLPCO	State of Utah Public Lands Policy Coordinating Office
RMP	Resource Management Plan
ROW	Right-of-way
SHPO	State Historic Preservation Office
SITLA	Utah School and Institutional Trust Lands Administration
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
TMA	Travel Management Area
TMP	Travel Management Plan
UDWR	Utah Division of Wildlife Resources
USFWS	U.S. Fish and Wildlife Service
UTV	Utility terrain vehicle

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APPENDIX C ADDITIONAL TABLES

Table C.1: Miles of Evaluated Routes by Alternative and Designation

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
All Miles (1,127.7 miles; 100% of evaluated network)	OHV-Open	1,056.9	606.0	-451.0	838.7	-218.3	974.3	-82.6
	OHV-Limited	70.8	84.0	+13.2	121.4	+50.6	100.9	+30.1
	OHV-Closed	-	437.8	+437.8	167.7	+167.7	52.5	+52.5

Table C.2: Number of Evaluated Routes with Direct (In, Leads To, or Crosses) or Indirect (Proximate) Access to Various Cultural Resource Sites

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Historic Properties (142 routes; 15.7% of evaluated network)	OHV-Open	134	68	-66	104	-30	118	-16
	OHV-Limited	8	10	+2	18	+10	13	+5
	OHV-Closed	-	64	+64	20	+20	11	+11
Not Eligible Sites (99 routes; 10.9% of evaluated network)	OHV-Open	94	60	-34	81	-13	85	-9
	OHV-Limited	5	5	-	7	+2	6	+1
	OHV-Closed	-	34	+34	11	+11	8	+8
Unevaluated Sites (18 routes; 2% of evaluated network)	OHV-Open	18	8	-10	16	-2	18	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	10	+10	2	+2	-	-

Table C.3: Miles of Evaluated Routes in LWC

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Lands with Wilderness Characteristics (40.5 miles; 3.6% of evaluated network)	OHV-Open	40.5	-	-40.5	19.2	-21.2	36.8	-3.7
	OHV-Limited	-	-	-	7.5	+7.5	-	-
	OHV-Closed	-	40.5	+40.5	13.8	+13.8	3.7	+3.7

Table C.4: Miles of Evaluated Routes in Each LWC Unit

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Arches LWC (0.1 miles; 0% of evaluated network)	OHV-Open	0.1	-	-0.1	0.0	-0.0	0.0	-0.0
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	0.1	+0.1	0.0	+0.0	0.0	+0.0
Goldbar LWC (7.1 miles; 0.6% of evaluated network)	OHV-Open	7.1	-	-7.1	2.7	-4.4	7.1	-
	OHV-Limited	-	-	-	4.3	+4.3	-	-
	OHV-Closed	-	7.1	+7.1	0.2	+0.2	-	-
Labyrinth Additions LWC (33.3 miles; 3% of evaluated network)	OHV-Open	33.3	-	-33.3	16.5	-16.8	29.6	-3.6
	OHV-Limited	-	-	-	3.2	+3.2	-	-
	OHV-Closed	-	33.3	+33.3	13.5	+13.5	3.6	+3.6

Table C.5: Miles of Evaluated Routes in Erodible and Saline Soils

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Erosive Soils (859.6 miles; 76.2% of evaluated network)	OHV-Open	809.3	477.2	-332.1	654.8	-154.5	748.6	-60.6
	OHV-Limited	50.3	53.0	+2.7	83.9	+33.5	65.6	+15.3
	OHV-Closed	-	329.4	+329.4	121.0	+121.0	45.3	+45.3
High Erosion Potential (183.7 miles; 16.3% of evaluated network)	OHV-Open	170.6	97.6	-73.0	144.2	-26.4	159.4	-11.2
	OHV-Limited	13.0	13.0	-0.1	16.5	+3.4	15.1	+2.0
	OHV-Closed	-	73.1	+73.1	23.0	+23.0	9.2	+9.2
Moderate Erosion Potential (675.9 miles; 59.9% of evaluated network)	OHV-Open	638.6	379.5	-259.1	510.5	-128.1	589.2	-49.4
	OHV-Limited	37.3	40.1	+2.8	67.4	+30.1	50.5	+13.3
	OHV-Closed	-	256.3	+256.3	98.0	+98.0	36.2	+36.2
Saline Soils (65.1 miles; 5.8% of evaluated network)	OHV-Open	53.9	33.3	-20.6	37.4	-16.5	47.0	-6.9
	OHV-Limited	11.3	8.2	-3.1	18.9	+7.7	15.4	+4.1
	OHV-Closed	-	23.7	+23.7	8.8	+8.8	2.8	+2.8

Table C.6: Miles of Evaluated Routes in Various Native Vegetation Classes

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Blackbrush (467.1 miles; 41.4% of evaluated network)	OHV-Open	441.3	258.1	-183.3	357.1	-84.2	411.4	-29.9
	OHV-Limited	25.7	27.9	+2.1	40.6	+14.9	34.3	+8.5
	OHV-Closed	-	181.1	+181.1	69.3	+69.3	21.4	+21.4
Pinyon and Juniper Woodlands (262.0 miles; 23.2% of evaluated network)	OHV-Open	243.8	118.4	-125.3	192.4	-51.4	228.3	-15.5
	OHV-Limited	18.2	16.3	-1.9	27.3	+9.1	22.6	+4.4
	OHV-Closed	-	127.2	+127.2	42.3	+42.3	11.1	+11.1
Salt Desert Scrub (219.0 miles; 19.4% of evaluated network)	OHV-Open	204.6	123.8	-80.8	155.7	-48.9	179.5	-25.1
	OHV-Limited	14.4	27.3	+12.8	31.0	+16.6	27.6	+13.2
	OHV-Closed	-	68.0	+68.0	32.3	+32.3	11.9	+11.9
Dunes (88.2 miles; 7.8% of evaluated network)	OHV-Open	77.5	57.7	-19.9	65.4	-12.1	71.5	-6.0
	OHV-Limited	10.7	7.0	-3.7	12.8	+2.2	12.1	+1.5
	OHV-Closed	-	23.5	+23.5	10.0	+10.0	4.6	+4.6

Table C.7: Miles of Evaluated Routes in Existing Weed Infestation Areas

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Weed Infestation Areas (164.4 miles; 14.6% of evaluated network)	OHV-Open	152.8	75.6	-77.2	115.1	-37.6	141.6	-11.2
	OHV-Limited	11.6	9.0	-2.6	20.3	+8.7	15.5	+3.9
	OHV-Closed	-	79.8	+79.8	28.9	+28.9	7.3	+7.3

Table C.8: Miles of Evaluated Routes in ACECs

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Highway 279 / Shafer Basin / Long Canyon ACEC (0.9 miles; 0.1% of evaluated network)	OHV-Open	0.9	0.4	-0.4	0.6	-0.2	0.9	-
	OHV-Limited	-	-	-	0.2	+0.2	-	-
	OHV-Closed	-	0.4	+0.4	-	-	-	-
Ten Mile Wash ACEC (22.4 miles; 2% of evaluated network)	OHV-Open	20.0	2.6	-17.4	4.8	-15.2	19.4	-0.6
	OHV-Limited	2.4	1.7	-0.7	6.7	+4.3	2.2	-0.2
	OHV-Closed	-	18.1	+18.1	10.9	+10.9	0.7	+0.7

Table C.9: Miles of Evaluated Routes in Green River Scenic WSR Corridor

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Green River Scenic WSR Corridor (27.8 miles; 2.5% of evaluated network)	OHV-Open	26.0	9.0	-17.0	23.8	-2.2	26.0	-
	OHV-Limited	1.8	-	-1.8	2.6	+0.8	1.8	-
	OHV-Closed	-	18.8	+18.8	1.4	+1.4	-	-

Table C.10: Miles of Evaluated Routes within 1 Mile of the Old Spanish NHT

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Old Spanish Trail NHT (113.1 miles; 10% of evaluated network)	OHV-Open	105.5	77.1	-28.4	89.2	-16.4	98.7	-6.9
	OHV-Limited	7.5	12.4	+4.9	13.7	+6.2	9.8	+2.3
	OHV-Closed	-	23.5	+23.5	10.2	+10.2	4.6	+4.6

Table C.11: Miles of Evaluated Routes in VRI Classes

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
VRI Class II (729.0 miles; 64.6% of evaluated network)	OHV-Open	717.5	393.3	-324.2	575.5	-142.1	672.6	-44.9
	OHV-Limited	11.4	17.2	+5.7	32.4	+21.0	18.5	+7.1
	OHV-Closed	-	318.5	+318.5	121.1	+121.1	37.8	+37.8
VRI Class III (168.5 miles; 14.9% of evaluated network)	OHV-Open	146.8	85.6	-61.2	115.7	-31.1	135.7	-11.1
	OHV-Limited	21.7	27.1	+5.4	35.3	+13.6	30.3	+8.6
	OHV-Closed	-	55.8	+55.8	17.5	+17.5	2.5	+2.5
VRI Class IV (230.1 miles; 20.4% of evaluated network)	OHV-Open	192.5	126.9	-65.6	147.3	-45.2	165.8	-26.7
	OHV-Limited	37.6	39.6	+2.0	53.7	+16.1	52.1	+14.5
	OHV-Closed	-	63.6	+63.6	29.1	+29.1	12.2	+12.2

Table C.12: Miles of Evaluated Routes in VRM Classes

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
VRM Class II (392.0 miles; 34.8% of evaluated network)	OHV-Open	383.5	200.2	-183.3	299.9	-83.6	363.9	-19.7
	OHV-Limited	8.4	8.3	-0.1	19.5	+11.0	10.5	+2.1
	OHV-Closed	-	183.4	+183.4	72.6	+72.6	17.6	+17.6
VRM Class III (560.5 miles; 49.7% of evaluated network)	OHV-Open	515.5	315.8	-199.7	426.4	-89.1	479.2	-36.3
	OHV-Limited	45.0	41.3	-3.7	60.7	+15.7	54.0	+9.0
	OHV-Closed	-	203.5	+203.5	73.3	+73.3	27.3	+27.3
VRM Class IV (175.3 miles; 15.5% of evaluated network)	OHV-Open	158.0	90.0	-68.0	112.4	-45.6	131.2	-26.8
	OHV-Limited	17.3	34.3	+17.0	41.2	+23.8	36.4	+19.1
	OHV-Closed	-	51.1	+51.1	21.8	+21.8	7.7	+7.7

Table C.13: Number of Evaluated Routes In or Crossing Streams

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Perennial stream (8 routes; 0.9% of evaluated network)	OHV-Open	7	4	-3	4	-3	6	-1
	OHV-Limited	1	-	-1	2	+1	2	+1
	OHV-Closed	-	4	+4	2	+2	-	-
Intermittent stream (16 routes; 1.8% of evaluated network)	OHV-Open	11	3	-8	6	-5	9	-2
	OHV-Limited	5	3	-2	8	+3	7	+2
	OHV-Closed	-	10	+10	2	+2	-	-
Ephemeral stream (382 routes; 42.1% of evaluated network)	OHV-Open	360	171	-189	256	-104	317	-43
	OHV-Limited	22	33	+11	46	+24	39	+17
	OHV-Closed	-	178	+178	80	+80	26	+26

Table C.14: Miles of Evaluated Routes In, Crossing, or within 100 Meters of Riparian Areas or Springs

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Riparian (79.3 miles; 7% of evaluated network)	OHV-Open	68.7	29.7	-39.0	47.0	-21.7	65.9	-2.8
	OHV-Limited	10.6	3.5	-7.0	16.7	+6.1	12.4	+1.8
	OHV-Closed	-	46.1	+46.1	15.6	+15.6	1.0	+1.0

Table C.15: Miles of Evaluated Routes in Conditional AOI for Special Status Fish Species

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Conditional AOI for Special Status Fish Species (95.4 miles; 8.5% of evaluated network)	OHV-Open	89.9	40.3	-49.6	73.0	-16.9	87.0	-2.9
	OHV-Limited	5.5	0.8	-4.7	9.3	+3.8	5.3	-0.2
	OHV-Closed	-	54.3	+54.3	13.1	+13.1	3.1	+3.1

Table C.16: Miles of Evaluated Routes in Desert Bighorn Lambing Areas

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Desert Bighorn Sheep (294.2 miles; 26.1% of evaluated network)	OHV-Open	281.3	110.2	-171.1	204.3	-77.0	265.0	-16.3
	OHV-Limited	12.9	14.5	+1.5	29.9	+17.0	19.5	+6.6
	OHV-Closed	-	169.5	+169.5	60.0	+60.0	9.7	+9.7

Table C.17: Miles of Evaluated Routes in Pronghorn Antelope Habitat

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Pronghorn (394.6 miles; 35% of evaluated network)	OHV-Open	329.3	209.9	-119.3	249.1	-80.2	296.4	-32.8
	OHV-Limited	65.3	66.4	+1.0	91.6	+26.3	83.5	+18.2
	OHV-Closed	-	118.3	+118.3	53.9	+53.9	14.7	+14.7

Table C.18: Miles of Evaluated Routes in Migratory Bird Habitat

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
All Miles (1,127.7 miles; 100% of evaluated network)	OHV-Open	1,056.9	606.0	-451.0	838.7	-218.3	974.3	-82.6
	OHV-Limited	70.8	84.0	+13.2	121.4	+50.6	100.9	+30.1
	OHV-Closed	-	437.8	+437.8	167.7	+167.7	52.5	+52.5

Table C.19: Miles of Evaluated Routes Proximate to Known Raptor Nests

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Raptor Nests (97.1 miles; 8.6% of evaluated network)	OHV-Open	96.2	53.9	-42.3	71.9	-24.4	86.7	-9.5
	OHV-Limited	0.8	4.9	+4.1	5.8	+5.0	5.2	+4.4
	OHV-Closed	-	38.2	+38.2	19.4	+19.4	5.1	+5.1

Table C.20: Miles of Evaluated Routes in or Proximate to Special Status Animal Species Habitats

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Mexican Spotted Owl (87.0 miles; 7.7% of evaluated network)	OHV-Open	87.0	29.8	-57.3	68.8	-18.2	84.0	-3.1
	OHV-Limited	-	-	-	4.5	+4.5	-	-
	OHV-Closed	-	57.3	+57.3	13.7	+13.7	3.1	+3.1
Southwestern Willow Flycatcher (57.0 miles; 5.1% of evaluated network)	OHV-Open	53.0	21.5	-31.4	48.2	-4.8	52.0	-1.0
	OHV-Limited	4.0	-	-4.0	4.9	+0.9	4.3	+0.3
	OHV-Closed	-	35.4	+35.4	3.9	+3.9	0.7	+0.7
White-Tailed Prairie Dog & Burrowing Owl (62.8 miles; 5.6% of evaluated network)	OHV-Open	51.6	32.0	-19.6	36.1	-15.5	45.4	-6.2
	OHV-Limited	11.3	8.2	-3.1	18.9	+7.7	14.3	+3.0
	OHV-Closed	-	22.7	+22.7	7.8	+7.8	3.2	+3.2
Western Yellow-Billed Cuckoo (5.1 miles; 0.5% of evaluated network)	OHV-Open	5.1	2.1	-3.1	4.0	-1.1	4.5	-0.7
	OHV-Limited	-	-	-	-	-	0.7	+0.7
	OHV-Closed	-	3.1	+3.1	1.1	+1.1	-	-

Table C.21: Acres of BLM Lands More than ½ Mile, 1 Mile, and 2 Miles from Routes Designated for OHV Use[12]

	Alt. A Acres	Percent of BLM Lands	Alt. B Acres	Percent of BLM Lands	Alt. C Acres	Percent of BLM Lands	Alt. D Acres	Percent of BLM Lands
Greater than ½ mile from a motorized route	19,031	6.3%	65,987	21.7%	28,290	9.3%	19,939	6.6%
Greater than 1 mile from a motorized route	1,789	0.6%	14,661	4.8%	2,406	0.8%	1,818	0.6%
Greater than 2 mile from a motorized route	0	0%	1,706	1%	0	0%	0	0%

[12] Grand County, a cooperator, requested that the BLM disclose the acreage of BLM lands that are within ½ mile, 1 mile, and 2 miles from a designated route. In its request to the BLM, Grand County stated that a "better way to assess non-motorized recreational opportunities" is to disclose this acreage. The implication is that non-motorized opportunities can only be found in those lands that are devoid of roads.

Table C.22: Number of Evaluated Routes Providing Opportunities for Various Recreation Activities

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Jeeping/4-Wheeling (721 routes; 79.5% of evaluated network)	OHV-Open	705	290	-415	505	-200	665	-40
	OHV-Limited	16	21	+5	44	+28	20	+4
	OHV-Closed	-	410	+410	172	+172	36	+36
Scenic Driving (687 routes; 75.7% of evaluated network)	OHV-Open	687	283	-404	493	-194	649	-38
	OHV-Limited	-	13	+13	32	+32	6	+6
	OHV-Closed	-	391	+391	162	+162	32	+32
Motorcycling (373 routes; 41.1% of evaluated network)	OHV-Open	338	161	-177	232	-106	295	-43
	OHV-Limited	35	53	+18	74	+39	61	+26
	OHV-Closed	-	159	+159	67	+67	17	+17
Bicycling (142 routes; 15.7% of evaluated network)	OHV-Open	141	84	-57	111	-30	136	-5
	OHV-Limited	1	1	-	2	+1	2	+1
	OHV-Closed	-	57	+57	29	+29	4	+4
Special Recreation Permits (131 routes; 14.4% of evaluated network)	OHV-Open	125	90	-35	114	-11	124	-1
	OHV-Limited	6	4	-2	8	+2	6	-
	OHV-Closed	-	37	+37	9	+9	1	+1
Camping (127 routes; 14% of evaluated network)	OHV-Open	127	59	-68	98	-29	115	-12
	OHV-Limited	-	-	-	4	+4	-	-
	OHV-Closed	-	68	+68	25	+25	12	+12
4WD Organized Event (118 routes; 13% of evaluated network)	OHV-Open	118	89	-29	112	-6	117	-1
	OHV-Limited	-	-	-	3	+3	-	-
	OHV-Closed	-	29	+29	3	+3	1	+1
Photography (76 routes; 8.4% of evaluated network)	OHV-Open	76	55	-21	69	-7	75	-1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	21	+21	7	+7	1	+1
Hunting (33 routes; 3.6% of evaluated network)	OHV-Open	33	20	-13	29	-4	32	-1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	13	+13	4	+4	1	+1
Cultural/Fossil/Historical Exploration (31 routes; 3.4% of evaluated network)	OHV-Open	31	21	-10	27	-4	30	-1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	10	+10	4	+4	1	+1
Wildlife Watching (18 routes; 2% of evaluated network)	OHV-Open	18	18	-	18	-	18	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	-	-	-	-	-	-
Competitive Non-Motorized Event (16	OHV-Open	16	9	-7	12	-4	16	-
	OHV-Limited	-	-	-	-	-	-	-

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
routes; 1.8% of evaluated network)	OHV-Closed	-	7	+7	4	+4	-	-
Hiking (16 routes; 1.8% of evaluated network)	OHV-Open	15	12	-3	14	-1	14	-1
	OHV-Limited	1	1	-	1	-	2	+1
	OHV-Closed	-	3	+3	1	+1	-	-
Equestrian (14 routes; 1.5% of evaluated network)	OHV-Open	14	12	-2	12	-2	13	-1
	OHV-Limited	-	-	-	-	-	1	+1
	OHV-Closed	-	2	+2	2	+2	-	-
Rock Climbing (14 routes; 1.5% of evaluated network)	OHV-Open	14	12	-2	14	-	14	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	2	+2	-	-	-	-
Rockhounding / Fossil Collecting (14 routes; 1.5% of evaluated network)	OHV-Open	14	9	-5	11	-3	14	-
	OHV-Limited	-	1	+1	-	-	-	-
	OHV-Closed	-	4	+4	3	+3	-	-
Other (11 routes; 1.2% of evaluated network)	OHV-Open	10	2	-8	9	-1	9	-1
	OHV-Limited	1	1	-	1	-	1	-
	OHV-Closed	-	8	+8	1	+1	1	+1
BASE Jumping (7 routes; 0.8% of evaluated network)	OHV-Open	7	3	-4	3	-4	7	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	4	+4	4	+4	-	-
Backpacking (5 routes; 0.6% of evaluated network)	OHV-Open	5	5	-	5	-	5	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	-	-	-	-	-	-
Flatwater Canoe / Float Trips (5 routes; 0.6% of evaluated network)	OHV-Open	5	5	-	5	-	5	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	-	-	-	-	-	-
Slacklining (2 routes; 0.2% of evaluated network)	OHV-Open	2	2	-	2	-	2	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	-	-	-	-	-	-
Canyoneering (1 routes; 0.1% of evaluated network)	OHV-Open	1	1	-	1	-	1	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	-	-	-	-	-	-
Skydiving (1 routes; 0.1% of evaluated network)	OHV-Open	1	1	-	1	-	1	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	-	-	-	-	-	-	-

Table C.23: Number of Evaluated Routes Providing Primary Access to Recreation Destinations

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Recreation Destinations (160 routes; 17.6% of evaluated network)	OHV-Open	159	103	-56	143	-16	151	-8
	OHV-Limited	1	2	+1	5	+4	3	+2
	OHV-Closed	-	55	+55	12	+12	6	+6

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APPENDIX D ADDITIONAL POLICIES, STATUTES, AND GUIDANCE

In addition to the management plans and policies listed in Section 1.5, this project also considers the following:

- 2017 Settlement Agreement
- 43 CFR Part 8340: Off-Road Vehicles
- 43 CFR § 8364.1: Closures and Restrictions
- American Indian Religious Freedom Act of 1978 (42 USC 1996)
- BLM's 2001 National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands
- BLM's 2004 Manual 8100 – The Foundations for Managing Cultural Resources
- BLM's 2004 Manual 8110 – Identifying and Evaluating Cultural Resources
- BLM's 2008 National Environmental Policy Act Handbook (H-1790-1).
- BLM's 2012 Travel and Transportation Handbook (H-8342)
- BLM's 2015 Special Status Species Policy
- BLM's 2016 Travel and Transportation Management Manual (MS-1626)
- BLM's 2022 Cultural Resource Fieldwork Guidelines and Standards: BLM Supplement H-8110 – Utah[13]
- Federal Land Policy and Management Act
- Migratory Bird Treaty Act of 1918, as amended (16 USC 703 et seq.)
- National Historic Preservation Act, as amended (54 U.S.C. 100101)
- Noxious Weed Control Act of 1974, as amended (7 USC 2814)
- Noxious Weed Control Act of 2004 (PL 108-412)
- Public Rangelands Improvement Act of 1978 (43 USC 1901-1908)
- Taylor Grazing Act of 1934 (43 USC 315), as amended by the Act of 1937 (43 USC 1181d)

[13] This handbook supplements the BLM's Manual Series 8100 and has been updated from a previous H-8110 edition from 2002.

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APPENDIX E INTERDISCIPLINARY TEAM CHECKLIST

DETERMINATION OF STAFF: ***(Choose one of the following abbreviated options for the left column)***
NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA. The Rationale column may include NI and NP discussions.

The following elements are not present in the Moab Field Office and have been removed from the checklist: Farmlands (Prime or Unique), Wild Horses and Burros.

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NI	Air Quality & Greenhouse Gas Emissions	On-route travel has the potential to emit criteria air pollutants (NOx, SOx, CO, PM10, and PM2.5) and greenhouse gases (CO2, CH4, and N2O). Pollutants come from tailpipe emissions and fugitive dust from vehicle disturbance and wind erosion. Greenhouse gas emissions primarily come from vehicle tailpipes. Air pollutant and greenhouse gas emissions from the proposed alternatives are anticipated to be equal to or less than current emissions since the number of miles open for travel will be the same or less than what is currently open and no increase in visitors is expected, as a result of this action. An overall increase in visitors in the area is expected as that has been the trend in recent decades, however that increase in visitation is not directly or indirectly tied to this action. The BLM Utah 2018 Air Monitoring Report (https://go.usa.gov/xmDkx) identifies air quality within the Moab Field office as good. The area is classified as attainment or unclassified for all National Ambient Air Quality Standard pollutants. As emissions are not expected to increase as a result of this action, it is unlikely that the proposed alternatives would cause or contribute to an exceedance of air quality standards, or cause or contribute to local air quality issues. Therefore, air quality and greenhouse gases will not be discussed further in this EA. Note: The BLM Utah 2021 Air Monitoring Report shows no change to the air quality status in the Moab area. Thus, conclusions remain the same. (Vernon, August 25, 2021)	Erik Vernon	7/1/2019
PI	Areas of Critical Environmental Concern	Ten Mile Wash ACEC is within the TMA, as is a very small portion of the Long Canyon/Highway 279/Shafer Basin ACEC. The designation of routes in ACECs could pose an impact to their relevant and important values.	Katie Stevens	5/20/2019
NP	BLM Natural Areas	See Map 15 and 16 in the 2008 RMP. No BLM Natural Areas exist in the TMA.	Bill Stevens	8/8/19
PI	Cultural Resources	Existing survey and site data was used to consider impacts to cultural resources. Compliance with Section 106 of the NHPA will proceed as stipulated in the Programmatic Agreement among the Advisory Council on Historic Preservation, the Bureau of Land Management Utah, and the Utah	Lori Hunsaker	06/22/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		State Historic Preservation Office regarding the National Historic Preservation Act responsibilities for Travel and Transportation Management Undertakings (signed 2018).		
NI	Environmental Justice	No Environmental Justice populations have been identified in planning area. See https://headwaterseconomics.org/apps/economic-profile-system/49019 (accessed 8/1/2021).	Bill Stevens	5/21/2019
NI	Fire/Fuels Management	No effect anticipated from travel management.	Josh Relph	3/11/2019
PI	Floodplains	Impacts to floodplains primarily consist of loss of vegetation and geomorphic changes to bank angle, bank stability, increasing channel width, and in some cases creating artificial flow channels at or near route/stream intersections. Floodplain connectivity may be impaired due to increased erosion and channel downcutting resulting from accelerated flood velocities linked to loss of vegetation or soil compaction.	Gabe Bissonette	3/25/2019
NI	Geology/Mineral Resources/Energy Production	Subject to valid existing rights. See 2008 RMP. Access for mineral development activities would be authorized under a separate process.	Dave Pals	6/26/2020
PI	Invasive Species/Noxious Weeds	Roads act as vector pathways for the distribution of invasive species/noxious weed seeds. Additionally, roadside soil disturbance creates a niche for invasive/noxious weeds to germinate and establish often resulting in an increase in the presence and cover of invasive species. Roadways also provide access to treat existing and known noxious weed infestations.	Gabe Bissonette	8/21/2019
NI	Lands/Access	Subject to valid, existing rights. None of the alternatives will result in the loss of reasonable access to SITLA or other landowner parcels.	Lisa Wilkolak	5/20/2019
PI	Lands with Wilderness Characteristics	Several routes enter LWC. Their designation could affect WC qualities of naturalness, and/or outstanding opportunities for solitude and/or primitive and unconfined recreation.	Bill Stevens	5/21/2019
NI	Livestock Grazing	Livestock Grazing: Authorized access to range improvements (stock ponds, corrals, wells, etc.) were taken into consideration in route evaluations. Permittee access to range improvements would be authorized under any alternative and access would be maintained as authorized use.	Alan Bass	9/27/2019
PI	Migratory Birds	Analysis for raptors, including eagles, will focus on potential species that nest in the TMA, utilizing recommended USFWS spatial & seasonal nesting buffers for raptors.	Pam Riddle	8/21/2019
PI	National Historic Trails	The Old Spanish Trail NHT is along the northern boundary of the TMA.	Katie Stevens	5/20/2019
PI	Native American Religious Concerns	Section 106 Tribal Consultation is being completed as directed under 36 CFR 800.	Lori Hunsaker	06/22/2022
NI	Paleontology	A reasonable number of invertebrate fossils and plants may be collected in accordance with the 2008 RMP. Vertebrate fossils should not be disturbed. If paleontological resources are encountered, the activity should stop at the site and Moab BLM notified.	Dave Pals	7/02/2019

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NI	Plants: Threatened, Endangered, Candidate, or Special Status Species	Currently there are no known populations of federally listed plants that occur in the TMA. Geological formations that may support identified soil habitat needs occur in the TMA for the following list plants: • Jones cycladenia (Cycladenia humilis var. jonesii) – Threatened • Navajo sedge (Carex specuicola) – Threatened • San Rafael cactus (Pediocactus despainii) The USFWS Information for Planning and Consultation (IPaC) System provided preliminary information indicating potential for these three species in portion of the TMA due to general geological formation. Through consultation with the USFWS, the Moab BLM will identify habitat and occupancy potential and necessary conservation measures that are applicable to existing routes to ensure these three species are not affected to a degree that detailed analysis is required. In 2011 (updated 2014) a preliminary model for Jones cycladenia was developed (Sansom and Elliott 2012); ground-truthing is ongoing. This model predicts the "potential for new occurrences to be identified" and is based solely on specific elevations within approximately one mile from the Chinle, Cutler, and Summerville Formations. Due to exacting soil requirements much of these areas are not expected to provide suitable soil conditions. The nearest known occurrence of this species is 3.5 miles south of the TMA, located on a very steep, inaccessible slope where motorized and mechanized travel is not possible. Navajo sedge is only known to occur on the Navajo Nation, within Coconino County, Arizona and in the Natural Bridges area of San Juan County, Utah over 30 miles south of the TMA. Occupied habitats consist of hanging garden areas of piñon-juniper woodlands. It occurs primarily on steep slopes between 4,200-7,600 feet in elevation (USFWS 2014), often in areas of aeolian sandstone cliffs, and requires moist soils from seeps or springs. As of 2014, a total of 57 populations of the species were known to exist. Travel on designated routes pose little to no risk to Navajo sedge populations due to the inaccessibility of hanging gardens, the lack of designated routes in or near hanging gardens and the lack of known plants in the TMA. San Rafael cactus is only found in Emery County, Utah, over 35 miles to the west of the TMA. San Rafael cactus is restricted to limestone gravels, shales, clays and silty substrates of the Mancos, Morrison, Moenkopi, and Carmel formations.	Pam Riddle	6/16/2021
PI	Rangeland Health Standards	The Resources of Soils, Riparian, Vegetation/Habitat/T&E species, and Water Quality, which are the Utah Standards, are found	Alan Bass	9/27/2019

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		elsewhere in the checklist. **Each of these resources are analyzed under their component elements.** Depending on the range of affects to these resources by TMP alternatives, achieving rangeland health standards could be affected positively or negatively.		
PI	Recreation	The Labyrinth Rims/Gemini Bridges SRMA is a highly utilized recreation area, with numerous Focus Areas (RMZs). Visitation is well over one million people (representing about one-half million visitor days) per year, who come to pursue many types of activities, both motorized and non-motorized	Katie Stevens	5/20/2019
NI	Socioeconomics	Any impacts on socioeconomic resources would be very minor relative to the overall economy of the planning area. For a summary informing the determination of NI for Socioeconomics, see Appendix G: Estimated Economic Impact.	Bill Stevens	5/21/2019
PI	Soils	Routes in the TMA exist within areas containing saline soils, erodible soils, and biological soil crusts. OHV use can alter soil properties and influence sediment transport through dust or erosion. Designating routes in areas of less sensitive soils, including saline, erodible and biological soil crusts, would protect soil resources and would increase the soils' ability to support vegetation.	A.Vollmer	6/21/22
PI	Vegetation, Excluding Designated/Special Status Species	Blackbrush and salt desert scrub are the primary vegetative communities within the TMA, supporting a myriad of shrub, forb and grass species. Travel on designated routes protects vegetation outside of the road corridor from direct impacts of OHV use. Vegetation can be impacted from dust deposition, erosion, off-route travel, and soil compaction. In alternatives with route closures, vegetation would be allowed to reclaim the disturbed areas over time and less road surface would result in less impacts to vegetation.	Dave Pals	5/27/21
PI	Visual Resources	Much of the area is managed as VRM Class II.	Katie Stevens	5/20/2019
NP	Wastes (Hazardous or Solid)	No solid or hazardous wastes are present or expected to be generated during, or as a result of, the proposed alternatives.	Jennifer Whittington	06/30/2022
PI	Water Resources/Quality (drinking/surface/ground)	New or altered designations would be subject to a site-specific environmental analysis of the surface and ground waters in accordance with 2008 RMP.	Jennifer Whittington	06/30/2022
PI	Wetland/Riparian Zones	Use of routes located in riparian areas and stream/drainage bottoms can contribute to the loss of riparian vegetation, degrade stream banks, accelerate flood velocity, lead to increased erosion, and impair aquatic habitats (i.e., water quality/sedimentation/physical disturbance).	Gabe Bissonette	6/24/2019
PI	Wild and Scenic Rivers	The Green River, which forms the western boundary of the TMA, is a Wild and Scenic River as per Public Law 116-9.	Bill Stevens	5/20/2019
NP	Wilderness/WSAs	No congressionally designated wilderness areas exist in the TMA. There are no WSAs in the TMA.	Bill Stevens	5/21/2019

Determination	Resource/Issue	Rationale for Determination	Signature	Date
PI	Wildlife: BLM Sensitive Species	Routes occurring within the active channel or adjacent floodplains of perennial or seasonally inundated tributary reaches and/or confluence habitats, connected to the Green River, may impact nursery habitat for sensitive fish species through changes to water quality (increased sedimentation & salinity), changes to instream habitat and vegetative thermal cover, and trampling/crushing mortality. Sensitive fish species include: o Bluehead sucker (Catostomus discobolus) o Flannelmouth sucker (Catostomus latipinnis) o Roundtail chub (Gila robusta) Routes within suitable and potential habitats for BLM Sensitive Species habitats have the potential to impact current and potential occupancy status and will be analyzed in the EA. Sensitive species include: • Burrowing owl (Athene cunicularia) • Ferruginous hawk (Buteo regalis) • White-tailed prairie dog (Cynomys leucurus) • Kit fox (Vulpes macrotis) • Big free-tailed bat (Nyctinomops macrotis) • Spotted bat (Euderma maculatum) • Townsend's big-eared bat (Corynorhinus townsendii)	Gabe Bissonette, Pam Riddle	6/24/2019, 6/16/2021
PI	Wildlife: General Wildlife	The TMA supports big game and other general wildlife species. Routes occurring within wildlife habitat may impact wildlife behavior, habitat loss, and physical wellbeing. Species of concern in the TMA include desert bighorn sheep and pronghorn and analysis in EA will focus on those species.	Pam Riddle	8/21/2019
PI	Wildlife: Threatened, Endangered, Candidate, or Special Status Species	Routes occurring within the active channel or adjacent floodplains of perennial or seasonally inundated tributary reaches and/or confluence habitats, connected to the Green River, may impact nursery habitat for T&E fishes through changes to water quality (increased sedimentation & salinity), changes to instream habitat, and vegetative thermal cover, and trampling/crushing mortality. Species include: • Bonytail chub (Gila elegans) - Endangered • Colorado pikeminnow (Ptychocheilus lucius) - Endangered • Humpback chub (Gila cypha) - Endangered • Razor-backed sucker (Xyrauchen texanus) - Endangered Routes within suitable and potential habitats for listed bird species have the potential to impact current and potential occupancy status and will be analyzed in the EA. Species include: • Mexican spotted owl (Strix occidentalis lucida) - Threatened • Southwestern Willow Flycatcher (Empidonax traillii extimus) – Endangered • Western Yellow-billed cuckoo (Coccyzus americanus) – Threatened • California condor - Experimental and Endangered habitat – (NI: Non-essential,	Gabe Bissonette, Pam Riddle	6/24/2019, 6/16/2021

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		experimental status in Utah south of Interstate 70 and west of Highway 191 and outside of this area managed as endangered; the TMA contains both designations. No known occupancy in the TMA. Recovery Plan identifies illegal shooting, poisoning, habitat loss, and collisions with man-made structures as threats to condors and their habitats and three basic habitat needs: feeding habitat with adequate food, roosting sites, and adequate nesting sites. No new routes will occur in the proposed TMP and continued use of roads in the TMA will have no impact to basic habitat needs and will not provide for any additional threats; therefore, continued use on roads in the TMA will not affect California condor or its habitats to a degree that detailed analysis is required.) • USFWS consultation is ongoing.		
NI	Woodlands/Forestry	Woodlands would not be affected by changes in the routes available in this TMP.	Clark Maughan	8/20/2019

APPENDIX F MIGRATORY BIRDS OF PARTICULAR CONCERN

The list below was generated from the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) System (USFWS 2021) and is based on GIS data for TMA boundaries. It lists Migratory Bird Treaty Act species present or potentially present in the TMA that are of particular concern because they are on the Birds of Conservation Concern list or warrant special attention in the TMA.

Species
Black Rosy-finch (*Leucosticte atrata*)
Brewer's Sparrow (*Spizella breweri*)
Burrowing Owl (*Athene cunicularia*)
Clark's Grebe (*Aechmophorus clarkii*)
Golden Eagle (*Aquila chrysaetos*)
Grace's Warbler (*Dendroica graciae*)
Gray Vireo (*Vireo vicinior*)
Lesser Yellowlegs (*Tringa flavipes*)
Lewis's Woodpecker (*Melanerpes lewis*)
Marbled Godwit (*Limosa fedoa*)
Olive-sided Flycatcher (*Contopus cooperi*)
Pinyon Jay (*Gymnorhinus cyanocephalus*)
Rufous Hummingbird (*Selasphorus rufus*)
Virginia's Warbler (*Vermivora virginiae*)
Willow Flycatcher (*Empidonax traillii*)

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APPENDIX G ESTIMATED ECONOMIC IMPACT

This Appendix presents a scenario of the estimated economic impact of route closures which may result from adoption of the Labyrinth/Gemini Bridges TMP. This scenario relies on conservative assumptions and represents what might be labeled a "worst-case scenario" from the point of view of motorized users visiting Grand County.

Assumptions for this analysis:

- OHV enthusiasts are primarily interested in recreation opportunities afforded by minimally maintained routes, many of which are classified by Grand County and the State of Utah as Class D routes.
- BLM adopts the most restrictive alternative (Alternative B) in the TMA, resulting in the closure of 32.3% of minimally maintained routes.
- Overall visitation to the affected area continues at 2019 levels for dispersed recreation (i.e., excludes visitation to the four BLM campgrounds and developed sites such as the Bar M mountain bike area and several dinosaur-related sites). In FY 2019, dispersed recreation to the TMA totaled 379,171 visitor days.
- If the Class D routes identified in Alternative B were closed, users of those routes would not substitute other routes and instead would choose not to visit Moab BLM. This economic impact would be permanent and would not be replaced by spending from other visitors. As described in the EA, the BLM does not believe that this would occur; this assumption is included only to provide the "worst case" scenario from the OHV user perspective.
- The percentage of visitors using primitive roads in the Labyrinth/Gemini TMA have OHV activity as their primary activity in the same proportion as all other visitors to locations throughout the Moab BLM.
- Spending profiles for OHV visitors are similar to the overall spending profiles that the Moab BLM has developed for all recreation visitation to Moab BLM.

Based on these very conservative assumptions, BLM estimates that 7,348 visitor days would be "lost" to the overall Moab area economy if Alternative B is selected. This represents 0.39% of the estimated 1,894,393 visitor days recreating on Moab BLM lands in FY2019. Using IMPLAN economic impact software, this reduction in visitation would result in the following:

Table G.1: Visitor days and associated spending "lost" as a result of Alternative B

visitor days=7,348				
	Employment	*Labor Income*	*Value Added*	*Output*
Direct Effect	12.0	$369,663	$582,630	$961,486
Indirect Effect	2.0	$68,700	$112,258	$267,152
Induced Effect	2.5	$59,104	$123,614	$220,958
Total Effect	**16.5**	**$497,467**	**$818,502**	**$1,449,596**

Contrasting this with the impact on the local economy from all recreation on Moab BLM lands indicates how minor this impact would be.

Table G.2: Visitor days and associated spending in Moab Field Office

visitor days=1,894,393				
	Employment	*Labor Income*	*Value Added*	*Output*
Direct Effect	2,839.8	$95,302,806	$150,208,198	$247,880,778
Indirect Effect	502.8	$17,711,588	$28,941,334	$68,874,555
Induced Effect	386.8	$15,237,469	$31,868,920	$56,965,034
Total Effect	**3,729.4**	**$128,251,863**	**$211,018,452**	**$373,720,367**

The assumptions of this analysis are very conservative; actual economic losses (if any) would likely be much less than shown above, should the authorized officer select other than Alternative B.

APPENDIX H CONFORMANCE TO SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT THROUGH THE TRAVEL AND TRANSPORTATION PROGRAMMATIC AGREEMENT

Introduction:

The 2018 *Programmatic Agreement among the Advisory Council on Historic Preservation, the Bureau of Land Management – Utah, and the Utah State Historic Preservation Office Regarding National Historic Preservation Act Responsibilities for Travel and Transportation Management Undertakings* (Travel PA) was developed and signed to "establish greater clarity in how BLM-Utah's travel and transportation management undertakings should make "a reasonable and good faith" effort to identify historic and traditional cultural properties in accordance with 36 CFR 800.4(b)(1)." The Travel PA also establishes BLM-Utah's procedures towards comprehensively meeting its obligations under 36 CFR Part 800 to identify, evaluate, and resolve potential adverse effects to historic properties (including traditional cultural properties) for travel and transportation management undertakings. To illustrate BLM's adherence to the stipulations of the Travel PA, Table H.1, below, lists the requirements of the Travel PA and summarizes BLM's efforts to adhere to those requirements.

Table H.1: Stipulations of the Travel PA and the BLM's Actions to Adhere to those Requirements

Travel PA and the 2017 Settlement Agreement	Process for Completing these Requirements
Identifying Areas of Potential Effects (APEs) for OHV Route Designations - Travel PA Stipulation III.A.1.b. Under this stipulation the BLM must invite and seek consulting party (including the SHPO) input when defining the width of the APE and seek any additional cultural resources information a consulting party wishes to share.	The BLM initiated consultation with the State Historic Preservation Office (SHPO) in January 2020 and requested concurrence on a proposed list of consulting parties, which included ten tribes and nine other potentially interested parties. The SHPO concurred with the proposed list of consulting parties. In February 2020, BLM initiated consultation with the ten tribes and invited nine additional potentially interested parties to participate in the Section 106 process. Five of the non-tribal interested parties requested to participate in the Section 106 process. The 2008 RMP does not allow for off-route travel, so BLM proposed to use the 15-meter corridor on either side of the routes within the TMA as the Area of Potential Effect. In the Labyrinth/Gemini Bridges TMA, this area totals 13,445.4 acres. In addition, the BLM proposed to consider known sites up to a ¼ mile away from the centerline for potential indirect and cumulative effects that may potentially result from this undertaking. This area encompasses 246,433.8 acres. Because this is in accordance with Stipulation III.1.b of the Travel PA, the BLM did not specifically consult with the SHPO. BLM sought input regarding the proposed Area of Potential Effect and requested any additional information from the fifteen consulting parties in October 2021. The BLM received responses from two tribes and four non-tribal consulting parties.

Travel PA and the 2017 Settlement Agreement	Process for Completing these Requirements
Travel PA Stipulation III.A.2. Literature Reviews and Cultural Resource Potential Maps for Open OHV Area and OHV Route Designations Under this stipulation the BLM must complete and/or update a literature review and cultural resource potential map. BLM must also invite and seek consulting party comments regarding these identification efforts.	A Class I Inventory was completed in 2016. Updated literature reviews are ongoing, and BLM expects to consult with the SHPO, tribes, and other consulting parties in Winter of 2022.
Travel PA Stipulation III.A.4.b Class III Surveys for OHV Route Designations Prior to approving OHV route designations, BLM will complete Class III surveys within all routes or portions of routes that are located within a cultural resource potential map's identification of a high potential cultural resource area. **2017 Settlement Agreement Stipulations 24 (b)(ii) and (c), – Class III survey in certain ACECs and Class III surveys in high potential areas** Prior to approving a TMP within certain ACECs the BLM must conduct Class III survey along all routes or portions of routes that are designated as open. The 2017 Settlement Agreement also requires Class III survey along all routes or portions of routes that are located in areas of high cultural resource potential that the BLM has identified in a Class I cultural resource inventory. ***Travel PA Stipulation IV.D. Stipulation Adverse Effects (36 CFR 800.5)*** Under this stipulation, the BLM must invite and seek consulting party input regarding BLM-Utah's finding of adverse effect.	A Class III survey was conducted in 2017 (U17LI1000). Eligibility determinations for newly recorded sites and revisited sites were sent to the SHPO on 3/11/2021. The SHPO concurred with the BLM's determinations of eligibility. BLM has determined that additional survey is necessary to comply with the Settlement Agreement and the Travel PA. BLM hopes to complete this survey in Fall of 2022. No finding of effect has been made because identification efforts are still ongoing.
Travel PA Stipulation III.A. 3. Site Revisits for Open OHV Areas and OHV Route Designations Site revisits serve as a component of BLM's efforts to identify historic properties for undertakings that would designate OHV routes.	BLM has been engaged with site revisit efforts since 2015. The information is being compiled and will be incorporated into the identification efforts and a report will be sent to the SHPO. This identification information will also be considered when BLM makes a determination of a finding of effect.
Travel PA Stipulation III.B.1 Determining the Need for Phased Class II Surveys for Travel Management Plans This stipulation requires that the BLM invite and seek consulting party input regarding the need to conduct additional cultural resource surveys after the TMP has been approved.	Some Class II survey was completed as part of the 2017 survey (U17BL1000). BLM is not anticipating any additional Class II survey and will seek consulting party input in Winter of 2022.

Travel PA and the 2017 Settlement Agreement	Process for Completing these Requirements
Travel PA Stipulation V. Resolution of Adverse Effects Through Historic Property Treatment Plans BLM's resolution of adverse effects from the approval of the TMP are to be accomplished through the development of Historic Properties Treatment Plans (HPTP). BLM must provide an opportunity for SHPO, Indian tribes and consulting parties an opportunity to provide input on the HPTP.	No finding of effect has been determined. If BLM determines that effects to sites cannot be avoided or minimized and that route designations will result in an adverse effect, the BLM will prepare an HPTP and consult with the SHPO and other consulting parties.

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APPENDIX I ROUTE REPORTS

Following completion of the travel route inventory and adjustments to existing BLM GIS data, a BLM IDT and cooperators met for several planning sessions to systematically review and evaluate each of the inventoried travel routes. During route evaluation, the BLM IDT used the ARS Route Evaluation software and GIS to systematically review, discuss, and document each route's location, physical characteristics, current management, operation and maintenance, authorized and permitted uses, public uses, associated biomes, all known natural and cultural resources, proximity to resources of concern, specially designated areas, and resource issues. Each intensive evaluation session included ongoing interactive IDT and cooperator discussions of each route's resource and resource use concerns, as well as any route-specific public scoping information and Cooperator input available at the time of the evaluation process.

For each route, the IDT also considered and addressed the 43 CFR § 8342.1 Designation Criteria, selecting applicable rationale demonstrating how the route would minimize impacts for each of the route's preliminary alternative designations. The process resulted in extremely thorough data capture, produced a preliminary range of reasonable designation alternatives for each route based on the alternative themes, and created a complete record of the process as documented in the route reports.

The full collection of route reports is available on the BLM's ePlanning site. Route reports provide a record of the IDT's evaluation of each route identified during the route inventory. The header of each page of a route report displays the number that was used to identify the route during evaluation (e.g., D2763b). The number placed on published maps and used on route signs may not be the same. Each route report includes three sections: "General Background," "Evaluation Information," and "Designation Alternatives."

General Background

The first part of the "General Background" section of a route report shows the route's evaluation session date, the name of the session's contracted facilitator (in this case, planners working for BLM's contractor), and the BLM resource specialists (biologists, archaeologists, recreation planners, etc.) responsible for evaluation of the route. The second part of the "General Background" section provides physical information about the route such as length, width, use, jurisdictions over which it passes, and origin (if known). This section also discloses the level of maintenance a route receives, if any. Routes that are noted as *bladed* or *regularly maintained* are likely to see a higher level of use and, because they are bladed and tend to be wider as a result of routine blading, minimize the need for vehicles to travel off-route for the purposes of passing or parking. Routes that are *minimally* (i.e., *infrequently*) *maintained* or for which no maintenance is recorded in the route report may occasionally receive light maintenance but tend to be narrower user-created two-track type routes. Other information may also be included along with citizen comments and proposals, as applicable.

SAMPLE Route Report for D2763b

Facilitator(s): Cam Gale **Initial Evaluation Date:** 5/13/2019

Evaluators:
Pam Riddle, Wildlife Biologist
Ashley Losey, Archaeologist
Greg Halliday, Grand County Council
David Williams, Range Conservationist
Todd Murdock, Outdoor Recreation Planner (Permits)
David Pals, Geologist
Jonathan Jew, Land law examiner
Gabe Bissonette, Aquatic Ecologist
Katie Stevens, Outdoor Recreation Planner
Doug Wight, GIS Specialist
Bill Stevens, ORP - Wilderness/WSA/LWC
Bill Jackson, Grand County Roads
Bryan Torgerson, Representative, SITLA
Stephanie McKinney, Assistant Field Office Manager

TMA:	Labyrinth Canyon/Gemini Bridges			
Length: 0.84 mi.	**Width:** Dual Track	**Class:**	Primitive Roads	**Use Level:** Low
Route Type(s):	Connector			
Surface:	None identified by IDT	**Maintained:**	None identified by IDT	
Origin:	None identified by IDT	**Constructed:**	None identified by IDT	
Jurisdictions:	BLM			

Additional Information: None.

General Evaluation Questions

Does this route:	
• either wholly or in part, have a right-of-way grant or is it simply an officially-recognized route maintained by a county or another government agency?	**NO**
• provide commercial, private property, or administrative access, e.g., via permit, ingress/egress rights or other jurisdictional responsibility?	**YES**
• provide a principal means of connectivity within a Travel Management Area or Management Zone?	**NO**
• exist as a result of a previous agency land use or implementation-level planning document decision and is managed as a transportation facility asset?	**NO**
• provide an important linkage between Travel Management Areas or Management Zones?	**NO**
Does this route provide network connectivity that contributes to recreational opportunities, access to specific recreation sites, public safety, or other public multi-use access opportunities enumerated in agency Organic laws?	**YES**
Might the continued use of this route potentially impact:	
• State or Federal special status species or their habitat?	**YES**
• cultural or any other specially-protected resources or objects identified in Agency planning documents?	**YES**
• any special area designations, e.g., National Monuments?	**YES**
• any other resources of concern?	**NO**
Can the anticipated potential impacts to the identified resources be avoided, minimized, i.e., reduced to acceptable levels, or be mitigated?	**YES**
Can the commercial, private property, recreation or public uses of this route be adequately met by another route or routes that may minimize impacts to the resources identified as part of this evaluation or that may minimize cumulative effects on various other resources?	**NO**

Evaluation Information

Introduction

Evaluation information in a route report is divided into three colored boxes that address the topics of commercial, administrative, property, and economics (yellow); public uses (blue); and special resource concerns (green).

Commercial, Administrative, Property, and Economics

The first part of the "Evaluation Information" section focuses on commercial, administrative, property, and economic issues. In this section, a listing of facilities and access is provided. There are three types of access identified:

- Primary = Main access
- Alternate = Secondary or backdoor access
- Link = Route necessary for use of the primary access

Evaluation Information

Commercial, Administrative, Property and Economics

The following items help to identify the purpose and need of this route. This route provides access to the following facilities and/or jurisdictions for the purpose of carrying out administrative and/or authorized operations or for jurisdictional access.

Primary Access *(leads directly to the listed jurisdiction or facility, and IS the main route used for access)*

Type	Description
Range Facilities	Active Allotment
Mineral Facilities	Known Potash Lease Area

Alternate Access *(leads directly to the listed jurisdiction or facility, but IS NOT the main route used for access)*

Type	Description
None identified by IDT	

Link Access *(does not lead directly to the listed jurisdiction or facility, but is required to access a primary access route)*

Type	Description
None identified by IDT	

Public Uses

The second part of the "Evaluation Information" section focuses on public uses and provides a list identifying the facilities, modes of transportation, and activities associated with the route. If a facility, mode of transportation, or activity was not identified as associated with the route, it is not listed. As in the Commercial, Administrative, Property, and Economics section, facility access is listed using the categories of "Primary," "Alternate," and "Link." Mode of transportation and activity are indicated by:

- Primary = Main mode or activity on the route
- Secondary = Other common modes and activities
- Infrequent = Uncommon modes or activities

Recreational Uses

The following items help to identify the purpose and need of this route. This route:

- provides public travel access to the listed recreation sites using the listed travel modes, and/or
- provides for recreational activity and experience opportunities in the area, and/or
- provides important route network connectivity for recreational access between two or more other routes.

Primary Access/Uses *(main route used to access the destinations or use activities listed)*

Type	Description
Activities	Motorcycling
	Jeeping/4-Wheeling
	Scenic Driving
Modes of Transportation	Stock 4 Wheel Drive
	UTV/ATV
	Motorcycle

Alternate Access / Secondary Uses *(used to access the destinations or use activities listed, but not considered the main route)*

Type	Description
None identified by IDT	

Link Access / Infrequent Uses *(rarely used to access the destinations or use activities listed)*

Type	Description
None identified by IDT	

Resource and Resource Use Issues

The third part of the "Evaluation Information" section focuses on special resource concerns. General issue questions for special resource concerns are answered. Then resources and concerns are identified. These are grouped into general categories such as:

- Biome
- Special status animals
- Managed species
- Resource issues, etc.

In the "Special Resource Concerns" box, routes are characterized as:

- In = Route or a portion of the route is in the resource area or area of concern
- Leads To = Route provides access to the resource area or area of concern but is not in the resource or area
- Crosses = Route crosses the resource (e.g., a route crossing a stream or a cultural site directly on the route)
- Prox = Proximate to; the route is near the resource or area of concern as indicated by the:
- Dist = Proximate distance

Resource and Use Issues

The following items help to identify potential natural and cultural resource issues associated with the location and use of this route. This route is located in, leads to, crosses, or is within a set distance of the following resources or issues.

Resource Type	Description
Biomes	In Blackbrush
	In Riparian/Wetlands
Special Status Plants	In Jones cycladenia modeled potential habitat
	Crosses Navajo sedge potential geology
VRM	In VRM Class II - Retain existing character
Special Management Areas	In Wild and Scenic River (Suitable)
	In SRMA - Special Recreation Management Area
	In BHCA - Bird Habitat Conservation Area
	In Recreation Management Zone
Water Resources	In Riparian/Wetland
	Within 1/4 mile of Major river
Misc. Resources	In Erosive Soil - High Potential
	In High-Use Filming Location

Note: *Specific sensitive resources, such as cultural resources, paleontological resources, or threatened or endangered species are not listed in this report for their protection, but were considered during the evaluation of this route.*

Designation Alternatives

The route report also contains the IDT's evaluation of alternative designations for each route. Alternative A (No Action/Current Management) simply states the current management of a route and its area designation (no color). The action alternatives (Alternatives B, C, and D in this example) are color-coded to "Open w/Management" or "Open" (green), "Limited w/Management" or "Limited" (orange), and "Closed" (pink).

For Open and Limited designations, "w/ Management" indicates that there are types of limitations, and that there would be adaptive management or other specific mitigation, maintenance, and/or monitoring that was identified during evaluation. The "w/ Management" portion of Limited and Open designation labels are route specific; it is not used in designation labels found earlier in this document. If there is management assigned to the selected designation for the route, that management will be required as part of the TMP.

Limited alternatives include specific limitations regarding route use (e.g., limited by season, vehicle width, etc.). For Closed alternatives, information is provided about how routes would be closed/decommissioned. Also, if a route is redundant to another route, that is specified.

The Designation Alternatives also documents how the BLM IDT assessed the manner in which each potential route designation within the TMA is consistent with 43 CFR § 8342.1.

Potential Alternative Route Designations

Alternative A (Current Management, No Action Alternative)

Area Designation:
Limited to Designated Routes

Route Designation:
Open

Specific designations by user type:

OHV Public:	**Designation per 43 CFR § 8342.1: Open** - The public may use this route by all motorized modes of transportation, year-round.
Non-motorized Public:	The public may use this route by all non-motorized modes of transportation, year-round.
Authorized/Permitted Users:	Authorized users may use this route by all modes of transportation, year-round. *Additional users may be authorized by the BLM through future authorizations.*
Administrative/Official Users:	All Federal, State and Local agencies may use this route by all modes of transportation, year-round.

Alternative B

Comprehensive Designation:
CLOSED
This route will be decommissioned and not managed as a BLM transportation asset. Unless otherwise signed, cross-country foot and animal use is allowed in the area.

OHV Public: Designation per 43 CFR § 8342.1: Closed

Specific Designation Criteria Addressed and Relevant to Route Issues:

- 43 CFR § 8342.1 (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- 43 CFR § 8342.1 (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
- 43 CFR § 8342.1 (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

How Designation Addresses Criteria Above: Closing this route, along with natural reclamation, would reduce visual contrast created by the route. Closing this route would contribute to retaining or restoring vegetation and soil cover, minimizing the potential for soil erosion. Closing this route would reduce overall impact of vehicle use and route footprint in the area. Closing this route would enhance wildlife movement by reducing fragmentation. Closing this route would eliminate motorized use, minimizing the potential for harassment of wildlife. Closing the route would minimize the potential for conflicts between off-road vehicle users and dispersed, non-motorized/non-mechanized forms of recreation.

Designation Criteria Addressed but Not Relevant to Route Issues:
(no known conflicts among users or no known resource concerns to minimize for)

- *43 CFR § 8342.1 (d)*

Closure Method: Sign Closed; Natural rehabilitation

Alternative C

Comprehensive Designation:
LIMITED W/ MANAGEMENT

Comprehensive Designation Type:
This designation limits the modes of transportation that can be utilized by the public on this route.

Vehicle limits by user type:

OHV Public: **Designation per 43 CFR § 8342.1: Limited** - Public motorized use is limited to single-track vehicles, year-round.

Non-motorized Public: The public may use this route by all non-motorized modes of transportation, year-round.

Authorized/Permitted Users: Currently authorized users may use this route by all modes of transportation, year-round.
Additional users may be authorized by the BLM through future authorizations.

Administrative/Official Users: All Federal, State and Local agencies may use this route by all modes of transportation, year-round.

Designation Criteria Addressed and Relevant to Route Issues:

- 43 CFR § 8342.1 (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- 43 CFR § 8342.1 (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
- 43 CFR § 8342.1 (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

How Designation Addresses Criteria Above: Limiting motorized access on this route would minimize potential for impacts to wildlife habitats. By limiting motorized access on this route, traffic volume in the area would be reduced, minimizing the potential for harassment of wildlife. By limiting motorized access on this route, traffic volume in the area would be reduced, minimizing the potential for impacts to sensitive plant species. By limiting vehicle width to single-track width or less, the potential for conflicts between OHV users of different vehicle types would be minimized.

Designation Criteria Addressed but Not Relevant to Route Issues:
(no known conflicts among users or no known resource concerns to minimize for)

- 43 CFR § 8342.1 (d)

Potential Management Actions:

Maintenance: Signing - Directional
Mitigation: Signing - Regulatory

Potential management actions may be incorporated with an overall monitoring strategy that would assess the status and/or integrity of the potentially impacted sensitive resource or resource issues identified as they relate to various external factors, e.g., climate cycles, exotic species introduction, visitor use levels (type, intensity, and season of use), etc. Monitoring data that indicate a decline in resource integrity or reveal methods of mitigation that proved to be unsuccessful would then trigger adaptive and appropriate responses aimed at restoring integrity or successfully mitigating undesirable conditions.

Alternative D

Comprehensive Designation:
OPEN W/ MANAGEMENT

Specific designations by user type:

OHV Public: **Designation per 43 CFR § 8342.1: Open** - The public may use this route by all motorized modes of transportation, year-round.

Non-motorized Public: The public may use this route by all non-motorized modes of transportation, year-round.

Authorized/Permitted Users: Authorized users may use this route by all modes of transportation, year-round.
Additional users may be authorized by the BLM through future authorizations.

Administrative/Official Users: All Federal, State and Local agencies may use this route by all modes of transportation, year-round.

Designation Criteria Addressed and Relevant to Route Issues:

- 43 CFR § 8342.1 (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- 43 CFR § 8342.1 (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.

How Designation Addresses Criteria Above: Allowing continued use of this route would minimize potential impacts to documented resources by concentrating motorized use (rather than dispersing it) on an alignment capable of accommodating the route's anticipated traffic volume. Continued use of this route with the added application of specific management prescriptions, would minimize potential impacts to documented resources.

Designation Criteria Addressed but Not Relevant to Route Issues:
(no known conflicts among users or no known resource concerns to minimize for)

- 43 CFR § 8342.1 (c)
- 43 CFR § 8342.1 (d)

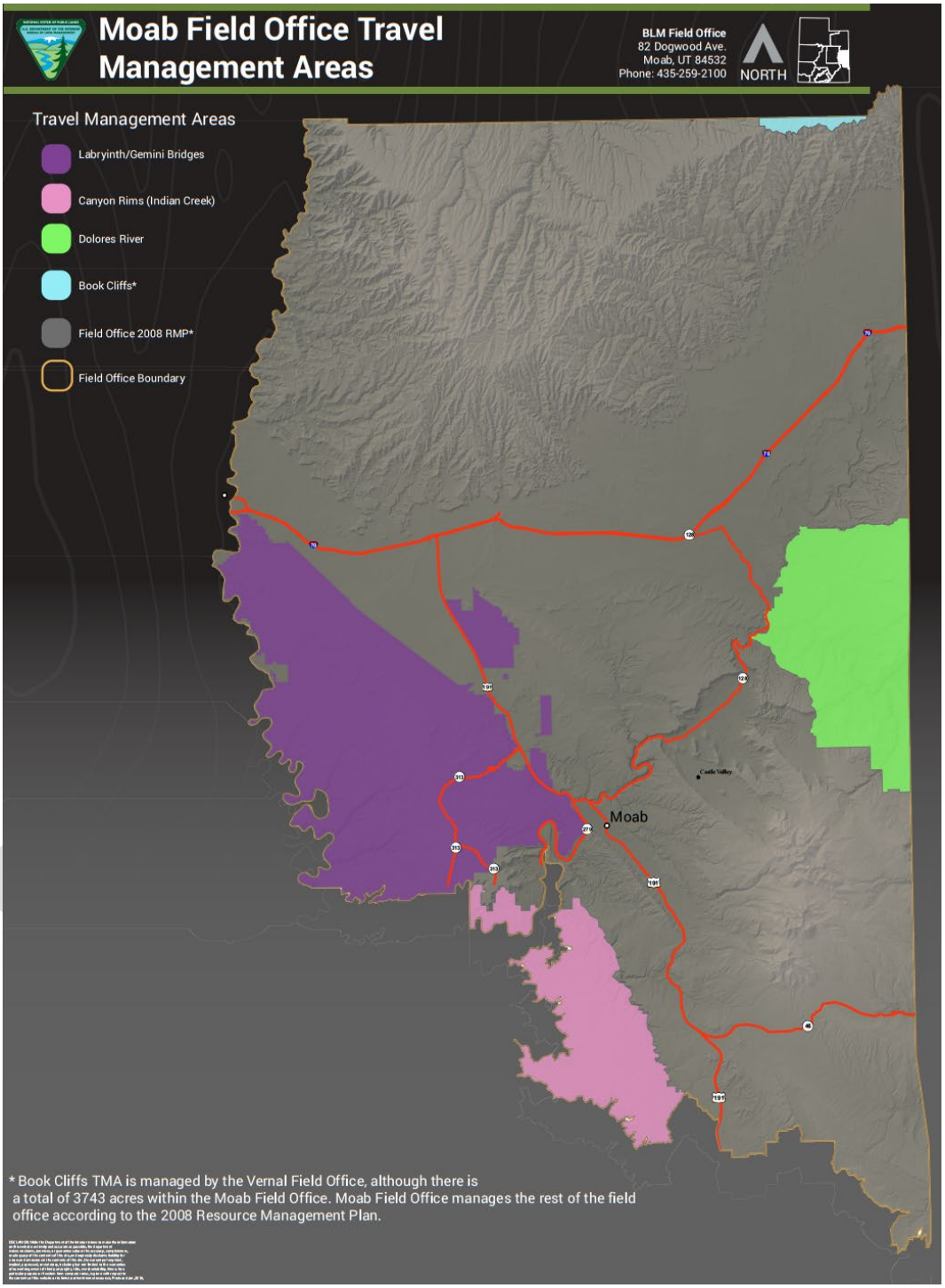
Potential Management Actions:

Maintenance: Signing - Directional
Mitigation: Signing - Regulatory

Potential management actions may be incorporated with an overall monitoring strategy that would assess the status and/or integrity of the potentially impacted sensitive resource or resource issues identified as they relate to various external factors, e.g., climate cycles, exotic species introduction, visitor use levels (type, intensity, and season of use), etc. Monitoring data that indicate a decline in resource integrity or reveal methods of mitigation that proved to be unsuccessful would then trigger adaptive and appropriate responses aimed at restoring integrity or successfully mitigating undesirable conditions.

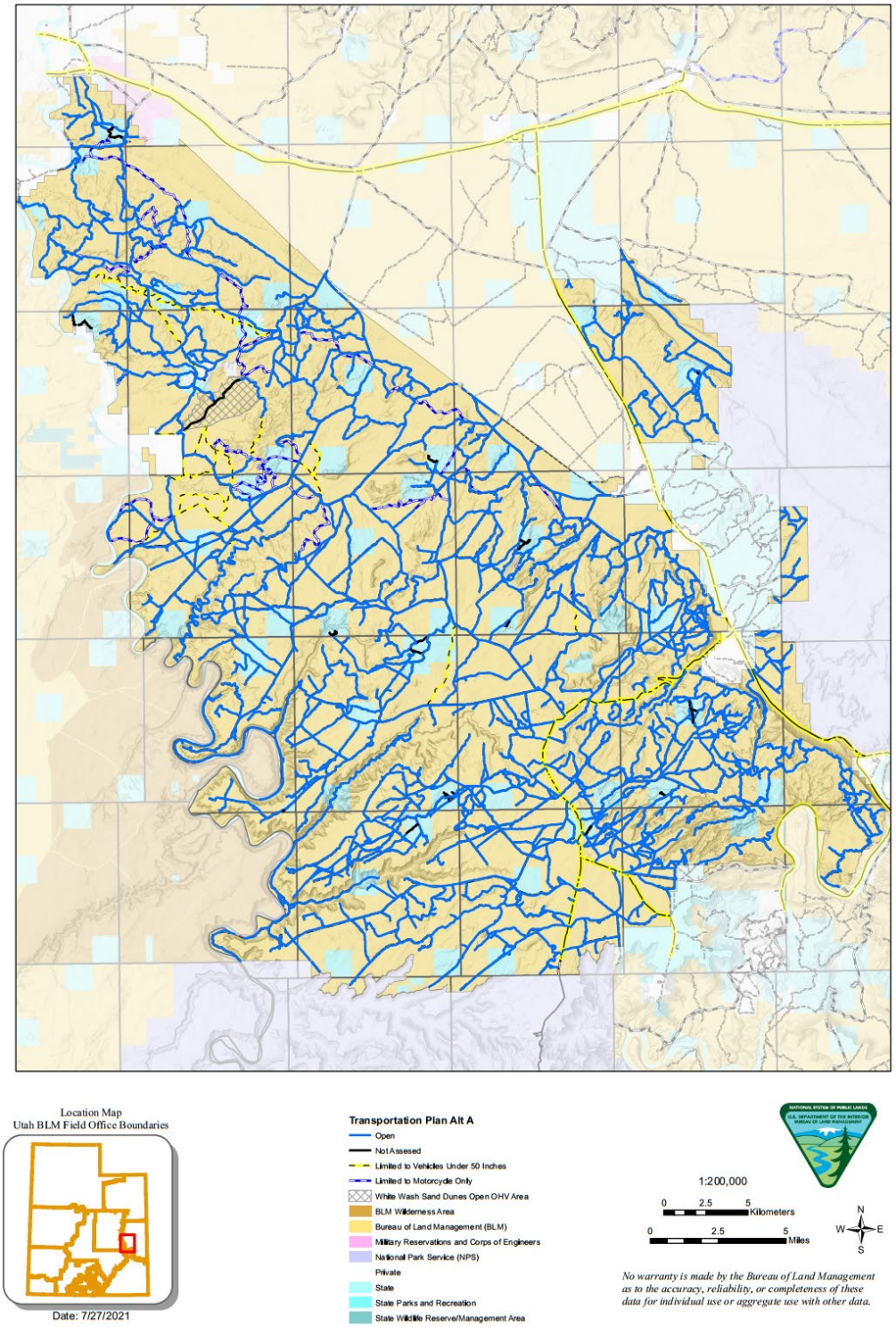
APPENDIX J MAPS

J.1 MAP 1: MOAB FIELD OFFICE TMAS

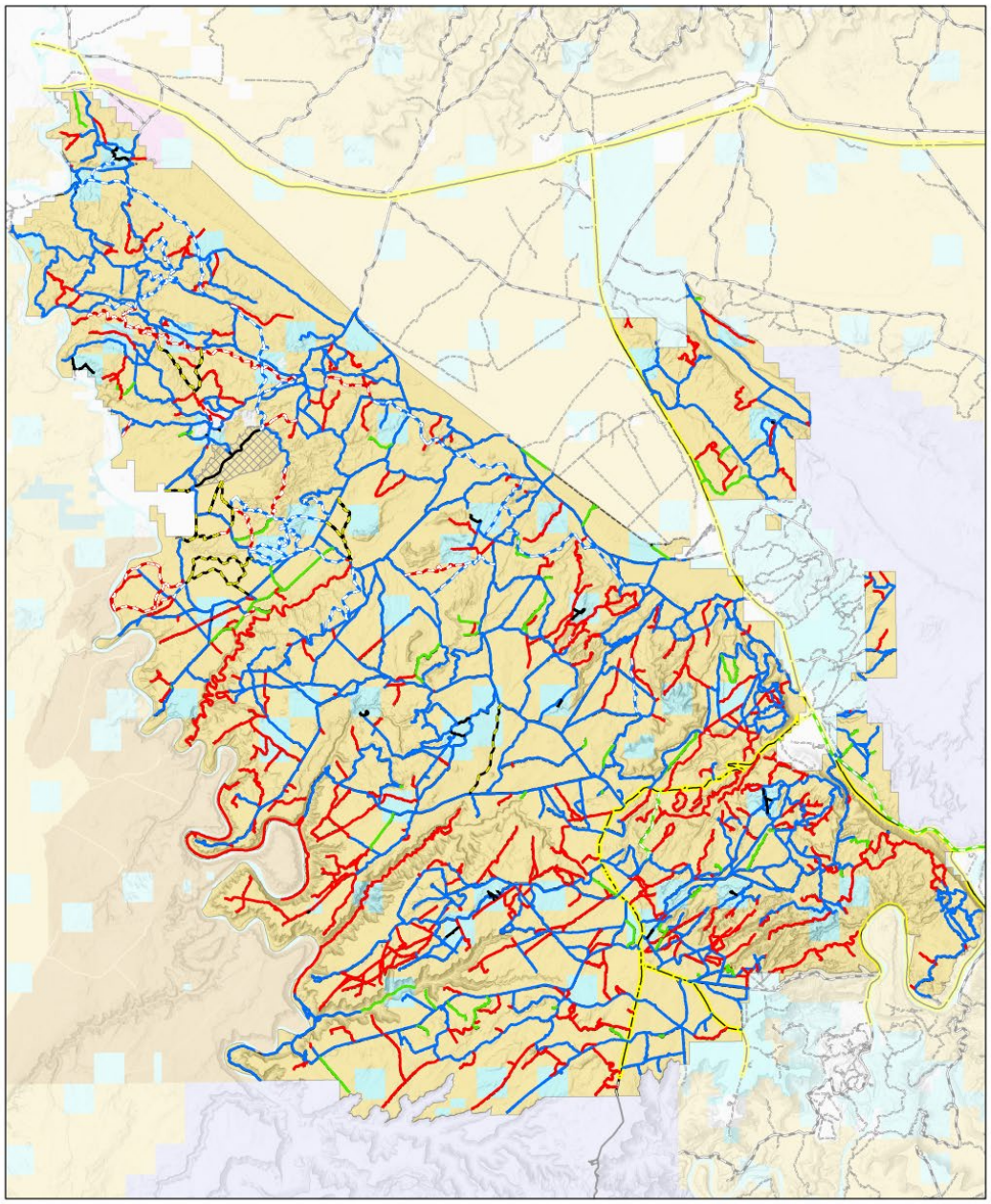


J.2 ALTERNATIVE ROUTE NETWORKS

J.2.1 MAP 2: ALTERNATIVE A



J.2.2 MAP 3: ALTERNATIVE B



Location Map
Utah BLM Field Office Boundaries

Date: 2/9/2022

Full-Sized Vehicle Transportation Plan Alt B
- Open
- Administrative and authorized use only
- Closed
- Not Assessed (Non-BLM Route)

Other Vehicle Transportation Plan Alt B
- Limited w/ Management to TransSingleTrack
- Limited to Vehicles Under 50 Inches
- Limited, Class I E-bikes Only
- Closed
- White Wash Sand Dunes Open OHV Area
- BLM Wilderness Area
- Bureau of Land Management (BLM)
- Military Reservations and Corps of Engineers
- National Park Service (NPS)
- Private
- State
- State Parks and Recreation
- State Wildlife Reserve/Management Area

1:200,000

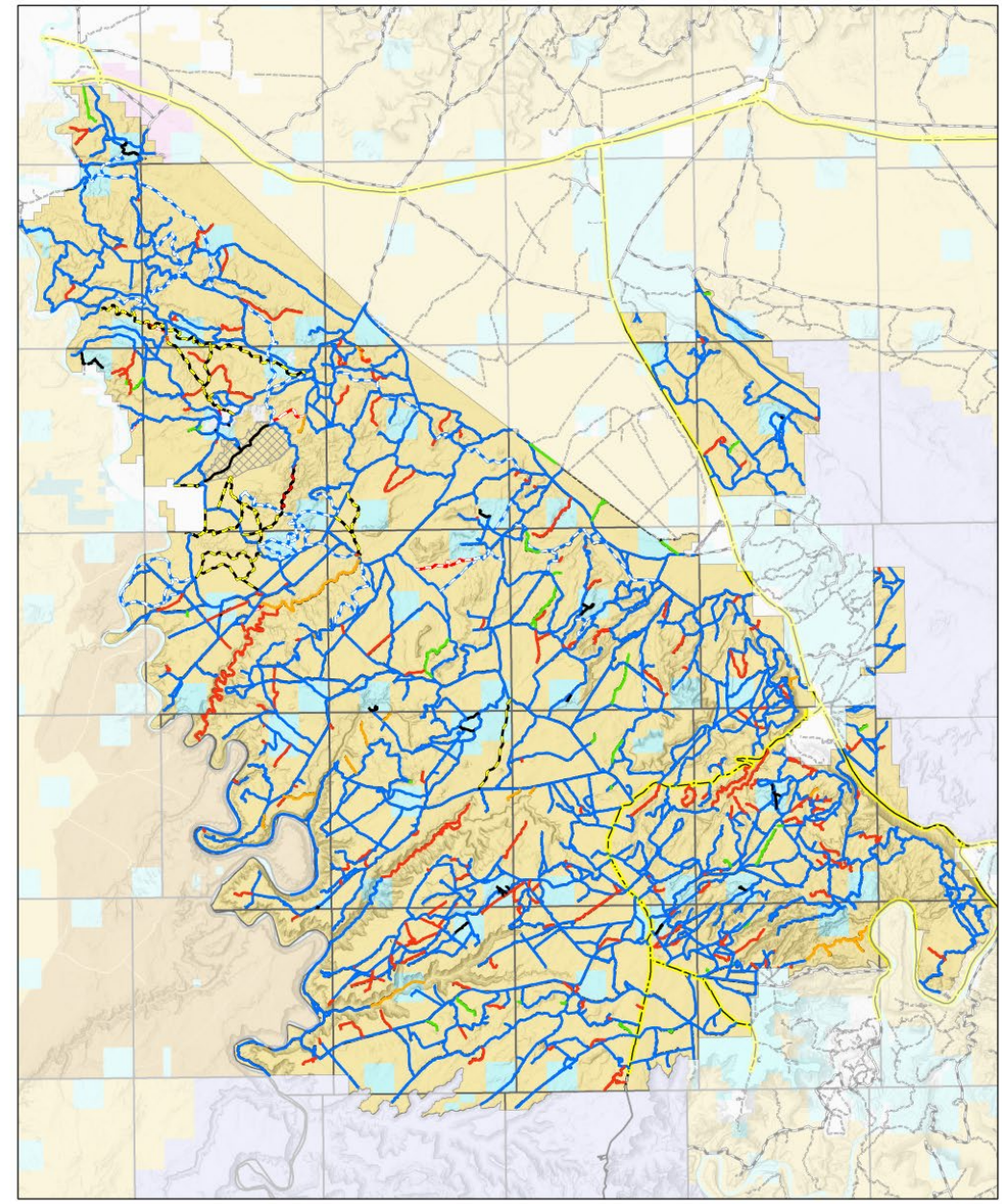
0 2.5 5 Kilometers

0 2.5 5 Miles

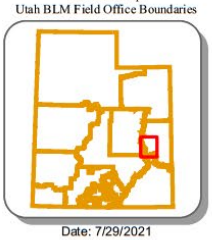
N W E S

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

J.2.3 MAP 4: ALTERNATIVE C



Location Map
Utah BLM Field Office Boundaries



Date: 7/29/2021

Full-Sized Vehicle Transportation Plan Alt C
- Open
- Administrative and authorized use only.
- Seasonal Closure
- Closed
- Not Assessed (Non-BLM Route)

Motorcycle ATV Transportation plan Alt C
- Limited to Vehicles Under 50 Inches
- Limited to Motorcycle Only
- Limited to Vehicles Under 50 Inches (Seasonal Closure)
- Closed
- White Wash Sand Dunes Open OHV Area
- BLM Wilderness Area
- Bureau of Land Management (BLM)
- Military Reservations and Corps of Engineers
- National Park Service (NPS)
- Private
- State
- State Parks and Recreation
- State Wildlife Reserve/Management Area

1:200,000

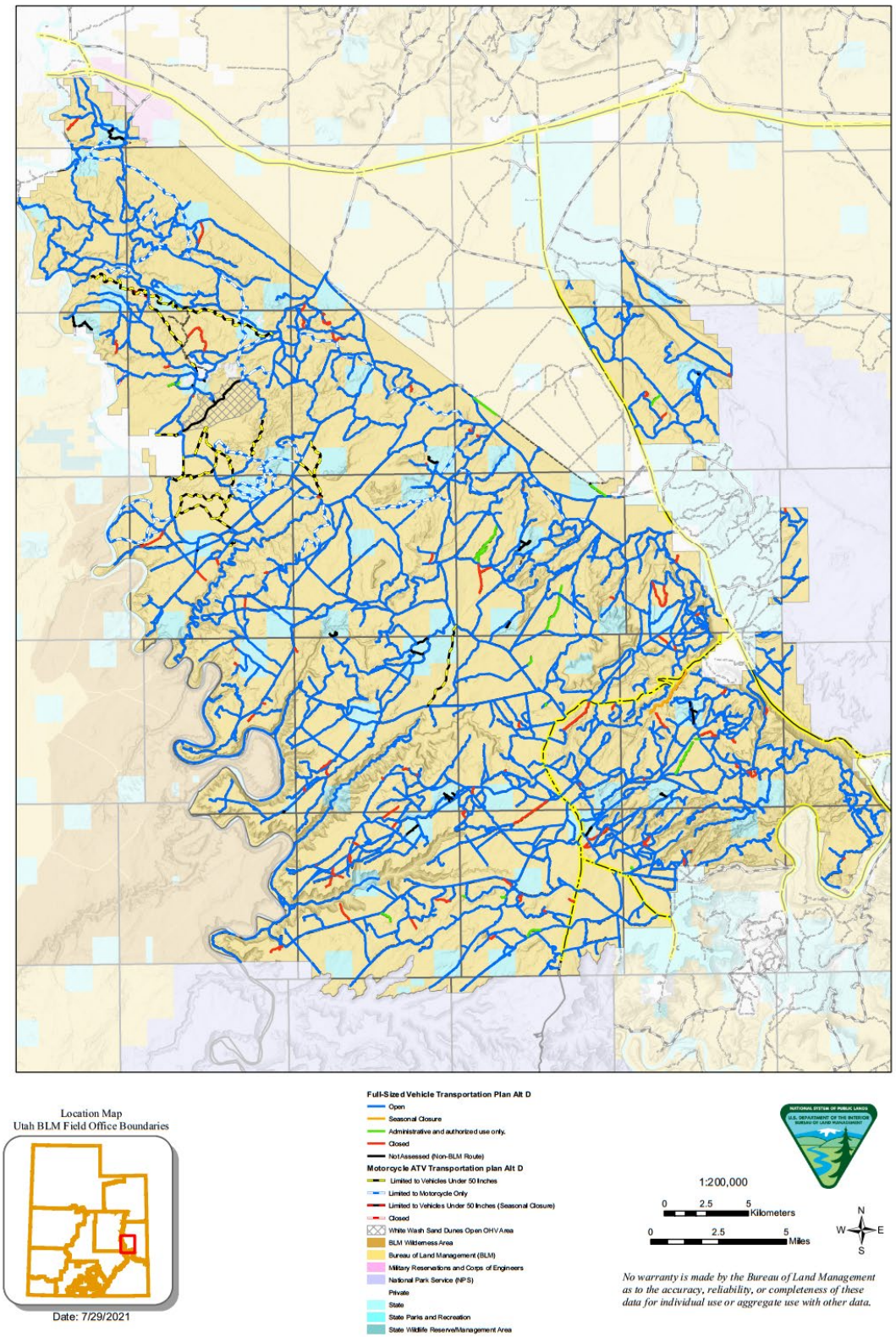
0 2.5 5 Kilometers

0 2.5 5 Miles

N W E S

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

J.2.4 MAP 5: ALTERNATIVE D



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APPENDIX K GLOSSARY

Access: The opportunity to approach, enter, and/or cross public lands.

Adaptive management: A system of management practices based on clearly identified outcomes and monitoring to determine whether management actions are meeting desired outcomes; and, if not, facilitating management changes that will best ensure that outcomes are met or re-evaluated. Adaptive management recognizes that knowledge about natural resource systems is sometimes uncertain.

Administrative use: Travel-related access for official use by BLM employees and agency representatives during the course of their duties using whatever means is necessary. Access is for resource management and administrative purposes and may include fire suppression, cadastral surveys, permit compliance, law enforcement, and resource monitoring or other access needed to administer BLM-managed lands or uses.

All-terrain vehicle (ATV): A wheeled vehicle other than a snowmobile, which is defined as having a wheelbase and chassis of 50 inches in width or less, handlebars for steering, generally a dry weight of 800 pounds or less, three or more low-pressure tires, and a seat designed to be straddled by the operator.

Alternatives: Other options to the proposed action by which the BLM can meet its purpose and need. The BLM is directed by the NEPA to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.…"

Area of Influence (AOI): The area within which any project should consider potential effects to the listed species.

Asset: A non-building facility and transportation construction, which include roads, primitive roads, and trails that are included in FAMS. The BLM maintains assets through the annual and deferred maintenance programs.

Authorized use: Travel-related access for users authorized by the BLM or otherwise officially approved. Access may include motorized access for permittees, lessees, or other authorized users, along with approved access across BLM-administered public lands for other state and federal agencies.

Class B road: Road that is constructed and maintained regularly by the County. As stated in Utah Code, Class B roads:

(a) are situated outside of incorporated municipalities and not designated as state highways;

(b) have been designated as county roads; or

(c) are located on property under the control of a federal agency and constructed or maintained by the county under agreement with the appropriate federal agency. (Utah Code 72-3-103)

Class D route: As stated in Utah Code, "any road, way, or other land surface route that has been or is established by use or constructed and has been maintained to provide for usage by the

public for vehicles with four or more wheels that is not a class A, class B, or class C road" (Utah Code 72-3-105).

Code of Federal Regulations (CFR): The codification of the general and permanent rules published in the Federal Register by the departments and agencies of the Federal Government. It is divided into 50 titles that represent broad areas subject to Federal regulation.

Cooperating agency: Assists the lead Federal agency in developing an environmental assessment or environmental impact statement. These can be any agencies with jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR § 1501.6). Any Tribe or Federal, State, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.

Crucial habitat: According to the UDWR: "[Crucial] habitat [is that] on which the local population of a wildlife species depends for survival because there are no alternative ranges or habitats available. Crucial value habitat is essential to the life history requirements of a wildlife species. Degradation or unavailability of crucial habitat will lead to significant declines in carrying capacity and/or numbers of wildlife species in question" (UDWR 2022).

Critical habitat: An area occupied by a threatened or endangered species on which are found physical and biological features that are (1) essential to the conservation of the species, and (2) may require special management considerations or protection.

Cultural resource: A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. They may be but are not necessarily eligible for the National Register of Historic Places.

Cultural resource inventory classes:

1. Class I - existing information inventory: a study of published and unpublished documents, records, files, registers, and other sources, resulting in analysis and synthesis of all reasonably available data. Class I inventories encompass prehistoric, historic, and ethnological/sociological elements, and are in large part chronicles of past land uses. They may have major relevance to current land use decisions.

2. Class II - probabilistic field survey: a statistically based sample survey designed to help characterize the probable density, diversity, and distribution of archaeological properties in a large area by interpreting the results of surveying limited and discontinuous portions of the target area.

3. Class III - intensive field survey: a continuous, intensive survey of an entire target area, aimed at locating and recording all archaeological properties that have surface indications, by walking close-interval parallel transects until the area has been thoroughly examined. Class III methods vary geographically, conforming to the prevailing standards for the region involved. In Utah, pedestrian transects are spaced at 15-meter intervals.

Decision Record: The BLM document associated with an EA that describes the action to be taken when the analysis supports a finding of no significant impact.

Decommission: The process of removing travel routes (i.e., transportation linear features) that are unauthorized or no longer needed. Transportation linear features that are not part of the defined travel route network or transportation system are transportation linear disturbances. Linear features identified as transportation linear disturbances will remain in the national geospatial dataset until reclamation and subsequent monitoring is complete or all on-the-ground indications of the route have vanished. After that, the BLM will remove these features from the national ground transportation linear feature dataset(s), but store them in a secondary local dataset of decommissioned and reclaimed routes. (BLM 2016)

Designated routes: Specific roads and trails identified by the BLM where some type of use is appropriate and allowed. Route designations are implementation decisions that govern only OHV activities on routes. The BLM designates routes as open, limited, or closed for OHV travel.

Easement: A right afforded a person or agency to make limited use of another's real property for other purposes.

Effects

Adverse or detrimental: Contribute to degradation of a resource or resource use.

Adverse effect to historic properties: An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Beneficial: Contribute to enhancement or restoration of a resource or resource use.

Cumulative: According to the Code of Federal Regulations (40 CFR § 1508.7), a cumulative effect "is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (GPO 2012). In other words, these effects are the sum of the direct and indirect effects of an action and the direct and indirect effects of other actions on the same affected resources/uses.

Direct: Caused by alternative (same time and place).

Indirect: Caused by alternative but later in time or further in distance but still reasonably foreseeable.

Long-term: Generally considered to last 10 years or more.

Minor: The effect or impact is slight but detectable: there would be a small change to the quality of the physical, biological, social, and economic values and resources.

Negligible: The effect or impact is at the lower level of detection; there would be no measurable change to the quality of the physical, biological, social, and economic values and resources.

Residual: Direct and indirect effects that remain after the application of all mitigation measures.

Short-term: Generally considered to last from the point of occurrence to several weeks or months but not expected to last beyond a year or two.

Endangered Species Act (ESA): The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the U.S. Fish and Wildlife Service and the Commerce Department's National Marine Fisheries Service. Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments.

Environmental assessment (EA): Public document for which a federal agency is responsible that serves to 1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; 2) Aid an agency's compliance with the National Environmental Policy Act when no environmental impact statement is necessary; 3) Facilitate preparation of an environmental impact statement when one is necessary. Shall include brief discussions of the need for the proposal, of alternatives, of the environmental impacts of the proposed action and Alternatives, and a listing of agencies and persons consulted.

Environmental Impact Statement: Federal agencies prepare an Environmental Impact Statement if a proposed major federal action is determined to significantly affect the quality of the human environment. The regulatory requirements for an Environmental Impact Statement are more detailed and rigorous than the requirements for an EA.

Erosive soils: Those soils that are susceptible to breakdown, detachment, transport, and redistribution of soil particles by forces of water, wind, or gravity (NRCS 2022).

Facility Asset Management System (FAMS): The BLM's official database for the management of transportation system assets and facilities.

Facility: All or any portion of a building, structure, site improvement, element, pedestrian route, or vehicular way located on a site. An element is an architectural or mechanical component, generally including toilets, picnic tables, grills, registration kiosks, etc. at a site (including a staging site).

Finding of No Significant Impact: A finding that explains that an action will not have a significant effect on the environment and, therefore, an Environmental Impact Statement will not be required.

Forage: All browse and herbaceous foods that are available to grazing animals.

Functioning at Risk: These riparian areas are in limited functioning condition; however, existing hydrologic, vegetative, or geomorphic attributes make them susceptible to impairment. (Dickard et al. 2015)

Geographic Information System (GIS): "System designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. The key word to this technology is Geography – this means that some portion of the data is spatial. In other words, data that is in some way referenced to locations on the earth. Coupled with this data is usually tabular

data known as attribute data. Attribute data can be generally defined as additional information about each of the spatial features. An example of this would be schools. The actual location of the schools is the spatial data. Additional data such as the school name, level of education taught, student capacity would make up the attribute data. It is the partnership of these two data types that enables GIS to be such an effective problem-solving tool through spatial analysis. GIS is more than just software. People and methods are combined with geospatial software and tools, to enable spatial analysis, manage large datasets, and display information in a map/graphical form." (University of Wisconsin-Madison Libraries)

Ground Transportation Linear Feature (GTLF): A geospatial database of all transportation linear features (from motorized to foot use) as they exist on the ground, not just those in the BLM transportation system (refer to the Ground Transportation Linear Features Data Standard Report, October 22, 2014, version 2.0 or later, for detailed information on the GTLF data standard).

Habitat fragmentation: The degree to which an area of habitat is divided into smaller patches of habitat as a result of human activities and developments (e.g., trails, roads, fencing) or as a result of natural barriers (e.g., cliffs, rivers).

Hard look: A reasoned analysis containing quantitative or detailed qualitative information. (BLM 2008a)

Historic property: Historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

Implementation decisions: Decisions that take action to implement land use planning; generally appealable to Interior Board of Land Appeals under 43 CFR § 4.410. These decisions are generally more site-specific than land-use plan decisions.

Implementation plan: An area or site-specific plan written to implement decisions made in a land use plan. Implementation plans include both activity plans and project plans. Examples of implementation plans include interdisciplinary management plans, habitat management plans, and allotment management plans.

Interdisciplinary Team (IDT): A group of individuals with different training, representing the physical sciences, social sciences, and environmental design arts, assembles to solve a problem or perform a task. The members of the team proceed to a solution with frequent interaction so that each discipline may provide insights to any stage of the problem and disciplines may combine to provide new solutions. The number and disciplines of the members preparing the plan vary with circumstances. A member may represent one or more disciplines or BLM program interests.

Land use plan: A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land-use-plan level decisions developed through the planning process outlined in 43 CFR

Part 1600, regardless of the scale at which the decisions were developed. The term includes both resource management plans (RMPs) and management framework plans (MFPs).

Linear disturbance: A human-made linear travel or transportation related disturbance that is not part of the BLM's transportation system or travel network. Transportation linear disturbances may include engineered (planned) but no longer needed features, as well as unplanned routes that have been identified for decommissioning and reclamation either passively or actively. Linear disturbances may also include permitted realty features (e.g., pipelines or power lines) that may or may not have travel routes maintained in association with them.

Linear feature: A linear ground disturbance that results from travel across or immediately over the surface of BLM-administered public lands. These features include engineered roads and trails, as well as user-defined, non-engineered routes, created as a result of public or unauthorized use. Linear features may also include permitted realty features (e.g., pipelines or power lines) that may or may not have travel routes maintained in association with them.

Maintained road: A road that is constructed, regularly maintained by mechanical means, and receives regular use.

Mechanized travel: Moving by means of mechanical devices not powered by a motor, such as a bicycle.

Minimally maintained route: Route which receives low or minimal maintenance (i.e., maintained to a Maintenance Intensity Level 1 in accordance with Appendix A of BLM's 9113 Roads Manual (BLM 2015) and Appendix A of BLM's 9115 Primitive Roads Manual (BLM 2012e)). These routes tend to be narrower than maintained routes (grading and brushing is not performed), maintenance is limited to that necessary to protect adjacent land and resource values, and they receive low use at low speeds.

Minimize: Limit the degree or magnitude of.

Mitigation: in general, a combination of measures to lessen the impacts of a project or activity on an element of the natural environment or various other cultural or historic values; more specifically, as defined by the Council on Environmental Quality in its regulations for implementing NEPA, mitigation includes: (a) avoiding the impact, (b) minimizing the impact, (c) rectifying (i.e., repairing, rehabilitating, or restoring) the impact (d) reducing or eliminating the impact through operations during the life of the project, or (e) compensating by replacing or substituting resources (40 CFR § 1508.20).

Monitoring: The process of tracking the implementation of land use plan decisions and collecting and assessing data necessary to evaluate the effectiveness of land use planning decisions.

Motorized vehicles: Vehicles propelled by motors or engines, such as cars, trucks, off-highway vehicles, motorcycles, snowmobiles, and boats.

Multiple use: The management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into

account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output (FLPMA) (from M6840, Special Status Species Manual).

National Environmental Policy Act (NEPA): Requires federal agencies to assess and disclose the environmental effects of proposed actions prior to making decisions. BLM travel management must conform to NEPA requirements.

This legislation established a landmark national environmental policy which, among other things, encourages environmental protection and informed decision-making. It provides the means to carry out these goals by:

- mandating that every Federal agency prepare a detailed statement of the effects of "major Federal actions significantly affecting the quality of the human environment."
- establishing the need for agencies to consider alternatives to those actions.
- requiring the use of an interdisciplinary process in developing alternatives and
- analyzing environmental effects.
- requiring that each agency consult with and obtain comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved.
- requiring that detailed statements and the comments and views of the appropriate Federal, State, Tribal, and local agencies be made available to the public.

National Historic Preservation Act (NHPA): 1966 legislation establishing the National Register of Historic Places and extending the national historic preservation programs to properties of State and local significance.

National Register of Historic Places (NRHP): Official inventory of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture.

National Register Eligibility Definitions:

Eligible: Cultural resources that are listed or recommended eligible for inclusion on the National Register of Historic Places (National Register), are those resources that express the quality of significance in American history, architecture, archeology, engineering, and culture and are represented as districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. To be listed or recommended eligible the cultural resource must possess the relevant aspects of integrity and meet at least one of the following National Register Criteria:

A. Associated with events that have made a significant contribution to the broad patterns of our history; or

B. Associated with the lives of significant persons in our past; or

C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded or may be likely to yield, information important in history or prehistory. 36 CFR Part 800 defines National Register-eligible cultural resources as "historic properties."

Not eligible: Cultural resources that do not meet the National Register Criteria or maintain the relevant aspects of integrity.

Native vegetation: Species that historically occurred or currently occur in a particular ecosystem and were not introduced (BLM Manual 1740)

Naturalness: Refers to an area that "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable" (Section 2[c] of the Wilderness Act of 1964).

Non-mechanized travel: Moving by foot or by stock or pack animal.

Noxious weed: A plant species designated by Federal or State law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or non-native, new, or not common to the US.

Objective: A description of a desired condition for a resource. Objectives can be quantified and measured and, where possible, have established time frames for achievement.

Off-highway vehicle (OHV): 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 (as defined in 43 CFR § 8340.0-5(a)).

Off-highway vehicle (OHV) area designation: A land use planning decision that permits, establishes conditions for, or prohibits OHV activities on specific areas of public lands. The BLM is required to designate all public lands as open, limited, or closed to OHVs. Below are definitions of these designations as taken from the 2016 BLM Travel and Transportation Management Manual (BLM 2016):

OHV-Closed Areas: An area where OHV use is prohibited. Access by means other than OHVs, such as by motorized vehicles that fall outside the definition of an OHV or by mechanized or non-mechanized means, is permitted. The BLM designates areas as closed, if necessary, to protect resources, promote visitor safety, or reduce user conflicts (see 43 CFR § 8340.0-5(h)).

OHV-Limited Areas: An area where OHV use is restricted at certain times, in certain areas, and/or to certain vehicular use. Examples of restrictions include numbers or types of vehicles; time or season of use; permitted or licensed use only; use limited to existing, designated roads and trails; or other restrictions necessary to meet resource management objectives, including certain competitive or intensive use areas that have special limitations (43 CFR § 8340.0-5 (g)).

OHV-Open Areas: A designated area where all types of OHV travel is permitted at all times, anywhere in the area subject only to the operating restrictions set forth in subparts 8341 without restriction (43 CFR § 8340.0-5(f)). Open area designations are made to achieve a specific recreational goal, objective and setting and are only used in areas managed for intensive OHV activity 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.

Off-highway vehicle (OHV) route designations: Management designations applied to individual routes (as opposed to OHV areas) during interdisciplinary route evaluation sessions. The BLM designates routes as open, limited, or closed, and the designation must be included in all route-specific decisions and recorded in the national ground transportation linear feature dataset(s). Definitions and the designation criteria used in this decision-making process stem from those provided for OHV areas in 43 CFR § 8340.0-5(f), (g), and (h).

- **OHV-Open:** OHV travel is permitted where there are no special restrictions or no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting the timing or season of use, the type of OHV, or the type of OHV user.
- **OHV-Limited:** OHV travel on routes, roads, trails, or other vehicle ways is subject to restrictions to meet specific resource management objectives. Examples of restrictions include numbers or types of vehicles; time or season of use; permitted or licensed use only; or other restrictions necessary to meet resource management objectives, including certain competitive or intensive uses that have special limitations.
- **OHV-Closed:** OHV travel is prohibited on the route. Access by means other than OHVs, such as by motorized vehicles that fall outside of the definition of an OHV or by mechanized or non-mechanized means, is permitted. The BLM designates routes as closed to OHVs if necessary to protect resources, promote visitor safety, reduce use conflicts, or meet a specific resource goal or objective.

Perennial stream: Perennial streams carry flowing water continuously throughout the year, regardless of weather conditions. It exhibits well-defined geomorphologic characteristics and in the absence of pollution, thermal modifications, or other man-made disturbances has the ability to support aquatic life.

Planning area: A geographic area for which land use and resource management plans are developed and maintained.

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. Unless specifically prohibited, primitive roads can also include other uses such as hiking, biking, and horseback riding.

Primitive route: Any transportation linear feature located within a WSA or lands with wilderness characteristics designated for protection by a land use plan and not meeting the wilderness inventory road definition.

Proper Functioning Condition (PFC): PFC describes both the assessment method and a defined, on-the-ground condition of a riparian area. The on-the-ground condition termed PFC refers to how well physical processes are functioning. A lotic riparian area is considered to be

in PFC, or "functioning properly," when adequate vegetation, landform, or woody material is present to:

- Dissipate stream energy associated with high waterflow, thereby reducing erosion and improving water quality.
- Capture sediment and aid floodplain development.
- Improve floodwater retention and ground-water recharge.
- Develop root masses that stabilize streambanks against erosion.
- Maintain channel characteristics.

A riparian area in PFC will, in turn, provide associated values, such as wildlife habitat or recreation opportunities. (Dickard et al. 2015)

Reclamation: Returning disturbed lands to a form and productivity that will be ecologically balanced and in conformity with a predetermined plan.

Record of Decision: Decision document associated with an Environmental Impact Statement (equivalent to an EA's Decision Record).

Recreation Management Information System: The official BLM database for recording and tracking visitor use and acres with OHV area designations on BLM-managed lands; the BLM also uses it to track TMP completion and implementation; tool used by the BLM to record number of visits, types of activities, permits, partnerships, and agreements.

Recreation management zone (RMZ): A subdivision of a recreation management area that further delineates specific recreation opportunities and recreation setting characteristics.

Regularly maintained route: Route that receives moderate or high levels of maintenance (i.e., maintained to a Maintenance Intensity Level 3 or 5 in accordance with Appendix A of BLM's 9113 Roads Manual (BLM 2015) and Appendix A of BLM's 9115 Primitive Roads Manual (BLM 2012e)). These routes tend to be wide enough for two vehicles to pass, are generally maintained to keep the route in use for the majority of the year, and see moderate to high use at moderate speeds.

Resource management plan (RMP): A land use plan as prescribed by the Federal Land Policy and Management Act that establishes, for a given area of land, land use allocations, coordination guidelines for multiple-use, objectives, and actions to be achieved.

Restoration: The process by which areas are brought back to a former, original or specific desired condition or appearance. Could involve putting vegetation back in an area where vegetation previously existed, which may or may not simulate natural conditions.

Right-of-way (ROW): An easement or permit that authorizes public land to be used for a specified purpose that is in the public interest and that requires rights-of-way over, upon, under, or through such lands (e.g., roads, power lines, pipelines). A ROW holder is an authorized user for their ROW.

Riparian area: A form of wetland transition between permanently saturated wetlands and upland areas. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels.

Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles which have four or more wheels, and maintained for regular and continuous use. Often, many types of uses are allowed on roads. BLM allowed uses on roads are often hierarchical such that if motorized use is allowed on a road, various forms of non-motorized use are also allowed.

Rock Art: Petroglyphs (carvings) or pictographs (paintings) created on natural rock surfaces by native people and depicting their history and culture.

Route Evaluation: The careful and systematic review of each route by a BLM interdisciplinary team in conjunction with resource data collection and discussion of minimizing potential impacts during preliminary alternative designations. It is the process through which a BLM interdisciplinary team of resource specialists assess individual routes and documents potentially affected resources and/or resource uses associated with each route. During route evaluation, BLM staff will:

- Propose individual route designations for each route in a TMA based on individual alternative themes.
- Address how each route will minimize impacts on resources per 40 CFR § 8342.1.
- Document rationales for each alternative designation choice.

Route Inventory: Collection of route line data for maps (may also include collection of point data and photos). Data may be collected in the field with GPS units or drawn on a computer screen from aerial imagery.

Routes: Roads, trails, and primitive roads. Generically, components of the transportation system are described as "routes."

Saline soil: A soil containing soluble salts in an amount that impairs growth of plants (NRCS 2015).

Scoping (Internal and External): Process by which the BLM solicits internal and external input on the issues and effects that will be addressed, as well as the degree to which those issues and effects will be analyzed, in the NEPA document. Scoping is one form of public involvement in the NEPA process. Scoping occurs early in the NEPA process and generally extends through the development of alternatives (the public comment periods for Environmental Impact Statement review are not scoping). Internal scoping is simply federal or cooperator review to decide what needs to be analyzed in a NEPA document. External scoping, also known as formal scoping, involves notification and opportunities for feedback from other agencies, organizations and the public.

Sensitive Species: Species designated as sensitive by the BLM State Director, including species that are under status review, have small or declining populations, live in unique habitats, or require special management. BLM Manual 6840 provides policy and guidance for managing special status species.

Solitude: The state of being alone or remote from habitations; isolation. A lonely or secluded place. Factors contributing to opportunities for solitude may include size, natural screening,

topographic relief, vistas, physiographic variety, and the ability of the user to find a secluded spot.

Special Recreation Management Area (SRMA): An administrative unit where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance, or distinctiveness, especially compared to other areas used for recreation.

Special Recreation Permits (SRPs): Permits issued to businesses, organizations, and individuals to allow the use of specific public land and related waters for commercial, competitive, and organized group use. Special Recreation Permits allow land stewards to coordinate and track commercial and competitive use of public lands. They also provide resource protection measures to ensure the future enjoyment of those resources by the public.

Special status species: Species that are proposed for listing, officially listed as threatened or endangered, or are candidates for listing as threatened or endangered under the provisions of the Endangered Species Act (ESA); those listed by a State in a category such as threatened or endangered implying potential endangerment or extinction; and those designated by each State BLM Director as sensitive.

State Historic Preservation Office (SHPO): Office in State or territorial government that administers the preservation programs under the National Historic Preservation Act.

Substantial habitat: According to the UDWR: "[Substantial] habitat [is] that which is used by a wildlife species but is not crucial for population survival. Degradation or unavailability of substantial value habitat will not lead to significant declines in carrying capacity and/or numbers of the wildlife species in question" (UDWR 2022).

Surface-disturbing activities: Human-caused disturbance resulting in direct and pronounced alteration, damage, removal, displacement, or mortality of vegetation, soil, or substrates; usually entail motorized or mechanized vehicles or tools; typically can also be described as disruptive activities. Examples of typical surface disturbing activities include:

- Earth-moving and drilling
- Geophysical exploration
- Off-route motorized and mechanized travel
- Vegetation treatments including woodland thinning with chainsaws
- Pyrotechnics and explosives
- Construction of powerlines, pipelines, oil and gas wells, recreation sites, livestock improvement facilities, wildlife waters, or new roads

Threatened species: Any plant or animal species defined under the Endangered Species Act as likely to become endangered within the foreseeable future throughout all or a significant portion of its range; listings are published in the Federal Register.

Traditional uses: Longstanding, socially conveyed, customary patterns of thought, cultural expression, and behavior, such as religious beliefs and practices, social customs, and land or resource uses. Traditions are shared generally within a social and/or cultural group and span generations. Usually, traditional uses are reserved rights resulting from treaty and/or agreements with Native American groups.

Trail: A linear route managed for human-powered, stock, or off-road vehicle forms of transportation or for historical or heritage values. The BLM does not generally manage trails for use by four-wheel-drive or high-clearance vehicles.

Travel Management Area (TMA): Portion of land (often represented with a polygon) where areas have been classified as open, closed, or limited; TMAs have an identified and/or designated network of roads, trails, ways, and other routes that provide for public access and travel. All designated travel routes within TMAs should have a clearly identified need and purpose as well as clearly defined activity types, modes of travel, and seasons or time-frames for allowable access or other limitations.

Travel Management Plan (TMP): A document that describes decisions related to the selection and management of a travel network and transportation system. A TMP can be integrated in an RMP or as a stand-alone implementation plan after development of the RMP.

Travel network: Routes occurring on public lands or within easements granted to the BLM that are recognized, designated, decided upon, or otherwise authorized for use through the planning process or other travel management decisions. These may or may not be part of the transportation system and may or may not be administered by the BLM.

Unevaluated (to the NRHP): A site that has not been evaluated to determine if it is eligible to the National Register of Historic Places.

Unmaintained road: See "Minimally maintained route"

Utility Terrain Vehicle (UTV): Any recreational motor vehicle other than an ATV, motorbike or over snow vehicle designed for and capable of travel over designated unpaved roads, traveling on four (4) or more low-pressure tires, maximum width less than seventy-four (74) inches, usually a maximum weight less than two thousand (2000) pounds, or having a wheelbase of ninety-four (94) inches or less. Does not include vehicles specially designed to carry a person with disabilities.

Visual Resource Inventory (VRI): An inventory taken to identify visual resource values and quality.

Visual Resource Management (VRM): The system by which BLM classifies and manages scenic values and visual quality of public lands. The system is based on research that has produced ways of assessing aesthetic qualities of the landscape in objective terms. After inventory and evaluation, lands are given relative visual ratings (management classes) that determine the extent of modification allowed for the basic elements of the landscape.

Visual resources: The visible physical features on a landscape, (topography, water, vegetation, animals, structures, and other features) that comprise the scenery of the area.

Wetland: Permanently wet or intermittently water-covered areas, such as swamps, marshes, bogs, potholes, swales, and glades.

Wilderness characteristics: Wilderness characteristics include size, the appearance of naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation. Indicators of an area's naturalness include the extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats. Outstanding opportunities for solitude or primitive and unconfined types of recreation may be experienced when the sights, sounds, and evidence of other people are rare or infrequent, in locations

where visitors can be isolated, alone or secluded from others, where the use of the area is through non-motorized, non-mechanical means, and where no or minimal developed recreation facilities are encountered.

Wilderness Inventory Road: Routes which have been improved and maintained by mechanical means to ensure relatively regular and continuous use.

APPENDIX L IMPLEMENTATION GUIDE

for the Labyrinth/Gemini Bridges Travel Management Plan

DOI-BLM-UT-Y010-2020-0097-EA

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LIST OF ACRONYMS

BLM	Bureau of Land Management
BMP	Best management practice
CFR	Code of Federal Regulations
EA	Environmental Assessment
ESA	Endangered Species Act
FAMS	Facility Asset Management System
FLTP	Federal Lands Transportation Program
GIS	Geographic information system
GPS	Global positioning system
GTLF	Ground Transportation Linear Features
HPTP	Historic Properties Treatment Plan
LWC	Lands with wilderness characteristics
MFO	Moab Field Office
MUTCD	Manual on Uniform Traffic Control Devices
NCA	National conservation area
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OHV	Off-highway vehicle
ORV	Off-road vehicle
RMP	Resource Management Plan
RMZ	Recreation management zone
ROW	Right-of-way
SRMA	Special Recreation Management Area
TMA	Travel Management Area
TMP	Travel Management Plan
TTM	Travel and Transportation Management
VRM	Visual Resource Management

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L.1 INTRODUCTION

Creating a Travel Management Plan (TMP) route network and analyzing the potential resource or resource use effects in an Environmental Assessment (EA) as part of the National Environmental Policy Act (NEPA) process is the first of two key steps in the travel management planning process. Implementing the travel network decisions and actively managing the designated travel route system on the ground following the EA is the second key step.

L.1.1 DOCUMENT OVERVIEW

This document, the TMP Implementation Guide (Guide), will guide the Labyrinth/Gemini Bridges TMP, located on lands administered by the BLM's Moab Field Office (MFO). This Guide provides operation and management guidance for the Labyrinth/Gemini Bridges Travel Management Area (TMA) off-highway vehicle (OHV) route network as analyzed in the Labyrinth/Gemini Bridges TMP EA and adopted and designated in the Decision Record.

This Guide is intended to serve as a standalone manual for operating and maintaining the TMA's designated travel route network in accordance with the Decision Record. It helps fulfill the purpose and need for the TMP as detailed in the EA in meeting current and future public access and resource management needs, supports management decisions in the 2008 Moab Field Office Record of Decision and Approved Resource Management Plan (2008 RMP), and complies with the NEPA and other federal regulations.

As part of ongoing travel management, new route designations may be added or changed in the future to respond to growing public demand for access, Title V right-of-way (ROW) considerations, or concerns of damage to resources. Any new or changed designations will be subject to a site-specific review under the NEPA.

Primary operation and management actions discussed in this Guide include maintenance and resource protection, public education and outreach, visitor services, working with partners and volunteers, law enforcement, directional and regulatory signing, reclamation, monitoring, and engineering and resource program interface.

Monitoring efforts are of key importance and will help the BLM determine the effectiveness of operation and management, informing the BLM on issues that may need to be addressed through adaptive management or additional management actions. The Labyrinth/Gemini Bridges TMP EA identified several important resource and use issues at the heart of the BLM's commitment to provide for multiple land uses while protecting sensitive cultural and natural resources. They include:

- Impacts of OHV travel on known cultural resource sites
- Route-related soil erosion, and its resulting impacts on vegetation and water quality
- Impacts of travel routes and OHV use on visual resources
- Impacts of travel routes and OHV use on wildlife and migratory birds
- OHV-related disturbances of sensitive species plants habitat
- OHV-related disturbances on sensitive and/or Endangered Species Act (ESA) listed wildlife species habitat

- Impacts from OHV travel on the defining characteristics of lands with wilderness characteristics and other special management area designations
- Providing access for recreation opportunities and experiences

In addition, the route evaluation process conducted as part of the TMP EA identified monitoring activities specific to individual routes. General monitoring schedules are included in the L.16.2 "Strategies and Schedules" section of this guide.

Note: The BLM intends to fully implement the Labyrinth/Gemini Bridges TMP according to this Guide. However, the operation and management actions discussed in this document are subject to available staff and funding. For the EA it was assumed that staff and funding would be available to implement the TMP-this assumption is carried through in this Guide. Grants, new appropriations, partnerships, and volunteers may be used to supplement budgets and workforce when possible.

Additionally, mileages, percentages, and other numbers used in this guide are approximate projections for comparison and analytical purposes only. They do not reflect exact measurements or precise calculations. Table mileages and percentages may not sum properly due to rounding.

L.1.2 TRAVEL MANAGEMENT AREA OVERVIEW

The 303,994-acre TMA is in Grand County and falls under the jurisdiction of the BLM MFO. For more details, see the attached maps and Section 1.4 of the EA.

The TMA contains the following specially designated areas (i.e., areas formally designated by Congress or through an RMP process):

- Highway 279/Shafer Basin/Long Canyon Area of Critical Environmental Concern (ACEC)
- Ten Mile Wash ACEC
- Scenic Wild and Scenic River (WSR) segment of the Green River
- Labyrinth Rims/Gemini Bridges Special Recreation Management Area (SRMA)
- 40-mile segment of the Old Spanish National Historic Trail (NHT)

There are also areas identified by BLM as possessing wilderness characteristics (LWC). These areas are not managed for protection of their wilderness characteristics, although they do have undeveloped character and provide opportunities for primitive recreation.

L.1.3 BACKGROUND ON BLM TRAVEL AND TRANSPORTATION MANAGEMENT

In the 1980s, in response to Presidential Executive Orders 11644 (Federal Center 1977) and 11989 (National Archives 1972), the BLM began to address public concerns regarding the proliferation of unplanned roads and trails and their impact on public land resources and uses. by designating all public lands as either "open," "limited," or "closed" to OHV use in accordance with the designation criteria in the Code of Federal Regulations (CFR), under 43 CFR § 8342.1.

National BLM policy requires state and field offices to develop Travel and Transportation Management (TTM) plans using a comprehensive, interdisciplinary approach. Using a

collaborative approach can resolve or prevent resource conflicts and issues associated with travel on BLM lands. The Labyrinth/Gemini Bridges TMP was developed using the TTM process. (This TMP addresses public OHV use of routes in the TMA. Non-motorized uses will be addressed in a separate planning process.) See the BLM's travel management handbook (BLM 2012a) and manual[14] (BLM 2016c) for more information on the TTM process.

The BLM's TTM process ensures proactive management of public access and resources in compliance with travel-related regulations and best management practices (BMPs). The process moves from broad-scale land use plan decisions achieved in RMPs or equivalent documents to more site-specific, project-level decisions and actions (e.g., those included in the EA and this document). TTM project-level decisions address specific implementation, operation, and maintenance actions for routes and access and recreation-related needs. TTM goals are to:

- Provide and improve sustainable access for public needs and experiences.
- Protect natural resources and settings.
- Protect cultural resources in compliance with Section 106 of the NHPA.
- Promote the safety of public land users.
- Minimize conflicts among various public land users.

L.2 TRAVEL MANAGEMENT DECISIONS

L.2.1 2008 RMP DECISIONS AND CURRENT MANAGEMENT SETTINGS

Previous Individual Route Designations and General Travel Management Guidance

The 2022 Labyrinth/Gemini Bridges TMP route network designations supersede the individual route and area designations assigned in the TMA by the BLM's 2008 RMP travel plan (for more details on that designation effort, see pages 18-20 and 36-37 of the 2008 RMP). In some cases, individual route designations developed in the 2022 Labyrinth/Gemini Bridges TMP modify route-specific designations developed in 2008. In addition to assigning project-level route designations, the 2008 RMP also provided overarching travel management-related considerations, goals, objectives, and management decisions (see L.16 of this guide and pages 126-130 as well as Appendix N of the 2008 RMP) to guide future travel management planning efforts such as this 2022 Labyrinth/Gemini Bridges TMP.

Area Designations

An area designation is a land use planning (i.e., RMP-level) decision that permits, establishes conditions for, or prohibits OHV activities on specific areas of public lands. The BLM is required to designate all public lands areas under their jurisdiction as open, limited, or closed to OHVs. OHV area designations are overarching and broader than individual route designations, which are more comprehensive, detailed and route-specific. After OHV area designations are assigned in RMPs, individual routes *may be* designated in areas designated as "open," and individual routes *must be* designated in areas designated as "limited." Typically, individual preliminary route designations of open, limited, or closed are identified during a systematic route

[14] The BLM travel management manual was last updated in 2016 and should be used instead of the more outdated handbook when manual topics overlap with handbook topics.

evaluation process and analyzed in an EA accompanying a proposed TMP. This was the case for the Labyrinth/Gemini Bridges TMP/EA project.

The 2008 RMP designated 99.4% of the TMA as "Limited to Designated Routes," with the White Wash Sand Dunes area designated as "Open." For a depiction of OHV area designations in the TMA, see Map 30 in the 2008 RMP (BLM 2008b). Though there are exceptions for emergencies and other instances, OHV and mechanized vehicle use is limited to designated routes within the TMA except in the White Wash Sand Dunes area (1,866 acres).

L.2.2 Route Designations

The purpose of the Labyrinth/Gemini Bridges TMP process was to, among other things, revisit and reconsider the viability of routes designated in the 2008 Travel Plan. For details on route designation types and how they were determined, see Section 2.1 of the EA. For details on each assigned route designation, see the route reports discussed in Appendix I of the EA. Route designations may fall under the general designation categories of OHV-Open, OHV-Limited, and OHV-Closed. In some cases, more specific route designations may be called for under these basic designation categories. For instance, if additional management is called for by the IDT on an OHV-Open route to help mitigate a resource concern, the route would be designated as "Open with Management" but still be grouped under the general "OHV-Open" category since it would remain available to OHV use (i.e., public motorized use). Conversely a travel route may be as assigned a more specific designation of "Limited to Authorized Use," limiting route use to authorized users (e.g., grazing permittees) only. This specific designation would be grouped under the broad "OHV-Closed" category since it would be closed to OHV users.

Table L.1: Miles of Routes and Percentages by Designation for the Selected Alternative

[TABLE TO BE INSERTED AFTER AN ALTERNATIVE IS SELECTED]

L.2.3 Transportation Asset Types and the Facility Asset Management System

"Transportation asset" is a term used to describe roads, primitive roads, and trails that comprise the BLM's transportation system. It is the general term used to categorize all BLM-managed "transportation assets" contained within the Facility Asset Management System (FAMS). The BLM travel management manual states, "The inclusion of a transportation linear feature in FAMS is not a decision—inclusion in FAMS is a management tool to aid in the implementation of route-related decisions such as administration, maintenance, emergency repair, etc." (BLM 2016c). If the data are available, the BLM records FAMS numbers during evaluation for routes that are already in the FAMS.

Closed routes, reclaiming routes, and routes in wilderness areas are not to be included in the FAMS. Below are BLM travel management manual (BLM 2016c) definitions for the three FAMS asset types:

> 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.
>
> Primitive Road: A linear route managed for use by four-wheel drive or high-clearance vehicles. These routes do not normally meet any BLM road design standards. Unless

specifically prohibited, primitive roads can also include other uses, such as hiking, biking, and horseback riding.

Trail: A linear route managed for human-powered, stock or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Table L.2, below, shows the mileage of FAMS asset types for the Labyrinth/Gemini Bridges TMP adopted in the Decision Record.

Table L.2: Miles of Routes by Asset Type and Designation

[TABLE TO BE INSERTED AFTER AN ALTERNATIVE IS SELECTED]

L.2.4 NON-MOTORIZED ROUTE USE

Users can engage in non-motorized and non-mechanized travel anywhere on public lands, including those within the TMA, unless an area or route is closed for safety or a specific resource concern. Therefore, routes that limit motorized vehicle use to official or administrative purposes or otherwise are designated OHV-Closed are often open to non-motorized and non-mechanized uses, including but not limited to hiking and horseback riding. In the MFO, mountain bikes are limited to designated routes. Mountain bikes are allowed on all motorized routes, as well as on routes designated for mountain bike use.

L.2.5 E-BIKES

E-bikes are only authorized on OHV routes; however, an Authorized Officer may allow, as part of a land-use planning or implementation-level decision, e-bikes, or certain classes of e-bikes, whose motorized features are not being used exclusively to propel the e-bike for an extended period of time on roads and trails upon which mechanized, non-motorized use is allowed. E-bikes are by default allowed on all trails designated for motorized use. E-bikes are defined as a two- or three-wheeled cycle with fully operable pedals and an electric motor of not more than 750 watts (1 h.p.) that meets the requirements of one of the following three classes:

(1) Class 1 electric bicycle shall mean an electric bicycle equipped with a motor that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.

(2) Class 2 electric bicycle shall mean an electric bicycle equipped with a motor that may be used exclusively to propel the bicycle, and that is not capable of providing assistance when the bicycle reaches the speed of 20 miles per hour.

(3) Class 3 electric bicycle shall mean an electric bicycle equipped with a motor that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the bicycle reaches the speed of 28 miles per hour.

L.2.6 CROSS-COUNTRY OHV TRAVEL

Cross-country motorized travel is allowed only in the 1,866-acre White Wash Sand Dunes area. Outside of this open area, cross-country motorized travel within the TMA is prohibited. The

2008 RMP specifically addresses how the OHV-Limited area designation restricts cross-country travel:

> The limited designation in the Approved RMP replaces the large amount of area currently available for cross country travel within the planning area. As a result, the Approved RMP provides a substantial amount of protection to natural (vegetation, soils, scenery, riparian, and wildlife) and cultural resources by eliminating cross-country travel which can be detrimental to these resources. The Approved RMP allows for motorized access and opportunities within the limited designation while still providing protection for sensitive resources and non-motorized recreation users.

L.2.7 PUBLIC LANDS ACCESS

Introduction

Access to and across BLM lands within the TMA is influenced by land tenure and various land-use authorizations, such as rights-of-way (ROWs) for roads and utilities. Routes in the existing transportation network which cross non-federal land or areas affected by special land-use authorizations will continue to see use under current and foreseeable travel patterns, though their public use is not legally ensured for the long-term. These routes constitute priorities for pursuing legal access acquisition (or adjudicating existing access rights) across non-federal land to ensure long-term access for the public and for the maintenance and operation of authorized uses. This project's ePlanning page shows the TMP route network in relation to BLM surface ownership in the TMA.

TMA Access to and from Other Jurisdictions

Access to and within the TMA exists primarily from U.S. Highway 191 and State Route 313. In addition to these developed roads, many secondary routes provide access within the TMA. Access to the TMA is primarily from BLM lands, though a few routes enter from private and state lands. In areas where BLM-administered routes cross private lands, access into the TMA from these routes is not ensured for the long-term unless the BLM acquires legal permission across these lands. TMP route designations do not apply to private lands and access across private lands in the TMA is a concern for the public and for the BLM's management of adjacent public lands. The BLM may seek future easements from willing landowners to secure long-term public access across these lands. To avoid new ground disturbance and impacts to resources, the BLM typically prescribes use of existing roads in ROWs issued to access private land.

L.3 IMPLEMENTATION

L.3.1 INTRODUCTION

This Guide's primary purposes are to implement the designations in the adopted Labyrinth/Gemini Bridges TMP and to create a management framework that allows for current and future needs of users while ensuring the protection of resources and reducing or preventing user conflicts. The implementation strategies in this section are designed to assist in achieving these purposes.

L.3.2 IMPLEMENTATION STRATEGY AND PRIORITIES

Priority of Implementation Actions

TMP implementation is staff- and funding-dependent and should be based on the strategies and priorities discussed below. The implementation priorities are based on the BLM's projected ability to operate and maintain the designated travel network in a manner that may change TMA conditions and influence visitor behavior to achieve desired conditions. Specific components of TMP implementation are described in more detail elsewhere in this plan. This section provides the reader with a sense of key implementation actions and timing.

Monitoring, adaptive management, and budget limitations can affect the BLM's implementation priorities and timeline of completion. When selecting areas/routes for TMP implementation, priorities will be assigned using the five factors listed below. These factors are adapted from a model project in the BLM's Travel and Transportation Handbook (BLM 2012a).

1. Would implementing the action maintain and enhance public safety?
2. Would the action be implemented in an area of high resource value (natural, cultural, historic, biological, scientific, scenic, recreational, etc.)?
3. Does the area/route include habitat for special status species?
4. Does the area/route have above-average surface disturbance?
5. Does the action resolve significant community or administrative interface issues?

The primary implementation actions described below may be done concurrently, combined, or conducted in the order in which they are funded. The BLM may attempt to complete implementation in the order shown with heightened priority acknowledged for special emphasis areas such as special designations, areas with sensitive resources, and areas of intensive use (see Section L.1.2 for a listing of special emphasis areas in the TMA). The following list indicates the BLM's Labyrinth/Gemini Bridges TMP primary implementation actions and their general/current order of priority, as established by MFO recreation staff. As with the factors listed above, it is adapted from a model project in the BLM's Travel and Transportation Handbook (BLM 2012a):

1. Continue public education and outreach efforts. Develop and distribute public access maps and informational brochures of the designated route network in print and electronic (web-based) formats.
2. Sign the open route network to make open routes more apparent and attractive than closed routes. Pursue funding for materials and staff needed to implement route and transportation facility signing efforts.
3. Conduct an appropriate level of maintenance consistent with established maintenance intensity levels on the designated transportation system.
4. Establish route closures and assess restoration needs based on inventory and monitoring. Pursue funding for route closure and reclamation if necessary; then begin reclamation of closed routes.
5. Establish or maintain partnerships with existing local groups and clubs and local, county, State, and tribal government organizations. As needed and when possible, recruit and train volunteers to establish monitoring patrols and place route markers to augment BLM efforts.

6. Install informational kiosks and signs. Maintain and upgrade existing kiosk boards as necessary.
7. Monitor compliance with the TMP route network designations, including the route network markers.
8. Make changes to the route network and adjust management strategies as necessary.

Breaking down these primary implementation actions into a more refined schedule of individual tasks serves to track implementation progress. Table L.3, below, provides a refined task list with phased scheduling and task notes.

Table L.3: TMP Implementation Action Tasks and Scheduling

Phase	Task	Implementation Notes
Phase I	Assign a FAMS navigational identification number to each route that is designated open or limited.	*Enter in FAMS. Update GIS database to "crosswalk" with evaluation and inventory numbers.*
Phase I	Develop and publish up-to-date, readily available map of the TMA BLM travel route network.	*This is the first step in the effort to increase public knowledge of the travel network and plans for its future. To be cost-effective, maps may cover an area larger than just TMA BLM lands.*
Phase I	Develop a signing plan and initiate an outreach program.	*This can be done at the District level.*
Phase I	Pursue funding for outreach literature, signs, and staff needed to implement the route-marking effort.	
Phase I	Establish databases and protocols for collecting monitoring data. Identify initial sites for resource monitoring.	*Clear identification of the information required would result in more effective monitoring and data recording.*
Phase I	Prepare for initial signing of network.	*As funding allows, this may include hiring seasonal trail ranger(s) or contracting for initial signing.*
Phase I	Sign the travel route network with route markers and inventory maintenance and restoration needs. Prioritize by area.	*The principal goal is to make the open and limited travel routes readily identifiable to users.*
Phase I	Set up partnerships with existing local groups and clubs and local, county, State, and tribal government organizations. As needed/possible, recruit and train volunteers to establish patrols and place route markers.	*Greater public compliance with OHV regulations may be achieved over time by involving user groups for this task.*
End of Phase I	Monitor compliance with the TMP route network. Publish an annual report online.	*The report could include pictures of some actions taken.*

Phase	Task	Implementation Notes
End of Phase I	Pursue funding for route reclamation. Establish restoration priorities using data from inventories and monitoring.	
Phase II	Take actions to reclaim "Closed and Decommissioned" travel routes that continue to receive vehicle traffic.	*Timely reclamation of decommissioned routes would reduce the potential for continued use.*
Phase II	Update travel network maps and re-publish as necessary.	
All Phases of Plan	Monitor and maintain the open route network markers based on direction in this guide's sign plan.	
Phase II or III	Install bulletin boards/kiosks at primary portals to public lands and where needed based on monitoring.	*Only install at non-portal sites if sites that require additional visitor information have been identified through monitoring.*
Phase III	Explore options for completing a visitor survey for each TMA.	

Funding Strategy

The BLM will seek adequate funding to manage and maintain the TMA's route network. Funding will be needed for labor and supplies to provide law enforcement, recreation and visitor services, outreach programs, the restoration and decommissioning of closed routes, and maintenance and operational costs (supplies, materials, tools, equipment, vehicles, communications, etc.). Operational and monitoring funding for cultural resources protection, wildlife surveys, transportation system maintenance, and related costs should be determined on an ongoing project basis and planned annually.

L.3.3 EDUCATION AND OUTREACH

Introduction

Public education and outreach are important priorities in implementing the TMP. Successful implementation includes providing the public with information about route designations, laws and regulations, land use ethics, safety notices, and resource values that may be affected by travel and transportation on public lands. Interpretive media will be distributed through news releases, traditional brochures and guides, travel maps, informational signing, social media sites, electronic media from BLM websites, and other means. Educational efforts will be coordinated with adjacent land managers to minimize user confusion and present a seamless message to the public across different land jurisdictions and media outlets.

Objectives

The main education objectives for the Labyrinth/Gemini Bridges TMP include attaining voluntary compliance with route designations and closures and reducing conflicts among public land users. Ensuring compliance with route designations will promote the safety of public land

users, facilitate resource protection by discouraging the proliferation of unauthorized routes, and help achieve other identified objectives.

The outreach initiative will promote respect for public, private, and state trust land by providing information on access to public lands, encouraging users to obtain permission from landowners if traveling across private or state trust lands, and by specifying where to get additional information and maps. Target messages or themes for this educational effort include:

- Public lands provide diverse recreational opportunities enjoyed by various users.
- Restricting travel to designated travel routes protects resources and public access.
- Tread Lightly! (www.treadlightly.org)/Leave No Trace (www.lnt.org) outdoor ethics
- Share the trail (https://www.imba.com/ride/ride-vibes).
- Respect other users of public land and the rights of private landowners.
- Be aware of current fire restrictions and help prevent wildfires.
- Practice OHV ethics and safety.
- Prevent the spread of invasive species.

Outreach Strategies

Effective communication with the public requires clear, concise messaging. This can be accomplished through direct and indirect public contact and through physical and virtual means. Though not exhaustive, the following list outlines potential targeted methods of communication:

- Kiosks and interpretive signage
- Visitor center displays
- In-person public presentations
- Paper and electronic format maps available to the public
    - General visitor map of designated route network (must follow mapping standards of the BLM's Publication Standards Manual Handbook (H-1553)).
    - Special area maps
    - Work with commercial map makers (National Geographic and Latitude 40) to ensure that their data reflects the updated travel plan
- Website/electronic media
    - Georeferenced PDF maps for viewing on portable electronic devices
    - ArcGIS Online map server
    - Google Earth keyhole markup language (KML) / keyhole markup language zipped (KMZ) files
    - Universal global positioning system (GPS) files (GPX)[15] for use with GPS units
    - GPS-compatible route and basemap data loaded on memory cards for sale online and/or at appropriate BLM offices and visitor centers
- Social Media

Signs are one of the most visible mediums used to convey information about the BLM and are often the only formal contact the public has with the BLM. Appropriate, consistent signing that

[15] A GPX is a text file for exchanging GPS data that can include waypoints, tracks, and routes.

conforms to national standards will help ensure a safe and enjoyable visit to public lands. For more specifics on signing, see this guide's sign plan (Section L.3.4).

Maps and other information relating to the travel and transportation network will be available to the public at a future date in paper and electronic form at visitor centers, on BLM websites, and displayed on informational kiosks throughout the TMA. The BLM will expand and improve educational efforts to foster responsible land-use ethics among different user groups by leveraging interpretive resources from recognized national organizations such as Tread Lightly! Inc. and Leave No Trace, both of which have signed National Memoranda of Understanding with the BLM. Educational materials will also include information on the impacts that inappropriate visitor behavior has on TMA resources or other resource uses. The BLM will incorporate information about public land values and user ethics into the terms and conditions of permits and land-use authorizations to reach a wider audience.

Partnerships

To achieve travel management implementation objectives, the BLM will seek to develop and maintain partnerships with a broad range of local, county, state, tribal, and federal agencies, as well as service-oriented volunteers, schools, and non-governmental organizations.

Partnerships enhance opportunities for community involvement in travel management implementation. Official partnerships may be established through agreements including memoranda of understanding, cooperative agreements, assistance agreements, landowner agreements, letters of agreement, and other types of documents for contributed goods and services.

L.3.4 Sign Plan

Signing is a key element in implementing comprehensive travel and transportation plans on the ground. The BLM will apply discretion and professional judgment to select the best signing methods for each situation using the guidance set forth in the Sign Plan BMPs, Appendix L.16.5, and may develop more detailed, area-specific plans as needed. The sign component of this guide is intentionally broad in scope. Rather than addressing specific sign needs, requirements, or locations, it establishes sign standards and guidelines for implementation and management of TMP objectives. This is not a static implementation plan; it may be modified as new signing needs are identified. Additional details for signs on BLM lands (installation, ordering, etc.) can be found in the BLM's 2016 National Sign Handbook (BLM 2016b) and the Federal Highway Administration's Manual on Uniform Traffic Control Devices, which is also known as the MUTCD (FHWA 2019).

L.3.5 Maintenance and Engineering

Overview

This section covers maintenance and engineering considerations for the TMA route network. The "Route-by-Route Details" list presented in Appendix L.16.4 shows the maintenance and engineering-related details for routes in the network at the time the TMP is approved. These routes will be added to the Ground Transportation Linear Feature (GTLF) dataset, which is the

most up-to-date dataset for Utah BLM, and updates in the route network in GTLF will serve as updates to the TMP.

The routes will also be included in the FAMS. Each route will have a FAMS route number, a primary route management objective, a functional classification, a FAMS asset type, maintenance intensity, FAMS inclusion/nomination status, and Federal Lands Transportation Program (FLTP) and Federal Lands Access Program eligibility status. More details on these implementation data types are provided later in this section.

Route maintenance on BLM lands can include general grading and shaping of route surfaces, maintenance and installation of water control structures, placement of gravel surfacing, washout repairs or realignment, etc. The BLM will maintain roads on public lands in the TMA as specified by maintenance intensities, and condition assessment developed and conducted in accordance with the following BLM roads manual and handbooks policies:

- Manual MS-9113 - Roads (BLM 2015a)
- Handbook H-9113-2 Roads Inventory and Condition Assessment Guidance & Instructions (2015b)
- Handbook H-9115-2 Primitive Roads Inventory and Condition Assessment Guidance & Instructions (BLM 2012c)

The conditions and use levels of routes determine what maintenance intensities they receive. Route conditions, design standards, and guidelines are based on average daily traffic, functional classifications, and terrain. Changes to the transportation network (e.g., new routes, re-routes, or closures) in the TMA are made through project-level planning with site-specific review as appropriate under applicable laws.

Maintenance efforts will focus on sustaining navigability for designated routes in the travel network without substantially changing the recreational experience that individual routes provide. In addition to the BLM, authorized users (e.g., miners, grazing permittees, and utility maintenance crews) have performed intermittent maintenance on roads in the past. Various agreements exist between the BLM and these authorized users to allow them to perform emergency spot maintenance on a case-by-case basis to restore access for authorized activities. A current route maintenance MOU exists between the MFO and Grand County and is expected to remain in place in the future. No matter who performs the work, the top priorities for route maintenance are public safety, protection and/or enhancement of resources, maintaining route standards, and ensuring consistency with route designation decisions.

Engineering Interface

This section describes the interface with the BLM Engineering program as an ongoing component of travel management planning and implementation. The components described below may only be fully attributed or documented as time and resources allow.

Routes in the Facility Asset Management System

The FAMS is the BLM's official database for the management of transportation system assets and facilities and plays a vital role in planning for the management and stewardship of BLM assets. All appropriate designated roads, primitive roads, and trails within the travel network

addressed in this TMP are classified as transportation assets in the FAMS and will be tracked in the FAMS as well as the GTLF geospatial database.

Routes in the Federal Lands Transportation Program

The BLM project lead will coordinate with BLM engineering staff to determine which routes are eligible for FLTP status. FLTP-eligible routes are:

- Owned and maintained by the federal government
- Important and highly valued by the BLM
- Located on, adjacent to, or provide access to federal lands
- Included in the national Federal Lands Transportation Facilities (FLTF) inventory

Routes in the FLTP provide access to high-use recreation locations and federal economic generators. Documenting FLTP eligibility for FLTP funding is a requirement for travel management plans (TMPs) in the 2016 BLM Travel Management Manual (BLM 2016c).

Route Functional Classifications

The BLM uses three functional classifications (collector, local, and resource) to categorize its roads.[16] These classifications reflect the area served, type and volume of traffic, and maintenance standards. These classifications are described in the subsections below, with text taken from the BLM roads manual (BLM 2015a):

> Collector Roads: "These BLM roads normally 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 of all the roads in the Bureau system. User cost, safety, comfort, and travel time are primary road management considerations. Collector roads usually require application of the highest standards used by the Bureau. As a result, they have the potential for creating substantial environmental impacts and often require complex mitigation procedures."
>
> Local Roads: "These BLM roads normally serve a smaller area than collectors and connect to collectors or public road systems. Local roads receive lower volumes, carry fewer traffic types, and generally serve fewer uses. 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 effect of terrain, may be single lane roads with turnouts. Environmental impacts are reduced as steeper grades, sharper curves, and lower design speeds than would be permissible on collector roads are allowable."
>
> Resource Roads: "These BLM roads normally are 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 use. Use restrictions are applied to prevent conflicts between users needing the road and users attracted to the road. The location and design of these

[16] Not all routes are considered "roads" in the context of BLM travel management. For example, a trail is a route but not a road. Therefore, functional classifications only pertain to roads and primitive roads. Most of the BLM-managed routes in the TMA function as resource roads.

roads are governed by environmental compatibility and minimizing Bureau [BLM] costs, with minimal consideration for user cost, comfort, or travel time."

Primary Route Management Objectives

The primary route management objective for each route influences the type of maintenance and engineering to be applied to it. The BLM's GTLF guidelines state that the primary route management objective is "the BLM's reason for the route. [It] summarizes multiple reasons into a single presentable statement" (BLM 2014c). Primary route management objectives "should reflect management area direction, including desired future conditions, uses, recreational outcomes and settings, as well as TMP objectives" (BLM 2016c). The BLM's GTLF guidelines (BLM 2014c) notes three possible individual route management objectives:

- *Access* - Access to specific location for specific task/project.
- *Connectivity* - Primary objective is travel between 2+ other routes.
- *Experience* - Primary objective is to provide for recreational experience.

Travel Route Best Management Practices (BMPs) and Standard Operating Procedures (SOPs)

The following BMPs and SOPs will be applied to travel routes in the TMA:

Best Management Practices

- Road Drainage
    - Provide adequate drainage from the surface of all roads by using out sloped or crowned roads, drain dips, or in sloped roads with ditches and cross-drains or relief culverts.
    - Vary road grades to reduce concentrated flow in ditches and culverts and on fill slopes and road surfaces.
    - Size drainage structures appropriately to handle anticipated flow during normal runoff or storms.
    - Locate relief culverts or roadside ditches to prevent fill erosion or direct discharge of sediment into streams.
    - Prevent cross drains, culverts, water bars, dips, and other drainage structures from discharging onto erodible soils or fill slopes without outfall protection.
    - Plan natural road cross-drainage by in-sloping and using relief culverts or out-sloping and by grade changes. Plan for effective and proper spacing for dips or water bars based on road grades and soil erosion potential.
    - Design roads for minimal disruption of drainage patterns.
- Road Maintenance
    - Maintain erosion control features through periodic inspection and maintenance, including cleaning drainage dips and cross-drains, repairing ditches, marking culvert inlets to aid in location, and clearing debris from catch basins and culverts.
    - Avoid using roads during wet periods if such use would damage the road surface (i.e., cause rutting) and impact drainage features (i.e., breach drain dips).

    - Grade road surfaces only as often as necessary to maintain a stable running surface and effective surface drainage.
    - Conduct spot maintenance on primitive roads to correct safety issues, conserve resources, or to maintain desired recreation experiences. In most cases, grading the full length of primitive roads is not required or desired.
    - Route maintenance will occur within the route prism.
- Design features for Threatened and Endangered species and BLM Sensitive plant habitat
    - All efforts will be made to avoid disturbance in potential habitat areas.
    - Maintenance activities will occur outside crucial growing periods.
    - Dust will be suppressed using water.
    - If disturbance outside the existing travel surface is required for maintenance activities, then surveys will be conducted within suitable habitat. If Threatened and Endangered plants are located, then appropriate consultation with FWS will be initiated.
- General
    - Ensure that road specifications and plans are consistent with good safety practices.
    - Location, design, construction, and maintenance of roads, primitive roads, and trails should comply with guidelines identified in the BLM Roads Manual (BLM 2015a), the BLM Primitive Roads Manual (BLM 2012d), the U.S. Forest Service's Trail Construction and Maintenance Notebook (USFS 2007), Guidelines for a Quality Trail Experience: Mountain Bike Trail Guidelines (BLM and IMBA 2017), and the National Off-Highway Vehicle Conservation Council's Great Trails resource guide (Duford 2015).
    - Emphasize the use of existing roads (through continued use or reconstruction) to minimize new road construction.
    - Adapt plans to the soils and terrain to minimize disturbance and damage to soil productivity, vegetation, water quality, and wildlife habitat.
    - Implement mitigation techniques when designing and implementing the route system.

<u>Standard Operating Procedures</u>

- Standards and guidelines shall be followed per BLM Manuals 9113 (BLM 2015a), 9114, and 9115 (BLM 2012d) for BLM road, trail and primitive road maintenance, new construction, or reconstruction.
- The standards and guidelines for primitive roads shall be based on the functional requirements of the various types of recreational motorized users.
- The BLM should not develop, endorse, or publish road or trail ratings. The BLM will describe the physical aspects of a road, primitive road, trail, or recreation site as necessary to avoid visitor inconvenience and align visitor expectations with existing conditions.

- Maintenance will be completed only to the identified maintenance intensity level in support of resource protection, delivery of services to the public, and public safety.
- Maintenance standards for each designated route will be documented, and route modifications will be identified and recommended if necessary.
- 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 and available resources.
- Once the number and type of barriers is determined, maintenance procedures for physical barriers will be developed and tracked manually or systematically by a system such as the FAMS.

Maintenance Intensities

Routes in the TMA network will be maintained in accordance with assigned maintenance intensities and in consideration of resource issues. Maintenance intensities provide guidance for the minimum standards of care for the annual maintenance of BLM routes based on identified management objectives (natural, cultural, recreation setting, and visual). Each maintenance intensity category provides operational guidance to field personnel on the appropriate intensity, frequency, location, and type of maintenance activities that will be undertaken to keep routes in acceptable condition. They do not describe route geometry, type, types of use, or other physical or managerial characteristics of routes.

The aim of BLM route maintenance in the TMA is to sustain navigability for network roads, primitive roads, and trails without substantially changing the routes' recreational experiences. The top priorities are to protect visitors, reduce hazards, and prevent the degradation of resources.

Based on resource management needs and functional classifications, each route in the TMA will be assigned a maintenance intensity level, which provides the basis for route maintenance in the BLM FAMS database.

Table L.4, below, describes maintenance intensities. The table's maintenance intensity descriptions are derived from the first appendix item of the BLM Roads Manual (BLM 2015a). Details on the objectives and funding levels for each maintenance intensity are also in the BLM's Roads Manual.[17] Most primitive roads are likely to have low maintenance intensities but will be managed to protect sensitive resources and provide for an acceptable level of health and safety risk given the type of use. Maintenance intensity levels provide the basis for performing maintenance and updating the BLM GTLF and FAMS database for the TMA.

Table L.4: Maintenance Intensities Under Chosen Alternative

Maintenance Intensity	Descriptions of Routes Under Each Intensity Level
Level 0	Existing routes that would no longer be maintained or declared as routes. Routes identified for removal from the Transportation System entirely.

[17] The BLM Roads Manual referenced above mentions maintenance intensity levels 2 and 4, which are not in the table below because they are "Reserved for Possible Future Use."

Maintenance Intensity	Descriptions of Routes Under Each Intensity Level
Level 1	Routes where minimal (low-intensity) maintenance is required to protect or access adjacent lands and resource values. These roads may be impassable for extended periods of time.
Level 3	Routes requiring moderate maintenance due to low volume use (for example, seasonally or year-round for commercial, recreational, or administrative access). Maintenance intensities may not provide year-round access but are intended to generally provide resources appropriate to keep the route in use for the majority of the year.
Level 5	Routes for high (maximum) maintenance because of year-round needs, high-volume traffic, or significant use. May also include routes identified through management objectives as requiring high intensities of maintenance or to be maintained open year-round.

Upgrading a road's surface, width, or permanently raising the maintenance intensity level on a specific route may change the network, and therefore may trigger the need to determine if additional environmental analysis is required.

Transportation Facilities

This TMP does not identify specific network-related facilities that may need improvement or development. Such proposed improvements or development would be addressed in specific activity-level or project-level proposals and be subject to site-specific analysis under the NEPA. Examples of such proposed improvements or development include campsites, staging areas, protective fencing, barriers, information kiosks, administrative gates, trailheads, and non-motorized trails. Once completed, these improvements or developments would be incorporated into this TMP and considered part of the travel network.

New Route Development

The addition of new routes is part of the operation and management of the overall travel network. New route development may be appropriate, depending on the situation. For example, resource protection or administrative concerns might necessitate the relocation of an existing route. The BLM or members of the public might request new routes to improve or enhance access or experiences (e.g., creating a travel loop). Engineering staff will be involved early in the process of planning, locating, designing, constructing, and choosing and applying BMPs associated with new routes. New routes and changes to the network will require an appropriate level of NEPA review.

New routes may be proposed through site-specific project plans, permits, or ROW requests. The route evaluation process and NEPA review (both of which may be done concurrently) must occur prior to the implementation or construction of a new route. If authorized, new routes and any associated ROWs would become part of the designated transportation system; closed routes would be removed from the transportation system. The BLM's Travel Management Manual (BLM 2016c) provides broad guidelines on how to appropriately add new routes to a BLM travel network.

All new roads, primitive roads, and trails shall meet the standards for design, construction, and maintenance found in BLM manuals and handbooks (e.g., "Appendix 8: Trail Planning and

Standards" in the BLM Travel and Transportation Management Handbook (BLM 2012a)). Among other guidance, all new TMA routes shall meet the standards for design, construction, and maintenance found in the BLM's Roads Design Handbook (BLM 2011) and Primitive Roads Design Handbook (2012b). Such guidance provides details on specific design requirements such as degree of curvature, sight distance, alignment, etc.

Route Realignment or Upgrade

Route widening, realignments, or travel surface upgrades may occur if:

- Necessary to achieve route standards or management objectives.
- Necessary for public safety.
- Planned in accordance with TMA route maintenance and construction standards.
- Appropriately addressed in a project-level EA or other NEPA document.

Processing of Proposed Route Changes

The process of adding new routes (OHV) or adding administrative routes to the designated route network and implementing other route changes require appropriate NEPA review. All proposed route changes may be processed as follows:

- Route locations will, at a minimum, be provided via a map or located using accepted GPS devices and presented to the BLM (if proposed by a third party) for consideration. Locations of route proposals off designated OHV routes will be documented and mapped using non-OHV methods. The proposed location will be staked and flagged or otherwise identified for on-the-ground review by resource specialists. The BLM may require that a licensed surveyor provide a cadastral survey (to be reviewed by a BLM cadastral surveyor) of a route prior to issuance of a ROW authorization.
- Route proposals submitted to the BLM shall include a description of the route (including its proposed width), its proposed use(s) (including expected traffic and design vehicle), and rationale for its need.
- The route location shall be analyzed for potential conflicts, such as (but not limited to): wildlife habitat and movement, adverse effects to NRHP -eligible cultural resources, visual resources, other recreation uses, mining claims or leases, grazing facilities, ROWs, public safety, and proximity to other jurisdictions (such as private land). A structured process will be used to evaluate and document potential route conditions.
- The conflict assessment may lead to development of mitigation actions or alternative locations or designs.
- NEPA review will be conducted to determine the environmental effects of the proposed route, any reasonable alternatives, and recommended mitigation.
- A decision will be issued by the field manager based on 2008 RMP conformance, resource objectives, and environmental impacts.
- If the decision is to approve the addition of the route, this TMP will be updated accordingly.

L.3.6 ENFORCEMENT

Overview

Law enforcement coverage in the TMA is currently provided by BLM law enforcement and local sheriff and/or police departments. The BLM maintains the authority to temporarily, permanently, partially, or completely suspend any activity based on safety issues or unacceptable resource impacts. Enforcement actions typically occur in response to complaints, and patrols are conducted on a periodic basis, depending on other priorities. Typical law enforcement concerns related to public use in the TMA include route proliferation, dumping, vandalism, theft of government property, littering, interfering with livestock operations, medical emergencies, search-and-rescue operations, illegal removal of natural resources, unauthorized cross-country OHV use, firearms violations, and driving under the influence of alcohol or drugs. State vehicle laws will be applied to OHV use where applicable. The following measures are key to effective law enforcement in the TMA:

- Provide for a regular and systematic presence of BLM and partner agency law enforcement.
- Expand and maintain interagency cooperation.
- Increase public education efforts to promote awareness of and voluntary compliance with use restrictions and regulations through information posted on handouts, kiosks, and websites, etc.
- Prioritize the use of limited law enforcement resources to the greatest effect:
    - Concentrate law enforcement efforts during high-use periods such as weekends and holidays.
    - Focus targeted enforcement in the highest-use areas.
- Support volunteer efforts to educate the public on rules and proper land use etiquette, such as non-governmental organizations leading Leave No Trace seminars.

Regulations to be Enforced

The public land regulations described in 43 CFR Part 8340 (GPO 2016), 43 CFR Part 8360 (GPO 2009a), and 43 CFR § 9268.3 (GPO 2001) will be enforced in the operation and management of the designated travel network within the TMA. These regulations will be enforced by BLM law enforcement officers to protect public safety and resources. They may be supplemented as deemed necessary by Supplementary Rules, which may be established pursuant 43 CFR Part 8360 under a separate action to implement use restrictions identified in RMP decisions. State of Utah motor vehicle laws and regulations, including OHV regulations, apply on BLM-administered lands in the TMA and will continue to be enforced.

Patrols

In addition to responding to complaints, emergency situations, and where monitoring has found user conflicts or resource concerns, BLM law enforcement officers and field staff will focus patrols to detect and deter ongoing and potential future illegal activity, check compliance with route designations, and educate visitors about BLM, state, and federal laws and regulations. During regular patrols, law enforcement officers and field staff will document observed OHV impacts to resources as appropriate or as a general component of monitoring. Routine, highly

visible patrols by BLM staff will also help to maintain an effective authoritative presence in the field.

Personnel from partner agencies, such as the Utah Division of Wildlife Resources (UDWR), Utah State Parks, the Grand County Sheriff's Department, and the Utah Highway Patrol may also assist BLM staff with law enforcement duties on BLM-administered lands in the TMA. Local police departments may patrol in wildland-urban interface areas. Coordinated interagency efforts may be undertaken to provide an official presence during times of peak use or to supplement ongoing resource protection-related operations.

L.3.7 SUPPLEMENTARY RULES

Supplementary rules can be established where current regulations (including route designations) do not provide adequate public safety or resource protection. See 43 CFR § 8365.1-6 (GPO 2009b) for the supplementary rulemaking process. Developing and posting speed limits is an example of a supplementary rule that could be drafted and applied within the TMA.

L.4 LONG-TERM MONITORING PROTOCOL FOR OHV IMPACTS AND OTHER ITEMS

L.4.1 OVERVIEW

Introduction and Purpose of Monitoring

Monitoring is an important component of successful TMP implementation. Monitoring efforts will help determine the effectiveness of route management and inform the BLM on route use-related issues that may need to be addressed. The EA identified a number of important resource and use issues at the heart of the BLM's commitment to provide for multiple land uses while protecting sensitive cultural and natural resources. The following issues are of particular importance in the TMA:

- Impacts of OHV travel on known cultural resource sites
- Soil erosion and its resulting impacts on vegetation
- OHV-related disturbances of special status species plant habitat or populations
- OHV-related disturbances on special status species wildlife habitat or populations
- Impacts from OHV travel on the defining characteristics of lands with wilderness characteristics and other special management area designations
- User conflicts within the TMA
- Route proliferation within the TMA

As required in 43 CFR § 8342.3 ("Designation changes"), "The authorized officer shall monitor effects of the use of off-road vehicles. Based on 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" (GPO 2016). In the broadest sense, monitoring helps to determine if adequate progress is being made toward management objectives. Among other things, this means that the monitoring program will be used to determine:

- If resource protection and resource use objectives are being met.
- Visitor satisfaction.
- Use patterns and volumes.
- The condition of roads and trails, the condition of public use areas, and compliance with route designations and use restrictions.
- The effectiveness of cross-jurisdictional enforcement.

Additional monitoring information and materials can be found in Appendix L.16.2.

Where to Find Monitoring Guidance

Monitoring requirements can be found in the Biological Opinion, Historic Properties Treatment Plan (HPTP), and specific route evaluation reports. Additional monitoring will occur as part of ongoing monitoring and other resource monitoring (such as wilderness monitoring, lands with wilderness character inventory, visual resource inventory, sensitive species monitoring, range management monitoring, new project site consideration etc.). The BLM will compile specific monitoring requirements from the Biological Opinion, HPTP, and specific route evaluation reports into a checklist so that those monitoring requirements can be tracked and documented.

Who Conducts Monitoring

An effective monitoring program is dependent on establishing a cadre of monitoring personnel who work with the BLM to report issues or concerns that they encounter while performing their normal daily activities. Monitoring may be conducted by BLM staff, UDWR personnel, commercial Special Recreation Permit holders, grazing permittees, and other partners as approved or authorized by the BLM.

Baseline Monitoring Data

In compliance with the 2017 Settlement Agreement, the MFO assembled the Labyrinth/Gemini Bridges Travel Management Plan Baseline Monitoring Report (BLM 2019). This report can be found on this project's ePlanning page.

Assembling this report involved collecting information on visually apparent unauthorized surface disturbances off routes as well as visually apparent damage to public lands resources caused by OHV use within lands with BLM-inventoried wilderness characteristics. The baseline monitoring data was used to help inform route decisions within the TMP. See Appendix L.16.2 for more details on baseline monitoring report requirements associated with the 2017 Settlement Agreement.

L.4.2 Types of Monitoring

Introduction

There are three basic types of monitoring detailed in this guide: implementation, effectiveness, and resource monitoring. Implementation and effectiveness monitoring assess the effectiveness of management actions. Resource monitoring documents how various indicators of resource health change over time.

Implementation Monitoring

Implementation monitoring is the most basic type of monitoring, and simply determines whether management actions in the TMP have been implemented in the manners prescribed by the applicable planning documents. Implementation monitoring documents the BLM's progress toward full implementation of land use plan (i.e., 2008 RMP) decisions. There are no specific thresholds or indicators required for this type of monitoring.

Effectiveness Monitoring

Effectiveness monitoring is used to determine if TMP implementation activities have achieved 2008 RMP goals and objectives. Effectiveness monitoring results are used to evaluate implementation progress and the effectiveness of the TMP in achieving desired outcomes and conditions. If adverse impacts are discovered, effectiveness monitoring results will also be used to identify adaptive management measures. Effectiveness monitoring will evaluate route conditions, public safety issues, and changes in visitor use patterns and preferences. Effectiveness monitoring may also quantify OHV user compliance.

Effectiveness monitoring asks the following question: Was an activity successful in achieving its objective? Effectiveness monitoring requires knowledge of the objectives established in the 2008 RMP as well as indicators that can be measured. To see the 2008 RMP's travel management-related goals, objectives, and management decisions, see Appendix L.16 of this guide. Indicators are established by technical specialists to address specific questions and avoid unnecessary data collection. Effectiveness is measured against the benchmark of achieving the goals and objectives established by the 2008 RMP, which may include regulated standards for resources. Effectiveness monitoring for the route network will be conducted by staff, volunteers, users, and partners *as time and funding permit*; it may include the following elements:

- Visually document implementation or establishment of closure practices (signs, gates, berms, rocks, etc.) or road decommissioning practices and monitor effectiveness of closure. Establish photo-monitoring points to monitor long-term effectiveness of closing/decommissioning routes.
- Determine the level of OHV use across the landscape using trail counters and aerial photos over time. Traffic counters may be employed to determine levels of use on selected routes.
- Identify route proliferation, unauthorized route creation, route conditions, recreation conflicts, and resource damage compared to baseline monitoring. Measure illegal off-trail and off-road travel as linear disturbances or as area impacts, depending on the level and type of use that occurs.
- Monitor litter/trash.
- Monitor reclamation project success.
- Initiate and maintain collaborative partnerships among government agencies, local governments, business communities, volunteers, user groups, stakeholders, educational institutions, individuals, and the private sector to achieve recreation management objectives through BLM-developed monitoring techniques.

- Quantify OHV user compliance and evaluate route conditions, public safety, and changes in visitor preferences and use patterns. It may also help to identify adaptive measures as adverse impacts are discovered.
- Administer a survey on recreation demand, preferences, uses, satisfaction, and information needs in the TMA. This should be done as soon as possible, and maps updated periodically. Work with partners such as universities and user groups to conduct the surveys. Base specific schedule of surveys on TMA conditions and available resources.
- Acquire visitor feedback to monitor whether TMA BLM lands have been clearly mapped and signed for the public. This could be done as part of the survey efforts described above.
- Consider information from recreational groups, records of field contacts, written trail register comments, and public phone calls to the MFO as part of monitoring the effectiveness of travel management in reducing conflict between different types of users.
- Monitor signing effectiveness through field visits and consideration of amounts of maintenance required.
- Assess primitive road and trail conditions.
- Assess indicators of potential recreation impact issues (e.g., number of new bare soil areas attributable to visitor use, number of campfire pits, additional litter or trash along primitive roads, etc.).

Resource Monitoring

Resource monitoring documents how implementation of the TMP influences natural resources over time. Validating management actions' effects on natural resources is more complex than determining the result of compliance or effectiveness monitoring.

Resource monitoring will be adaptive- monitoring protocols or techniques may be adjusted as new methods are developed or if it is discovered that current monitoring is not meeting management information needs. Routes with "Open with Management" or "Limited with Management" designations have monitoring specified for various resources, and those resource monitoring protocols will be implemented (subject to funding and available resources) on or along those specific routes. Resource monitoring may be accomplished through standard field office protocols in accordance with the 2008 RMP (see below).

TMA-Specific Monitoring

Appendix E in the 2008 RMP includes specific monitoring guidelines applicable to various resources/uses. Although various resources/uses could somehow be impacted by travel management, these guidelines include specific methodologies for OHVs, travel and transportation management, and recreation (see table below).

Table L.5: 2008 RMP Travel Management-Related Monitoring Methodologies

Resource	Suggested Monitoring and Methodology
Travel Management	Travel management and OHV use monitoring within the planning area will focus on compliance with specific route and area designations and restrictions with primary emphasis on those routes or areas causing the highest levels of user conflicts or adverse impacts to resources. Monitoring

Resource	Suggested Monitoring and Methodology
	will focus on the travel designation requirement that all motor vehicles remain on designated routes. Monitor the effect of the use of off-road vehicles. On the basis of information so obtained, and whenever necessary, the designations may be amended, revised, revoked, or other action taken. Modifications to the route system in the Approved RMP will not be considered until implementation of the travel portion of the plan has been substantially completed which includes mapping, signing, monitoring, and evaluation. The process for considering route modifications will be detailed in the Implementation Plan developed for the RMP after completion of the ROD. BLM could impose limitations on types of vehicle allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife, wildlife habitat, cultural or vegetative resources, especially by off-road travel in an area that is limited to designated roads. 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). Actual route designations within the "Limited" category can be modified without completing a plan amendment, although NEPA compliance is still required.
Resource	Suggested Monitoring and Methodology
Recreation	Designated roads and trails will be monitored to ensure compliance with the administrative goals of maintaining or meeting Utah Rangeland Health Standards. Designated dispersed campsites will be visited to ensure that motorized camping vehicles are using single paths to the campsite.
Travel	Travel management and OHV use monitoring within the planning area will focus on compliance with specific route and area designations and restrictions, with primary emphasis on those routes or areas causing the highest levels of user conflicts or adverse impacts to resources. Route or area closures will be regularly monitored for compliance. Findings will be reported in the annual report.

When monitoring indicates that use of a designated route is resulting in unacceptable resource degradation, the adaptive management process (see Section L.4.3 below) will be triggered and applied.

Field Specific Monitoring Protocols

This section describes how implementation, effectiveness, and resource monitoring will be accomplished.

Ad hoc monitoring

BLM staff will be briefed on the issues addressed in the EA and alerted to informally monitor for related resource impacts as they go about their daily work within the TMA. They will be directed to pay close attention to any unauthorized off-route use and apparent user conflicts. During ad hoc monitoring BLM staff may use the “Motor Vehicle Impact Monitoring Protocol,” similar protocol, or may provide a description of the location and impacts to the appropriate resource staff (Field Manager, Assistant Field Manager, Outdoor Recreation Planner, Field Technician, etc.).

Ad hoc monitoring results will be used to help the BLM continually adapt its strategic monitoring efforts including focusing law enforcement patrol to particular areas if needed. Ad hoc monitoring may include input from authorized users and members of the public who should

be encouraged to supply such information. Ad hoc monitoring may also include general consideration of the route itself and maintenance, signing, or other needs that should similarly be passed to appropriate BLM staff.

Strategic monitoring

The BLM will conduct strategic monitoring based on requirements from the Biological Opinion, HPTP, and specific route evaluation reports. Additional strategic monitoring will occur as part of ongoing monitoring and other resource monitoring (such as wilderness monitoring, lands with wilderness character inventory, visual resource inventory, sensitive species monitoring, range management monitoring, new project site consideration etc.).

The BLM will compile specific monitoring requirements from the Biological Opinion, HPTP and specific route evaluation reports into a checklist so that those monitoring requirements can be tracked and documented.

L.4.3 Adaptive Management

Overview of Adaptive Management

Adaptive management is a decision process that "promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood" (Williams et al. 2009). A similar definition is found in 43 CFR § 46.30 (GPO 2011). In adaptive management, problems are assessed, designs are formulated to address problems, and then designs are implemented. During and after implementation, the BLM conducts monitoring, gathers and evaluates data, and adjusts management based on new findings. However, new problems could arise, or new approaches might be tried after management is adjusted, which could start the cycle over again. Figure L.1, below, shows the cycle of adaptive management.

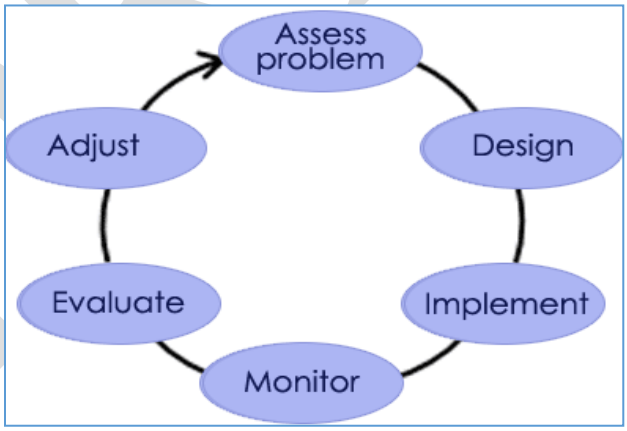

Figure L.1: Adaptive Management Cycle

Implementing Adaptive Management in the TMA

Some designated routes in the TMA are in or near resources of concern (e.g., special status plants or wildlife, highly erosive soils, etc.) and mitigation is highlighted in route evaluation forms. In addition, Appendix L.16.7 details management strategies for habitat evaluations and

monitoring within special status species habitat. The BLM should mitigate adverse effects throughout the TMA on a case-by-case basis as directed in the 2008 RMP. For designated routes identified for adaptive management, results from ongoing monitoring and assessment may be used to adjust and improve management decisions over time. For TMA BLM-administered lands, sufficient monitoring must be planned to determine whether adequate progress is being made toward achieving priority tasks. If progress is insufficient to achieve tasks in a realistic time period, management actions should be revised.

Adaptive management monitoring may be based on Limits of Acceptable Change indicators. Below are some examples of Limits of Acceptable Change indicators/triggers which may require adjusting the TMP:

- Desired recreation experiences are not being met as determined by surveys, visitor sign-in logs, or other data-gathering processes conducted in the TMA
- Habitat conditions of priority or special status species continue in a downward trend as a result of recreation or travel impacts
- Riparian condition trend is not improving as a result of recreation or travel impacts
- There is degradation of cultural sites or wilderness area boundaries

Adaptive management monitoring focuses on changing conditions that could affect route designations. Through adaptive management, the BLM may modify the TMP to respond to a variety of issues or concerns that could arise in the TMA throughout the life of the TMP. Some more general examples of factors that might alter management are listed below:

- Need to create new roads to access private property, mining claims, public utilities, or other needs
- User-created route proliferation
- Listing of additional special status plant and animal species
- Discovery of additional resources
- Availability of funding to manage and operate the travel management network

Applying adaptive management is an essential component of travel planning. Throughout the life of the TMP, the BLM may use adaptive management and rely on monitoring data to improve this plan. Modification actions based on adaptive management may require additional site-specific analysis in accordance with the NEPA.

L.4.4 Route Designation Changes

The TMP will remain in effect until revised or replaced by a completely new TMP, RMP revision, or amendment supported by an appropriate level of NEPA. The TMP may be updated and maintained as monitoring and adaptive management indicate changes are needed to individual route designations to protect resources or ensure user safety. In addition, any individual, organization, or governmental body may propose that a current route designation be changed. Requests to change route designations must be submitted in writing to the MFO Field Manager and will be processed as follows:

- Upon receipt of a route change proposal, it will be reviewed by the Field Manager. The Field Manager will determine whether the proposal has merit. If the request is rejected, a

letter will be sent to the requester indicating the reasons for rejection. If accepted, the request will be forwarded to the appropriate BLM staff and reviewed for recommendations as to the appropriateness of the proposal, and levels of required NEPA review and analysis. When accepting a proposal, the Field Manager will consider cost recovery.

- Modifications of the road network during implementation of the TMP may require new site-specific review as appropriate under the NEPA.
- Modifications and minor realignments, including alignment changes made through implementation actions shall be documented in the official record, kept on file in the MFO, and considered as an update to the TMP.

The Moab Field Manager has the authority to make final decisions on route changes. A formal decision to accept or reject a specific request for a route change will only be issued following an appropriate level of NEPA review that includes evaluation of a proposal's effect on the total travel network.

L.4.5 TRACKING PLAN IMPLEMENTATION PROGRESS

In accordance with the BLM travel management manual, "Field offices will track planning and implementation progress using the travel management module in the Recreation Management Information System. States will track statewide progress through long-range transportation plans (see section 6.8 (of the travel management manual)) using the BLM state's TTM planning schedule" (BLM 2016c).

L.5 MITIGATION

L.5.1 OVERVIEW

Travel management-related mitigation is prescribed and executed at multiple levels: first, as described in the 2008 RMP; second, as a component of the selection of a travel network alternative where routes are assigned an OHV designation that considers impacts to resources, route purpose and need, route redundancy, etc.; and third, as specific mitigation measures prescribed by the BLM IDT during route evaluation and documented in route evaluation reports. Many of the routes with "Open with Management" or "Limited with Management" designations have specific mitigation measures prescribed (e.g., applying erosion control measures on a route segment that has ongoing erosion issues). For route-specific mitigation details, see the route reports for this project as well as in Appendix L.16.2 of this Guide.

Additional mitigation will also occur as a result of resource monitoring via adaptive management. Emerging issues (related to specific routes and management actions) may be identified through adaptive management monitoring, and mitigation would be applied if monitoring reveals that conditions require mitigation. Typical mitigation measures would be the BMPs that respond to identified resource or resource use issues. Monitoring would continue to be done during and after mitigation measure implementation.

L.5.2 TRAVEL MANAGEMENT MITIGATIONS IN THE 2008 RMP.

The 2008 RMP provides the following management statements that are closely tied to travel management mitigation.

Table L.6: 2008 RMP Travel Management-Related Mitigation Guidance

Management Decisions	
TRV-5	BLM could impose limitations on types of vehicle allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife, wildlife habitat, cultural or vegetative resources, especially by off-road travel in an area that is limited to designated roads.
TRV-8	Where the authorized officer determines that off-road vehicles are causing or will cause considerable adverse impacts, the authorized officer shall close or restrict such areas. The public will be notified as to these closures and restrictions.
TRV-9	Any routes that are not baseline routes will be signed "Closed" on the ground. Such routes will be considered as impacts to the area's natural character, and use of such routes will be considered cross country use and not allowed. Non-inventoried routes should be rehabilitated.
TRV-14	Limit mechanized (mountain bike) travel to designated trails and managed routes for resource protection purposes. Routes that are no longer available for motorized travel may be converted to bike routes upon application of site-specific NEPA analysis.
"Mitigations" section (N.7.2.2) from Appendix N	
	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.

L.5.3 ROUTE MANAGEMENT MITIGATION ACTIONS FOR VARIOUS IMPACT SCENARIOS

Appendix L.16.6 presents examples of route management mitigation actions that address potential route-related resource concerns for riparian areas and water quality, wildlife and vegetation, user conflicts, vandalism, etc. The BLM Travel Management Handbook (BLM 2012a) has additional examples of mitigation measures in "Appendix 5: TTM Challenges and Solutions for Recreation/Trail Management."

L.6 ROUTE CLOSURES

L.6.1 INTRODUCTION

Under certain circumstances, to protect public health and safety or prevent unnecessary or undue resource degradation due to unforeseen circumstances (e.g., catastrophic wildfire resulting in destabilized soils and unsafe conditions in a critical watershed), routes may need to be closed or restricted. The authority for implementing such closures and restrictions is given in Section 302 of the Federal Land Policy and Management Act, which requires the Secretary of the Interior to take action to prevent unnecessary or undue degradation of the lands.

The two principal federal regulations for closures and restrictions during TTM are the special rules provided for OHV management in 43 CFR § 8341.2 (GPO 2000) and the closures and restrictions for visitor services in 43 CFR § 8364.1 (GPO 2004).

L.6.2 CLOSURES IN GENERAL

The 2008 RMP states, "Where the authorized officer determines that off-road vehicles are causing or will cause considerable adverse impacts, the authorized officer shall close or restrict such areas. The public will be notified as to these closures and restrictions." 43 CFR § 8364.1 regulates the ability of the authorized officer to close or restrict a specific use or uses of the public lands for the protection of persons, property, and resources. Unlike the special rules found in 43 CFR § 8341.2, these closure and restriction orders can apply to any transportation mode or activity but require a formal notification process, including Federal Register publication. The use of this authority is limited to two years by policy, but extensions are approved on a case-by-case basis. NEPA compliance is required for use of this authority.

L.6.3 EMERGENCY CLOSURES

Emergencies are unforeseen events of such severity that they require immediate action to avoid dire consequences. In the event of an emergency, immediate actions (e.g., closures or public land use restrictions) must be taken to prevent or reduce risks to public health or safety, property, or important resources. Section 2.3 of the BLM NEPA Handbook (BLM 2008a) defines the following actions as typical emergency situations:

- Cleanup of a hazardous material spill
- Fire suppression activities related to ongoing wildland fires
- Emergency stabilization actions following wildland fires or other disasters

L.6.4 TEMPORARY CLOSURES

Where OHV activities are causing considerable adverse effects to resources, temporary closures can be implemented under the authority of 43 CFR § 8341.2 and § 8364.1. The purpose of a temporary closure and restriction is to protect public health and safety or prevent undue or unnecessary resource degradation due to unforeseen circumstances and should not be used in lieu of permanent closures. The BLM's Travel Management Manual states,

> Where off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife and fisheries habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas will be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures are implemented to prevent their recurrence (43 CFR § 8341.2). (BLM 2016c)

If site, issue, or resource-specific evaluation is deemed adequate through the NEPA analysis process associated with either the 2008 RMP or the EA for this TMP, temporary closures and restrictions exercised under this process may not require further NEPA review. This may include closure of routes or areas.

L.7 ROUTE DECOMMISSIONING AND RECLAMATION

L.7.1 OVERVIEW

When a closed route is successfully decommissioned and reclaimed, it should blend into the surrounding natural landscape. Effective reclamation of closed routes is important for meeting a variety of management objectives, including:

- Attainment and maintenance of physical and social settings that support prescribed recreation opportunities and outcomes in SRMAs.
- Reduced visitor confusion resulting from unmarked non-system routes.
- Increased visitor safety through reclamation or rerouting of unsafe non-system routes.
- Reduced operation and maintenance costs associated with un-reclaimed routes slated for reclamation.
- Restored natural appearance of the landscape.
- Restored natural habitat and reduced habitat fragmentation.

See Appendix L.16.3 for details on reclamation methods as well as the routes that are earmarked for reclamation under the chosen alternative. Note that not all routes designated as OHV-Closed are decommissioned, as they may remain available for authorized use or other non-OHV uses.

L.7.2 PRIORITIES

Certain routes earmarked for reclamation will have a higher implementation priority than others, as determined by the BLM's resource specialists. The BLM will prioritize reclamation in special management areas (e.g., SRMAs), special designation areas (e.g., ACECs, etc.), and other sensitive areas. In general, initial reclamation efforts may focus on the following priority types, in order of importance:

1. Routes that pose a public safety hazard
2. Routes leading into a designated wilderness area
3. Routes causing resource damage, or routes in areas with a high risk for potential impacts to resources such as special status species or their habitat, or other resources requiring special management or protection

L.7.3 GENERAL RECLAMATION STRATEGY

The overall objective for routes earmarked for reclamation is to remove the route footprint from the landscape using a variety of reclamation techniques. The most cost-effective and non-disruptive method of reclaiming these routes and preventing further use is to disguise their location. If disruptive reclamation techniques are to be used, sensitive timeframes or seasons for protected, sensitive, or management priority species should be considered. To minimize route closure impacts, whenever practicable, the BLM may implement the non-disruptive closure methods first. Initially, most of the routes earmarked for reclamation may be allowed to naturally reclaim. Alternatively, by applying low-impact manual reclamation techniques, surface disturbances may be kept to the minimum necessary to close most routes and fulfill management objectives.

During the route evaluation process the most appropriate method of reclamation was identified for each route based on factors such as geography, topography, soils, hydrology, and vegetation, as well as management objectives, reclamation costs, modes and conditions of travel, recreation settings, and other factors. The BLM will compile a prioritized list of routes scheduled for reclamation including the reclamation method as prescribed by the TMPs route evaluation reports.

Post-reclamation monitoring of routes is essential to maintaining successful closures. If monitoring indicates the need for additional reclamation efforts after less intrusive closure methods have not been successful, the BLM may consider other closure options through adaptive management. Unless determined as necessary at the beginning of the implementation process, surface-disturbing reclamation actions may only take place after less intrusive methods have been tried. For example, continued vehicular use on a closed route may indicate that natural reclamation has been ineffective on that route. If it is determined that surface-disturbing reclamation techniques are necessary to effectively close a route, the Table L.8: Reclamation Techniques Toolbox in Appendix L.16.3 will be used. It features a series of options designed to effectively ensure that closed routes are reclaimed and revegetated. The minimum necessary or "least impact" treatment analyzed in the Table L.8: Reclamation Techniques Toolbox may be applied to each route slated for reclamation to achieve desired outcomes.

L.7.4 RECLAMATION STANDARDS

If disruptive reclamation techniques will be used in route reclamation, the reclamation standards listed below should be followed as applicable.

a. Routes slated for reclamation 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-approved seed mixtures or plantings.
c. Seeding will be done where necessary to aid reclamation of closed routes. Appropriate seed mixtures shall be selected for each site based on site conditions. Reclamation techniques include ripping the surface with a tractor to break up compacted soil and facilitate moisture retention. Broadcast seeding shall be done prior to winter. Some areas should 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. The BLM will utilize native material such as rock and large woody debris to the greatest extent practicable in combination with manufactured storm water structures (e.g., silt fence, straw waddles, etc.), and mechanical erosion control techniques (e.g., ripping, pocking, etc.) to minimize erosion and facilitate site stability.
e. Reclamation techniques for routes in designated wilderness and lands with wilderness characteristics will attempt 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 existing weed sources.

Consult Appendix C from the 2008 RMP for stipulations for surface-disturbing activities, which may apply to some forms of intrusive route reclamation.

L.8 CULTURAL RESOURCE CONSIDERATIONS

Properly considering cultural resources is a critical component of effective travel management:

> The BLM must address cultural resources in consultation with state historic preservation officers and under various state-specific protocol agreements, if applicable. The cultural resource inventory strategy required to make TTM decisions should be commensurate to the identified risk to resources. This risk should be based on the known presence of historic properties or on the potential/likelihood for historic properties to occur in a given area based on professional knowledge, judgment, and feedback received during the planning and consultation processes. (BLM 2016c)

All cultural resource identification efforts, assessments, consultations, mitigations, treatments, protection measures, and/or site treatments for the Labyrinth/Gemini Bridges TMP have been addressed in separate NHPA Section 106 compliance documents and are therefore not addressed in this document. Cultural resource compliance documents for this TMP undertaking consist of (but are not limited to) a Class III Intensive Field Survey report (and any report amendments or addendums that may take place in the future), government-to-government Tribal consultation correspondences and documents, interagency consultation correspondences and documents (including the State Historic Preservation Office), consulting party consultation correspondences and documents, a HPTP developed through consultations under the Travel PA, and any HPTP amendments or addendums that may take place in the future. All future decisions and actions regarding cultural resources for the Labyrinth/Gemini Bridges TMP undertaking will take place through the HPTP and any continuing project consultation, as guided by the Travel PA.

L.9 REVISED STATUTE 2477 ASSERTIONS

A travel management plan is not intended to provide evidence, bearing on, or address the validity of any Revised Statute 2477 (R.S. 2477) assertions. R.S. 2477 rights are determined through a process that is entirely independent of the BLM's planning process. Consequently, this TMP process does not take into consideration R.S. 2477 evidence. BLM bases travel management planning on purpose and need related to resource uses and associated access to public lands and waters given consideration to the relevant resources. At such time as a decision is made on R.S. 2477 assertions, the BLM will adjust its travel routes accordingly (BLM Manual 1626).

L.10 ROADSIDE CAMPING AND PULL-OFF CONSIDERATIONS

A management decision in the 2008 RMP allows dispersed camping “where not specifically restricted” and that “all vehicle use associated with dispersed camping activities is required to stay on designated routes.” Another decision states that “parking areas associated with dispersed campsites will be marked during travel plan implementation.” These decisions will be adhered to in implementing this TMP. The 2018 Labyrinth Rims/Gemini Bridges Recreation Area Management Plan (RAMP) limits camping within the TMA as follows:

Camping is limited to designated sites on 90,957 acres[18] of the [TMA]. In certain locations, such as along Utah Highway 313, all of the designated sites are within developed campgrounds. In the remaining areas where camping is restricted, campsites are marked and designated. These areas include lands to the east of the Dubinky Well Road, Bartlett Wash, Gemini Bridges and Bride Canyon, as well as lands designated as desert bighorn sheep lambing habitat. On the remainder of the TMA lands, dispersed camping is currently allowed, although driving off road to access campsites is not allowed. With increased visitation, resource damage continues.

Regarding other incidental pull-off considerations such as passing, users are expected to comply with 43 CFR § 8341.1 and not operate an OHV "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."

L.11 GAME RETRIEVAL

The 2008 RMP does not allow OHV use off designated routes for big game retrieval.

L.12 NEEDED AUTHORIZATIONS

As part of implementing the TMP, the BLM may seek to acquire legal access to public land where appropriate and necessary. The BLM may also identify needs and request funding for access, exchanges, and acquisitions and incorporate them in the existing ranking system. Easements, ROWs, and permissive access license agreements may include the acquisition of road or trail easements or the issuance of ROWs on an existing or historic physical access. The BLM may pursue such actions where they may contribute to natural resource protection or recreation enhancement opportunities. Easements may be acquired through donation or purchase following the procedures set forth in the BLM's Acquisition Handbook (H-2100-1) (BLM 2002). The BLM's Travel Management Manual provides guidance concerning authorized and permitted motorized uses (BLM 2016c).

L.13 GROUND TRANSPORTATION LINEAR FEATURE GEOSPATIAL DATA

The BLM's Travel Management Manual provides the following guidance concerning the maintenance of travel management geographic information systems (GIS) data in the GTLF format (BLM 2016c).

For GTLF adherence guidance, consult the BLM's GTLF data standard, data report, and data implementation guidelines (BLM 2014a, 2014b, and 2014c). A GTLF database is a geospatial database of motorized and non-motorized transportation linear features as they exist on the ground. Features include all linear features, not just what is within the BLM Transportation System.

The GTLF geodatabase exists to track route conditions and guide future management decisions. Utilized as an adaptive management tool, the geodatabase should be updated regularly to continually collect and update future changes in the transportation system, such as changing use

[18] Due to the increase in camping and its effects on natural and cultural resources, the BLM is in the process of limiting camping to designated sites in additional areas, increasing this to 208,099 acres within the TMA (see DOI-BLM-UT-Y010-2021-0094-EA).

patterns, incorrectly inventoried routes, and route migration. Tracking such changes would increase the effectiveness of implementation within the TMA by facilitating management adjustments and informing future management actions.

L.14 PRE- AND POST-TMP/EA MANAGEMENT ACTIONS IN GENERAL

Creating a TMP route network and analyzing the potential resource or resource use effects in an EA is a key component of travel management, but other important related actions take place before and after the TMP and its EA are approved. Many of these actions (monitoring, enforcement, etc.) are described in previous sections of this document. Active management of the routes in the TMA requires consistent monitoring and maintenance. Statewide, OHV recreation continues to increase, and the trend is expected to continue in this TMA as well. The BLM's Travel Management Manual provides a reminder on the importance of continuing TTM beyond the development of an initial TMP:

> [TTM] is a dynamic process. Upon completion of a TMP, the BLM should keep information and data concerning the travel network and transportation systems up to date, as staffing, budget and priorities allow. The BLM may modify the travel network and transportation systems through monitoring and adaptive management protocols or by specific BLM actions and authorizations. It is critical that the BLM continue TTM after completion of the initial TMP as a routine part of land management. (BLM 2016c)

L.15 REFERENCES FOR THE IMPLEMENTATION GUIDE

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L.16 APPENDICES TO THE LABYRINTH/GEMINI BRIDGES IMPLEMENTATION GUIDE

L.16.1 TRAVEL MANAGEMENT-RELATED GOALS OBJECTIVES, AND MANAGEMENT DECISIONS FROM 2008 RMP

Table L.7: 2008 RMP Transportation Language

Transportation	
TRV-2	BLM, in preparing its RMP designations and its implementation-level travel management plans, is following policy and regulation authority found at: 43 CFR Part 8340; 43 CFR Subpart 8364; and 43 CFR Subpart 9268.
TRV-3	Provide opportunities for a range of motorized recreation experiences on public lands while protecting sensitive resources and minimizing conflicts among various users. Identification of specific designated routes will be initially established through the chosen Travel Plan accompanying this RMP (see Appendix N) and may be modified through subsequent implementation planning and project planning on a case-by-case basis. These identified routes will be available regardless of other management actions. These adjustments will occur only in areas with limited route designations and will be analyzed at the implementation planning level. These adjustments will be done through a collaborative process with local government and will include public review of proposed route changes. Site-specific NEPA documentation will be required for changes to the route designation system.
TRV-5	BLM could impose limitations on types of vehicle allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife, wildlife habitat, cultural or vegetative resources, especially by off-road travel in an area that is limited to designated roads.
TRV-6	OHV access for game retrieval, antler collection and dispersed camping will only be allowed on designated routes (designated routes/spurs and have been identified specifically for dispersed camping; parking areas associated with dispersed campsites will be marked during travel plan implementation). Adherence to the Travel Plan is required for all activities, except where otherwise explicitly permitted.
TRV-7	Only designated roads and managed open areas are available for motorized commercial and organized group use (see Maps 2 and 3 for route designations).
TRV-8	Where the authorized officer determines that off-road vehicles are causing or will cause considerable adverse impacts, the authorized officer shall close or restrict such areas. The public will be notified as to these closures and restrictions.
TRV-9	Any routes that are not baseline routes will be signed "Closed" on the ground. Such routes will be considered as impacts to the area's natural character, and use of such routes will be considered cross country use and not allowed. Non-inventoried routes should be rehabilitated.
The proposed action also supports other RMP Transportation management actions, including TRV-4, TRV-10, and TRV-11	
Recreation and Off-Highway Vehicles	
REC-2	Where unacceptable damage to natural or cultural resources by recreational use is anticipated or observed, BLM will seek to limit or control activities by managing the nature and extent of the activity or by providing site improvements that make the activity more sustainable or by a combination of management controls and facility development. Such management actions will seek to reduce or eliminate the adverse impact while maintaining the economic benefits associated with a wide range of recreation uses.
REC-3	BLM will consider and, where appropriate, implement management methods to protect riparian resources, special status species, and wildlife habitat while enhancing recreation opportunities. Management methods may include limitation of visitor numbers, camping and travel controls,

	implementation of fees, alteration of when use takes place, and other similar actions to be approved through normal BLM procedures.
REC-5	Recreational off-highway vehicle (OHV) and mechanized travel will be consistent with area and route designations described in the travel management plan. BLM will work with agency and government officials and permit holders to develop procedures, protocols, permits or other types of authorization, as appropriate, to provide reasonable access for non-recreational use of OHVs for military, search and rescue, emergency, administrative, and permitted uses.
REC-6	Dispersed camping is allowed where not specifically restricted. Dispersed camping may be closed seasonally or as impacts or environmental conditions warrant. All vehicle use associated with dispersed camping activities is required to stay on designated routes.
REC-13	Support Grand County's efforts to obtain approval of corridor management plans for Utah Scenic Byways (Utah Highways 128, 313, and 279) and provide assistance, where feasible, in the development of byway facilities consistent with other decisions of the RMP.
REC-39	Labyrinth Rims/Gemini Bridges SRMA (excerpts): • Front country type use takes place along SR 313 and the Island in the Sky Road. This highway was designated the Dead Horse Mesa Scenic Byway by the State of Utah in the early 2000s. To manage dispersed camping and protect scenic values, BLM establishes a 1-mile-wide corridor along SR 313 and the Island in the Sky Entrance Road where camping is limited to designated sites, wood cutting and firewood gathering are prohibited, and portable toilets are required. BLM currently limits camping in the corridor to the Horsethief Campground, the Lone Mesa, and Cowboy Camp camping areas. BLM also limits camping and prohibits woodcutting and firewood gathering in a one- mile-wide corridor along the Gemini Bridges Road. Manage the small Cowboy Camp for tent camping and manage the Lone Mesa area for group use. Manage Hatch Wash and the lower section of West Coyote Creek for primitive, nonmotorized recreation. • In addition to the Mineral Bottom Takeout, BLM manages several additional facilities in the area including the Mill Canyon Dinosaur Interpretive Trail, the Halfway Stage Station Interpretive Site, and the Copper Ridge Sauropod Trackway Interpretive site. BLM also manages and maintains route markings (with user group assistance) on the Monitor and Merrimac, Seven Mile Rim, Poison Spider Mesa, Golden Spike, Goldbar Rim, Gemini Bridges, Lower Monitor and Merrimac, Bar M, and Klondike Bluffs routes which are used by both motorized and non-motorized visitors. The 3-D, Crystal Geyser, Hellroaring Rim, Secret Spire, and Wipeout Hill routes are authorized for Jeep Safari and other uses. New motorized routes will not be considered in the Hatch Wash Hiking and Backpacking Focus Area. • Manage backcountry areas to facilitate scenic motorized touring on designated routes with special emphasis upon establishment of low-development, end of route parking areas and route signing. • Improve the road to the Mill Canyon Dinosaur Trailhead to accommodate passenger car traffic. • Focus Area -- Scenic Driving Corridors: Highway 313 and the Island in the Sky Road (Utah Scenic Byway): Manage for scenic driving enjoyment. The corridor is defined as having a width of 1/2 mile from centerline (or to border of adjoining Focus Area; see Appendix A). • Focus Areas -- Non-Mechanized Recreation: o Goldbar/Corona Arch Hiking Focus Area (4,191 acres) covers the lands below the Golden Spike OHV route inclusive of the Culvert Canyon drainage to the northern rim of Long Canyon exclusive of the main stem of the Day Point Road. Manage the Corona Arch Trail for hiking only. Develop a hiking loop route in Culvert Canyon from the canyon bottom up to Jeep Arch and back on the western bench of Culvert Canyon to the canyon to just canyon from the railroad spur. Apply a no surface occupancy stipulation for oil and gas leasing and preclude other surface-disturbing activities (see Appendix A) to protect primitive hiking opportunities and scenic values. No new motorized routes will be considered.

	○ Spring Canyon Hiking Focus Area (457 acres) will be established upstream from the Spring Canyon Bottom Road. No new motorized routes will be considered. ○ Labyrinth Canyon Canoe Focus Area (7,709 acres) inclusive of the rims along the east side of Labyrinth Canyon from Placer Bottom to Mineral Bottom exclusive of the Hey Joe Mine OHV and mountain bike route. No new motorized routes will be considered. ○ Seven Mile Canyons Equestrian Focus Area (1,026 acres) inclusive of the north and south forks of Seven Mile Canyon westward from the junction of the two canyons. Equestrian use in this area will be restricted to private (non-commercial) horse use. No new motorized routes will be considered. • Focus Areas -- Mountain Bike Backcountry Touring (excerpts): ○ Bar M Mountain Biking Focus Area (2,904 acres) between Arches National Park, U.S. Highway 191, and the Bar M area state lands, exclusive of motorized access for the Copper Ridge Jeep Safari Route and the 191 rock quarry access road. Convert existing routes to mechanized use and provide for a limited number of new and connecting routes to support use of area as the destination for the 191 bike lane. Recommend that the old highway route in Moab Canyon be managed for non-motorized use to facilitate use of the route as part of the 191 bike lane. ○ Mill Canyon/Upper Courthouse Mountain Biking Focus Area (5,744 acres) inclusive of areas within the Mill Canyon and upper Courthouse drainages with continued use of the Seven Mile Rim Jeep Safari route for motorized use, with non-motorized trailheads near the Mill Canyon Dinosaur Trail and the Halfway Stage Station. Manage the Mill Canyon Dinosaur Trail for hiking only (35 miles of road designated for motorized travel; 23 miles of route managed for mechanized use only). ○ Focus Area -- Motorized Backcountry Touring: Gemini Bridges/Poison Spider Mesa Focus Area (16,299 acres) for multiple use, including full-size OHV, ATV, and motorcycle use with consideration given to managing routes suitable for each vehicle type. Travel will be intensively managed on designated routes only. Close the spur route to Gemini Bridges to facilitate public use and help restore damaged lands along the spur route. Construct a parking area near the bridges. • Focus Areas – Specialized Sport Venue (Motorized): ○ Dee Pass Motorized Trail Focus Area (35,290 acres) for motorcycle and ATV use: This is the area for competitive motorized events. Competitive routes within this area will be identified based on site-specific NEPA analysis. All routes designated for motorized use in the accompanying Travel Plan will remain open while Section 106 cultural resource inventories are conducted. If these inventories indicate the presence of eligible sites within the travel corridor, the route will be altered or closed. All new routes will require Section 106 cultural resource inventory prior to designation. Establish a managed OHV route system with provision for ongoing management of existing single-track routes to maintain their singletrack character. ○ Airport Hills Motocross Focus Area (285 acres): Manage the Focus Area for motocross use in partnership with local government under the Recreation and Public Purposes Act. A patent will be issued to local government. • Focus Area – Managed OHV area (cross country travel allowed): White Wash Sand Dunes Open OHV Focus Area, (1,866 acres) encompassing the area around the dunes themselves. Manage the central portion of the White Wash Sand Dunes for motorized sand play with exception of the dune field cottonwood trees and White Wash water sources which will be closed to motorized travel and fenced.
The proposed action also supports other RMP Recreation management actions, including REC-33 and REC-34.	
Other Resources and Off-Highway Vehicles	

SOL-WAT-20	No additional OHV routes will be allowed in saline soils other than those already designated in the Travel Plan accompanying this RMP (see Appendix N). An exception will be considered on a case-by-case basis for proposed routes in the Dee Pass Motorized Focus Area and in the Utah Rims SRMA. Exceptions could also be considered on a case-by-case basis outside these two areas if potential impacts could be mitigated and if the action will benefit other natural and cultural resources.
WSR-4	OHV travel will be limited to designated routes or closed, depending on the river segment.

L.16.2 MONITORING SUPPORT MATERIALS

The BLM will continue to monitor its adherence to the TMP for the Labyrinth/Gemini Bridges TMA, including the guidance in Section L.4 of this Implementation Guide. Below are additional tools the BLM may use as part of its long-term monitoring of the TMP.

Example Monitoring Form

Recreation Monitoring Report

Observer: _____ Date: _____
Location: GPS/Universal Transverse Mercator or Township/Range/Section: _____
Topographic /Quad: _____
Describe Specific Location:

What was observed: (Check the appropriate items and describe them below) Please be very specific with your observations.
_____ Off-Road Vehicle Activity (Car, Truck, OHV; Recent/Old)
_____ How many vehicles were observed
_____ Use of Mechanized Equipment off road (What type)
_____ Litter/Dumping (Quantity consisting of what items)
_____ Cutting Wood/Vegetation (What kind and how severe)
_____ Destroyed Property, government, state, and private (What type)
_____ Evidence of Human Waste (including toilet paper).
_____ Boundary Signs (Apparent, Replacement necessary, Need for signing)
_____ Number of people encountered and from what state
_____ Other (describe) _____

Corrective action taken:

Recommended corrective action:

Was anyone contacted? What was said?

Additional comments

Strategies and Schedules

Travel Management				
Location(s)	Issue/Objective	Indicator (what)	Protocol (how/methods)	Trigger/Action
Designated road/trail system	Management of designated system	• Number of roads/trails meeting targeted maintenance intensities • Placement and retention of all signing	Road/trail condition assessments	
		Average daily traffic	Traffic counters on key roads/trails	
		Number of illegal, off-system vehicle incursions	• Visual inspections • Field Office protocols	
Soil, Water, and Air				
Location(s)	Issue/Objective	Indicator (what)	Protocol (how/methods)	Trigger/Action
TMA-wide	Study the effects of continuing erosion that endanger floodplain soils. Map out these areas.	• Gully, rill, and sheet erosion • Vegetative cover • Compaction	• Monitor erosion • Monitor vegetative cover • Monitor impacts and gully progressions • Collect and analyze sedimentation and erosion data	
Wildfire burns and other select disturbed areas	Assess the effects of disturbance and reclamation	• Erosion or stabilization • Vegetative cover	Visual inspection	• Large wildfire • Erosion and flooding

Recreation				
Location(s)	Issue/Objective	Indicator (what)	Protocol (how/methods)	*Trigger/Action
SRMAs	Produce targeted recreation opportunities specific to each SRMA (or RMZ within the SRMA if RMZs are established in the future).	Realization of targeted benefits for each SRMA.	• Visitor surveys • Focus groups	Targeted recreation benefits not realized
		Physical setting conditions, such as remoteness, naturalness, facilities	• Monitor "development creep" with regard to authorizing expansion of designated road systems and recreation facilities into settings targeted as more primitive; monitor lack of development in SRMAs where development was targeted • Monitor landscape change via VRM	
		Social setting conditions, such as group size, encounters with other users, and evidence of use	• Existing Field Office protocols for evidence of use (rapid site inventory, human impact site monitoring) • Actual counts for group size and encounters	
		Administrative setting conditions, such as visitor services, management controls, mechanized use	• Monitor level of effort to provide visitor information and assistance appropriate to targeted settings • Monitor level of regulation, signing, and permitting applied as appropriate to targeted settings	

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L.16.3 ROUTE RECLAMATION

Closed OHV Routes and Travel Maps

In general, OHV-Closed routes should not appear on the travel map associated with the TMP. However, the BLM may choose to include some OHV-Closed routes on maps as helpful points of reference or when needed or helpful for authorized users.

Disguising Routes with Natural Materials

This method, sometimes referred to as "vertical mulching," is used to hide routes from view. If routes are not on travel maps and are not evident to visitors, they will be unlikely to receive additional use. Often, the first several hundred feet of illegal routes or routes slated for reclamation may be disguised to look like surrounding areas by placing rocks, dead wood and plants, and in some cases planting live vegetation in a natural-looking arrangement. Where possible, materials used should be large enough and abundantly placed in order to deter people familiar with route locations from easily removing them. In some cases, mechanical tools such as shovels, rakes, and other hand tools may be employed to obliterate embankments, ruts, water bars and ditches.

Ripping and Reseeding Routes

This process mechanically removes routes from the landscape and revegetates them. Native seed mixes should be used. Mechanical removal may be accomplished by hand or, among other methods, with the use of power equipment, excavators, bulldozers, or harrow or seed drills. Herbicides may also be used for revegetation. Based on site-specific conditions, seeding and planting treatments may include:

- Preparing a seedbed.
- Selecting an appropriate seed mix.
- Applying the seed.
- Covering the seed.

Due to the broad spectrum of situations encountered, all possible treatment options and combinations of treatments may be utilized. This process ultimately results in closed routes becoming undetectable.

Barrier Installation

In locations where it is impractical to employ any of the previous methods (e.g., extremely rocky areas) and in areas where administrative use may occasionally be required on a route closed to the public, it may be necessary to install natural or human-made barriers such as large boulders, fences with gates, or other barriers to physically prevent unauthorized use. Where possible and practical, these measures may be removed when routes are reclaimed or fully disguised.

Closing Routes with Informational Signs

This measure may be applied in cases where the previous measures have failed and ripping and seeding or the use of physical barriers is impractical or ineffective. It may also be used on routes

to establish an "administrative use only" designation or to identify seasonal closures. Signs may be clearly marked and placed in locations where they may be highly visible. Signs should be removed when routes are reclaimed or fully disguised.

Other Reclamation Considerations

In general, route closures for recreation are most effective when the designated route system provides the desired recreational opportunities, and closed routes are completely naturalized to eliminate the visual remnants of the former routes. Therefore, route closures will be most effective when any new routes, route redesigns, or reroutes within the transportation system are completed prior to implementation of route reclamation efforts.

A first step in reclamation is to obliterate obvious tracks and other evidence of use on closed routes. Techniques to accomplish this include hand-raking and cutting track edges or berms to break up straight lines. Additional techniques include placing small rocks on routes and mulching routes with local vegetation or dead plant materials. Reclamation actions would typically be limited to the portion of an unauthorized route that is within line of sight from an open route. The objective of obscuring the route to the visual horizon is to blend the disturbed area into the landscape, therefore discouraging continued use of closed routes and reducing the need for signage. The work may be limited to existing surface disturbance, and any reclamation work should first be cleared with the appropriate BLM office's Authorized Officer. A travel route that has historical significance (e.g., an old wagon trail) will not be subjected to any surface disruption. Because surface-disturbing reclamation actions may draw public attention to reclamation sites, the BLM may choose to provide informative signs near the sites that explain the need for and value of resource protection.

Where practicable, reclamation actions may include leaving the beginning portion of a closed route exposed. This would provide pullout areas or dispersed camping opportunities and is likely to discourage or prevent new surface disturbances elsewhere. Also, where appropriate, management may direct travel along open routes to concentrate traffic on maintained routes away from closed routes. This could include focusing maintenance on certain routes far from closed routes. Users may be more attracted to such well-maintained routes because of a more comfortable travel experience. Signing that strategically emphasizes use of routes far away from closed routes could also concentrate traffic away from closed routes. Routes far from closed routes could be well-signed and more emphasized in interpretive materials while routes near closed routes could receive minimal signing and low levels of publicity.

Reclamation Techniques Toolbox

A full suite of reclamation techniques may be employed throughout the TMA, depending on the appropriateness of the method for each route. While most routes may be reclaimed naturally, some may require more intrusive, surface-disturbing restoration methods. The full suite of closure reclamation techniques considered for use within the TMA is described in the Reclamation Techniques Toolbox below. As deemed appropriate by BLM management, these closure methods may be used in any combination for each route.

Table L.8: Reclamation Techniques Toolbox

Manual Techniques	
Passive/ natural reclamation	Allow the route to naturally reclaim without any signing, surface 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 the BLM, and provides a high degree of naturalness when successfully implemented.
Fence and sign/fence only/gate	This method applies to upland routes, dry wash routes and routes limited to authorized users for administrative use. This type of closure has little surface 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 wire; 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 a route. Fencing and signs can later be removed to complete the reclamation process. A locked gate could be used to control unauthorized use on routes limited to authorized users such as grazing permittees and BLM staff.
Sign only	This method applies mainly to upland routes in lightly used areas and is proposed for routes in lightly used areas and/or in areas where compliance with signage is expected to be good. The signage can later be removed to complete the reclamation process.
Rake out tracks only	This applies mainly to sandy 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 to 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 sandy 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 the BLM and provides a moderate degree of naturalness when complete. A downside to this method is the potentially high number of closed signs that can accumulate in a given area and the public perception that many routes are being closed, leading to vandalism. Monitoring is required to ensure effectiveness. Signage can be removed to complete the reclamation.
Vertical mulch with berm/ fence and sign	This method works in upland areas where occasional use of routes 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 sagebrush, transplanted bushes, and scattering dead vegetation in the wheel tracks may be enough to prevent use. Placement of plants in the closed route to the visible horizon minimizes cost and surface disturbance. Seed mixtures may also be applied to enhance the effectiveness of reclamation.
Barriers	Physical blockades constructed to prevent the passage of vehicles. Barriers may 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. To the greatest extent practicable, the BLM may utilize native, natural materials, such as rocks, vegetative debris and wood to minimize further visual impacts to the landscape. For example, wooden split rail fencing may be preferable to metal fencing.
Fence/ barrier with signs and parking area	Where an open route dead-ends at a closed route or limited use route, the BLM may develop a simple trailhead at the end of the open, motorized route, with parking space and signage indicating the shift in authorized uses. This would clearly demarcate the boundary between the terminus of an open route and the beginning of a closed or limited use route. By making it evident that a closed route is still open to other forms of use (typically non-motorized and/or non-mechanized uses), this closure method eases the transition from one use to another. Thus, this method of closure may lessen public opposition to route closures and increase public compliance with route designations.

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 surface disturbance because soil is only moved to create a berm at the beginning or end of a 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 a route has restored, berms can be removed or flattened to complete the reclamation 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 it is not made completely obvious that the route is being restored. 100% of a 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 roadbed; (3) the complete removal of existing vegetation resulting in a temporarily prominent disturbed area; (4) increased likelihood of invasive weed infestation, and (5) possible disturbance of undiscovered subsurface cultural resources. Under this method, soils would be ripped or harrowed to a depth of 18 to 24 inches. Preferably compacted soils would be ripped in two passes at perpendicular directions to a minimum depth of 1,824 inches at a furrow spacing of no more than 2 feet.
Engineering/ Grading	If a closed route begins at a route that is regularly maintained with heavy equipment (Maintenance Intensity Level 5), the main route may be maintained in such a way that there is a formidable ditch and berm on the sides of the route, deterring illegal motorized travel on the closed route.

Table L.9: Routes to be Reclaimed (Selected Alternative)

[TABLE TO BE INSERTED AFTER AN ALTERNATIVE IS SELECTED]

L.16.4 ROUTE-BY-ROUTE DETAILS

As timing and resources allow BLM will assign the following attributes for each route and track that information in the GTLF dataset:

- Evaluation Route #
- FAMS #
- Primary Route Management Objective
- Functional Classification
- FAMS Asset Type
- Maintenance Intensity
- Indicator of route's inclusion in FAMS
- Indicator of route's FLTP eligibility
- Indicator of route's Federal Lands Access Program eligibility

L.16.5 SIGN PLAN BMPS

This section identifies and describes BMPs for signing routes on BLM land. It focuses on portal/entry signs and route marker signs for individual routes. Additional details for signs on BLM lands (installation, ordering, etc.) can be found in the BLM's 2016 National Sign Handbook (BLM 2016b) and the Federal Highway Administration's MUTCD (FHWA 2019).

Signing Objectives

The main objectives of this sign plan are to identify designated routes on the ground in a clear and consistent manner to eliminate or minimize off-network travel and other misuse of the TMA while reducing user conflict and resource impacts. To accomplish this, the BLM may create and distribute well-designed signs so that the public can understand the designated travel network and comply with its terms and regulations. Signs in the TMA should adhere to a consistent theme and will be consistent with all applicable laws, regulations, policies, and land use plans.

Specific objectives of this sign plan are to:

1. Address signing priorities and areas of special emphasis.
2. Provide an orientation to the types of signs, their design, and their uses in the TMA.
3. Address sign placement for current and proposed signs.
4. Outline basic protocols for the monitoring and maintenance of the sign system, including future signing needs.

General objectives for the BLM's use of signs in the TMA are to:

1. Identify public lands.
2. Promote the health and safety of visitors to the public lands.
3. Meet visitor needs for information and direction.
4. Ensure visitors are aware of route designations.
5. Use sign communication to:
    a. Inform the visitor of the natural and management features of the public lands and waters.
    b. Enhance visitor experiences.
    c. Reduce or mitigate user and management issues.
6. Uniformly promote public awareness of the BLM's multiple use mandate and stewardship responsibilities in managing the U.S. public lands and waters through consistent messages and signage.
7. Provide uniformity in the shapes, materials, messages, and appearance of BLM signs.

The BLM's 2016 National Sign Handbook (BLM 2016b) provides specific objectives pertaining to sign design:

> The BLM must use and place signs judiciously; use the established emblem or wordmark, where appropriate; use approved international symbols and established standards of the sign industry; comply with Uniform Federal Accessibility Standards (UFAS) guidelines; meet specifications established in the Manual on Uniform Traffic Control Devices (MUTCD) for vehicle and pedestrian traffic control signs; comply with federal, state, and local laws, as appropriate; and complement other media, such as maps, brochures, and webpages.

Sign Types and Design

Sign Types Overview

Under the final TMP, various types of signs and markers will be installed according to the current BLM policies and guidance for recreation and travel management signing. Signs appropriate to travel settings (i.e., Backcountry, Frontcountry, etc.) may be installed along roads, primitive roads, and trails. BLM travel management signs should use positive, clear, and simple messaging (BLM 2012a).

Signs are intended to guide, inform, and protect visitors. This section groups and defines the types of signs used on the BLM public lands and waters. Each of these categories has its own requirements and functions. Ideally, to avoid sign clutter, messages should not be mixed on a single sign or in a grouping of signs. The following categories of signs and may be installed in the TMA and include categories listed in the BLM's National Sign Handbook (BLM 2016b):

- Identification
- Guide (navigation)
- Informational
- Traffic control devices
- Regulatory/warning/safety
- Miscellaneous (temporary, special event, etc.)

Sign Design Overview

From large, informational portal signs to small, individual route markers, clear and accurate signing is crucial to provide all users of the travel network with the information they need to comply with route designations and meet TMP goals and objectives. New signage may incorporate elements from the design standards outlined in the most current version of the BLM's National Sign Handbook (BLM 2016b) in addition to design specifications from the BLM sign shop. Any deviations from these standards must be approved by the BLM National Sign Coordinator.

Portal/Entry Signs

Large portal identification signs (see Figure L.2 –Figure L.4, below) may be installed at the beginning of popularly used areas, routes, or entrance points. The BLM's National Sign Handbook (BLM 2016b) provides greater detail on formatting BLM signs.

Figure L.2: Portal/Entry Sign Example

Figure L.3: Non-NCA BLM Identification Sign

The illustration at the top of the sign example above (taken from the latest BLM sign handbook) may be used for non-NCA BLM land identification signs in the TMA. According to the BLM sign handbook, this type of sign may require a waiver or approval if located within another agency's ROW. Within BLM ROWs, the BLM state engineer can make the determination on a case-by-case basis; otherwise, signs should comply with the U.S. Department of Transportation's MUTCD standards. The handbook goes on to provide specifications for MUTCD-compliant identification signs.

Figure L.4: MUTCD-Compliant BLM Identification Signs

Directional/Guide Sign Overview

Directional signs are essentially guide signs, which typically use arrows and distance indicators to provide guidance for the wayfinding process with roads and trails (BLM 2016b).

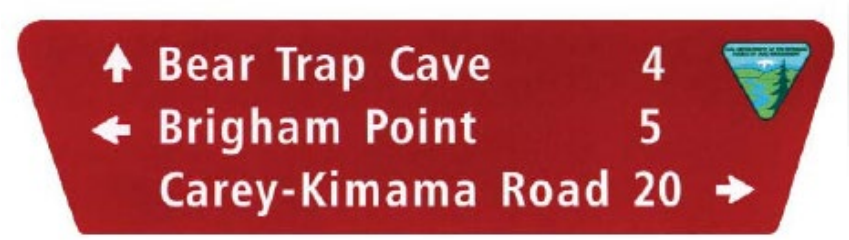

Figure L.5: Directional Guide Sign with Guidance to Multiple Destinations

Figure L.6: Directional Guide Sign with Guidance to One Destination

Information Signs

Information signs may also be used throughout the TMA. See examples below.

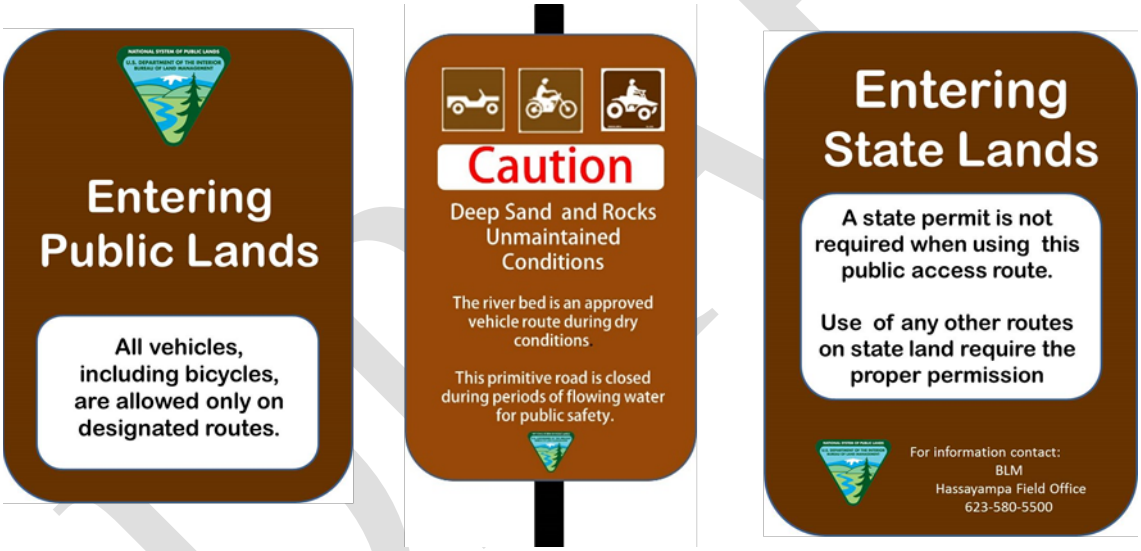

Figure L.7: BLM Information Sign Examples

Overview of Route Identification Marker Signing and Numbering Standards

Route markers are a specific type of guide sign. Most TMA signs may be route marker guide signs. Most primitive roads and trails may be identified by their number with flexible, brown fiberglass markers, generally referred to as fiberglass or Carsonite posts. Figure L.8 provides an example of a layout for route markers. Most BLM route markers have white lettering on a brown background.

Figure L.8: Route Marker Examples

All numbers and decals should be placed within the top portion of the post that will not be driven into the ground. At a minimum, these signs should convey the managing agency and the numeric route identifier along with any other important symbols or graphics, such as those denoting what type of use is allowed or authorized.

Each route ID should come from a pre-assigned TMA -specific block of numbers. Local input may be sought when naming loops and trails. The numbering system will be flexible, and numbers may not always be in numeric order. Note: routes that travel between field offices or planning areas may use the navigation number that was assigned to them in the jurisdiction or area that had the earliest designation date.

During the planning process, final navigational identifying numbers may be assigned for marking routes on the ground and in future published maps. However, throughout the travel management process, each travel route may have been assigned more than one identifying number. During the route evaluation phase of travel planning, a unique number is assigned that ensures that routes in GIS correspond to routes in a separate evaluation database. Sometimes existing route label numbers are changed to clarify segments into transportation assets (e.g., roads, primitive roads, and trails). These evaluation numbers are used in route reports (described in Appendix I of the EA). Finally, navigational identifying numbers are assigned as described above, and they become the official FAMS asset numbers as well. All versions of the various identifying number schemes may be maintained in a GIS database.

To limit the number of markers at an intersection, two routes may be identified on one post using arrow symbols and using both sides of the double-sided fiberglass posts. When adding a route name or where more than two international symbols are needed to convey a restriction or

allowable use, the BLM may develop special decals which clearly state needed messages or trail names. If a volunteer group adopts a route, they may be allowed to develop a decal to place on the route's markers. On sign marker posts, trail names or trail adopters may be identified and labeled above route numbers. Not all route markers need to include a route name and numeric route identifier.

Where there is potential for a route to be traveled by motorized vehicles past its designated terminus, "Motorized Route Ends" signs or decals may be used. Routes that are open to administrative use only may be marked prominently with standard "closed" route signs (usually at the beginning of the route) and may be used in conjunction with route markers that display a standard "administrative use only" message.

Figure L.9: BLM Route Marker on the Ground

Where designated OHV routes intersect with closed routes, "closed" route markers may be placed only where absolutely necessary for resource protection or public safety. When these closed routes are completely reclaimed either through natural re-vegetation or reclamation efforts, and the "closed" route markers are no longer necessary, the markers may be removed.

Implementation of signing should be completed in accordance with current BLM policy and guidance per the most current BLM sign handbook (BLM 2016b). Specifics for sign design, use, and location are also determined by the BLM's Roads Manual (BLM 2015a) and Primitive Roads Manual (BLM 2012d), the BLM's Sign Manual (BLM 2004), and the BLM's Travel Management Handbook (BLM 2012a).

Markers for Travel Routes That Are Open and Limited

Markers for travel routes that are open or limited to OHV travel may follow the basic layout depicted in the signs in Figure L.9. Each marker post may contain the following elements:

- Arrow pointing in the direction of the route being marked

- Route identification number
- Symbols of allowed uses to which the route is open
- Symbols of prohibited uses to which the route is closed
- BLM logo

Markers may also have a decal with GPS coordinates marked at strategic locations.

Markers for Routes That Are Limited or Closed

Markers for travel routes where public motorized vehicle travel is allowed but limited (with various restrictions) may use signs formatted like the first sign in Figure L.10, below. Markers for travel routes that are decommissioned or closed to all forms of motorized vehicle travel may use signs similar to that at the right in Figure L.10. Where motorized vehicle travel is allowed for administrative use, signs stating closure to OHVs may be used. Once a route has been decommissioned, and the route footprint has revegetated and blends in with the adjacent landscape, signs may be removed so as not to attract attention to the fact that a travel route once existed.

Figure L.10: Route Designation, Restriction, and Closure Signs

Additional Sign Examples

In addition to portal/entry signs, directional signs, general guide signs, designated route marker guide signs, and closure/limitation signs, the following signs may be used:

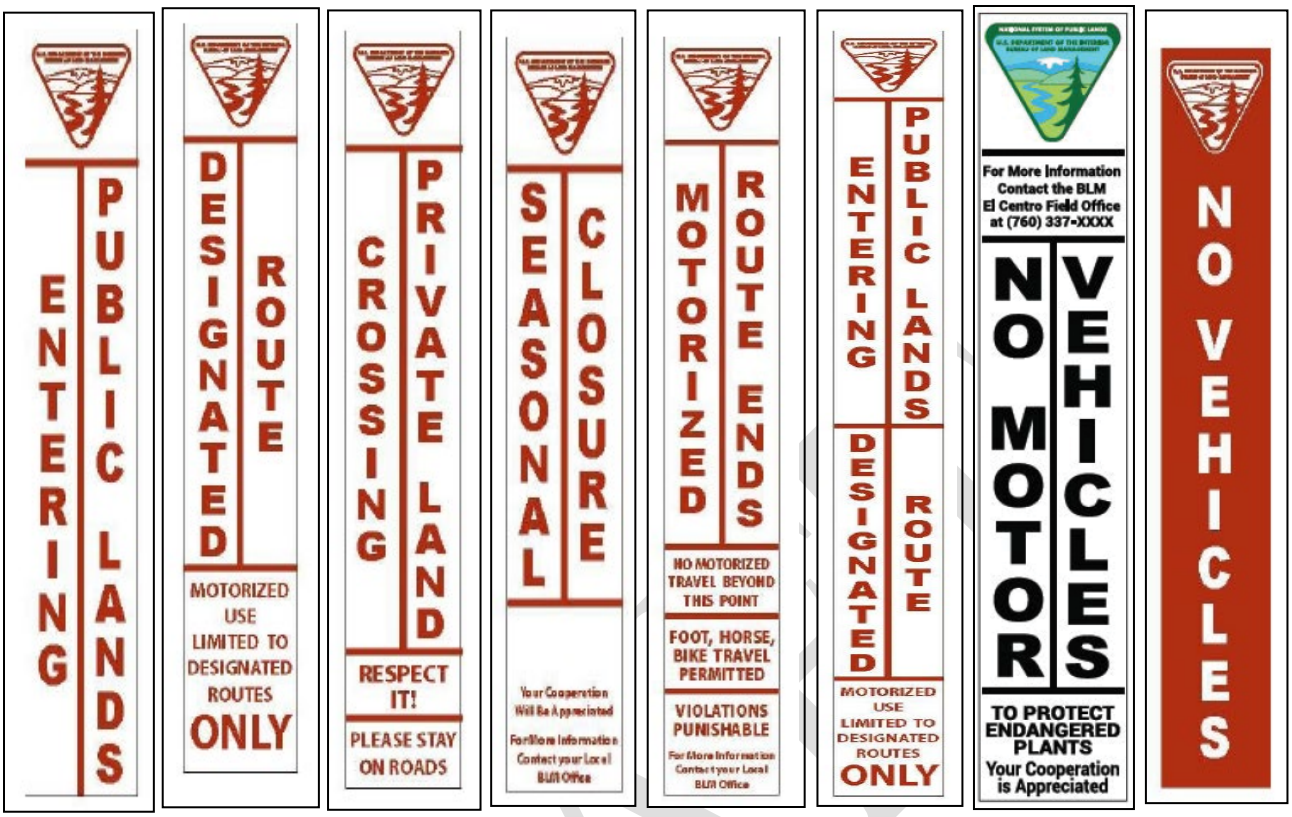

Figure L.11: Additional Travel Management Signs

Sign Placement

Priorities for Placing Signs

Priorities for the placement of signing are listed below:

1. Public health and safety
2. Entrances to and boundaries of areas of national significance (e.g., national monuments, designated wilderness areas, etc.)
3. Special management areas (e.g., concentrated recreation sites, watchable wildlife sites, trails, backcountry byways, etc.)
4. Travel corridors receiving intensive use
5. Enhancement of visitor experience and convenience
6. Concentrations of major thoroughfares crossing large blocks of BLM-managed public lands

Priority should be given to the installation and maintenance of route markers (e.g., guide or navigation signs). The intention is to make the network of open and limited routes more obvious and attractive than the closed routes.

Sign Distribution

Signing should be kept to the minimum necessary for visitor management and assistance. Signing may also be used as a tool for resource protection and regulatory and informational purposes. Though signs may not be placed on every route in the travel network, most routes

designated as OHV-Open or OHV-Limited to motorized/mechanized travel may be marked with their navigation number or route identification number at their beginnings and at major intersections. Route markers may be placed periodically to confirm the identity of the route being traveled, serving as reassurance markers. Signing may also occur at other points where following a primitive road or trail might be difficult or confusing to visitors. At the intersection of two major connector routes, larger guide signs with destinations and mileages may be used. Other signs, such as identification signs, kiosks, and regulatory signs may be placed within the TMA as needed according to BLM management priorities.

Sign Monitoring and Maintenance

Monitoring/Maintenance Overview

Through monitoring and ongoing public input, strategies may be developed to constantly improve signing effectiveness. Maintenance procedures and schedules may be developed for signs and markers. Such procedures and schedules would include anticipated replacement needs. A sign inventory and database (see below) may also be created to facilitate tracking of sign locations and sign maintenance.

Signs may be removed or destroyed during the first few years following implementation. Sign replacement could involve utilizing different techniques to more securely ensure a sign's physical placement (e.g., using concrete instead of a stake). The messages some removed or destroyed signs conveyed may also be communicated through alternate means (e.g., public notices, increased BLM interaction with visitors, etc.).

Public message signs may be routinely evaluated to ensure that they are adequately meeting user needs and are consistent with BLM goals and policies. As kiosks typically require more maintenance than other signs, they may be monitored more frequently for evidence of damage and other problems.

The BLM may strive to monitor and maintain TMA signs. Signs may be updated, repaired, or replaced as soon as possible; signs that are found to be unnecessary may be removed. General sign maintenance should be conducted according to Chapter 8 of the BLM's National Sign Handbook (BLM 2016b). Public land users will be encouraged to report missing or damaged signs, and volunteer efforts may be developed to help monitor and replace signs. Costs may be identified through the sign inventory database. For consistency, all future signing should conform to the design standards set forth in the BLM's National Sign Handbook (BLM 2016b).

Sign Surveys and Inventories

A sign inventory (stored in a GIS database) should be developed and maintained. On a regular basis, the BLM should evaluate signs and other communication products (brochures, maps, etc.) for effectiveness (BLM 2016b).

A sign survey may be used to create a sign inventory. Current markers and signs may be inventoried upon TMP implementation. The sign survey used to create a GIS database of sign inventory details may include photos and information such as location, category, sign text, size and color, substrate material, and condition. An electronic GPS data dictionary and fillable electronic BLM sign survey form are available online. More details can be found on page 8 of the BLM's National Sign Handbook (BLM 2016b).

Sign Effectiveness Planning and Review

The review of existing and proposed signs is essential to assess the need for and usefulness of each sign. Field staff involved with sign placement should have input during this review, helping to determine which signs are worthwhile, which signs should be eliminated, and which signs should be clarified. Field staff may also identify locations where signs are needed to resolve use problems, to improve stewardship ethics, or to accommodate public health and safety issues. Each sign should be planned and reviewed to fulfill the minimum review requirements of the BLM's National Sign Handbook, including visibility, location, condition, etc. (BLM 2016b).

L.16.6 ROUTE MANAGEMENT MITIGATION ACTIONS FOR VARIOUS IMPACT SCENARIOS

Introduction

The following sections present *examples* of possible route management mitigation actions that could be considered to address potential route-related resource concerns. These actions were considered during the route evaluation and alternatives development process. Mitigating actions are listed under resource-conflict scenario descriptions in order of possible implementation from least restrictive to most restrictive. For additional examples of mitigation measures, consult "Appendix 5: TTM Challenges and Solutions for Recreation/Trail Management" in the BLM's Travel Management Handbook (BLM 2012a). It provides mitigation measures to address the following topics:

- Route density
- Access management
- Circulation improvement
- Parking improvement
- User conflict resolution
- Quality and diversity of trail experiences

Cultural Resources

See the Historic Properties Treatment Plan (HPTP) developed for the Labyrinth/Gemini Bridges TMA.

Riparian and Water Quality

Route Location Degrades Riparian Conditions

1. Relocate the route to avoid riparian areas.
2. Raise the route above water level if route is necessary, and it cannot be relocated. Remove compacted road fills and replace with permeable fills (such as corduroy) that allow riparian vegetation root systems to continue to function. If riparian crossing is unavoidable, choose nick points where crossing can occur with minimized impacts.
3. Close the route if no suitable mitigation is possible and perform reclamation.

Route-Associated Human Use Degrades Riparian Conditions

1. Place information and interpretive signs encouraging positive behavior (e.g., "Use only when dry," etc.).
2. Raise the route above water level or place barriers to keep vehicles and people on routes. Remove compacted road fills and replace with permeable fills (such as corduroy) that allow riparian vegetation root systems to continue to function. If riparian crossing is unavoidable, choose nick points where crossing can occur with minimized impacts.
3. Relocate the route to allow riparian condition to improve.
4. Close the route if no suitable mitigation is possible and perform reclamation.

Route-Associated Human Use Contributes to Water Quality Degradation and Excessive Erosion

1. Review the situation to determine source of degradation; monitor to determine severity.
2. Place water control measures on the route, such as lead-off ditches and rolling dips to drain the entire road surface.
3. Check and ensure adequate buffer strips are provided at drainage structures to avoid direct drainage into water bodies.
4. Tighten spacing between drainage structures based on soil types and route grade.
5. Take reasonable measures to further harden/stabilize the route.
6. Relocate the route or raise the grade if the route is incised.
7. Close the route if no suitable mitigation is possible.

Wildlife and Vegetation

Route-Associated Human Use Degrades a Wildlife Habitat

1. Educate route users through interpretive signs and other information facilities.
2. Place use limitations on the route (time/season of use, type of use, number of users).
3. Review management plans for species (including recovery plans for ESA-listed species) and follow recommendations.
4. Design mitigation plans to address:
    - Temporary conditions
    - Seasonal conditions
    - Year-round conditions
5. Develop specific mitigation measures based on the site if species management plans are insufficient.
6. Initiate consultation with the U.S. Fish and Wildlife Service (in the case of ESA-listed species).
7. Replace/enhance habitat to offset problems caused by human use; methods could be to:
    - Augment food/water sources.
    - Place barriers along the route to protect specific habitat features.
    - Relocate or expand reproduction sites to be away from the route.
8. Relocate the route.
9. Close route if no suitable mitigation is possible and perform appropriate reclamation. Regarding intrusions into wildlife habitat, a management decision from the 2008 RMP says, “Where the authorized officer determines that off-road vehicles are causing or will cause considerable adverse impacts, the authorized officer shall close or restrict such areas. The public will be notified as to these closures and restrictions” (BLM 2008b).

Route-Associated Human Use Degrades Plant Communities

1. Place interpretive signs to encourage vehicles and people to stay on routes.
2. Conduct public outreach and education regarding noxious weeds and conserving vegetation.

3. Fence the area or place barriers to manage people.
4. Develop a program to improve desired plant communities.
5. Close the route and perform reclamation.

Route Use Contributes to Invasive Plant and Noxious Weed Spread

1. Educate the public about the spread of invasive weeds to prevent new infestations.
2. Encourage thorough cleaning of vehicles entering the area and include cleaning requirements for contractors or authorized users and permittees of the route.
3. Increase weed treatment along the route.
4. Require use of certified weed-free hay for horse users using the route.
5. Possibly limit the season of use on the route to prevent the spread of seeds if weeds are more likely to be spread during a particular season.
6. Limit the route to administrative use.

User Conflicts

Different Travel Speeds Cause Conflict Between Route Users

1. Place signs and information kiosks to raise awareness of need for considerate use of the area.
2. Monitor situation on the ground and request law enforcement support as necessary.
3. Conduct public outreach and education in an attempt change behavior.
4. Eliminate conflicts by separating uses or limit traffic by type or time of use.

Sound Levels Cause Conflict Between Recreationists and/or Local Residents

1. Place signs and information kiosks to raise awareness of sound issues.
2. Monitor situation on the ground and request law enforcement support as necessary.
3. Conduct public outreach and education in an attempt change behavior.
4. Implement “Quiet Time” use restrictions.
5. Reroute traffic to minimize conflict.
6. Place sound-reducing vegetative or constructed embankment barriers (if applicable).
7. Close route if no suitable mitigation is possible.

Administrative Use Attracts Unpermitted Use

1. Limit the amount or season of authorized use of the routes.
2. Add additional signing to the routes indicating they are limited to administrative vehicle use and public non-motorized use.
3. Fence and gate the routes at their intersections with open routes.

Vandalism and Other Resource Impacts

Route Use-Related Resource Vandalism of Range, Wildlife, or Other Facilities

1. Sign and provide informational materials to the visiting public about the protection of range and wildlife facilities.
2. Close the area around range and wildlife facilities to camping and recreational shooting.
3. Designate facility access routes as limited to administrative use.

Route Causes Unacceptable Recreation Settings Characteristic Changes

1. Investigate the cause and implement signage and law enforcement as necessary.
2. Design mitigation plans to address:
    - Short-term conditions
        - Implement new signing and public outreach to explain problem.
        - Implement temporary use restrictions (e.g., no overnight camping).
        - Issue emergency closure order and address conditions during closure.
    - Long-term conditions
        - Implement signing and mapping protocols for the area.
        - If no suitable mitigation is possible, amend 2008 RMP to close the area.
        - Issue emergency closure order and address conditions during closure.
3. Close areas near the route contributing to unacceptable changes.

Proposed Route Exceeds a Visual Resource Management (VRM) Objective

1. Take appropriate action to make the proposed route less noticeable (e.g., landscaping) using the Visual Contrast Rating worksheet.
2. Realign or relocate the proposed route.
3. If no suitable mitigation is possible, construction of the proposed route should not be allowed.

L.16.7 RELEVANT CONSERVATION MEASURES

Surface-disturbing implementation activities will follow the BLM committed conservation measures included in the 2008 RMP (BLM 2008b), the 2016 Moab Master Leasing Plan (BLM 2016a), and the project-specific measures listed below. The ones listed here are the most applicable and appropriate measures for the implementation activities associated with this TMP.

Through consultation with the U.S. Fish and Wildlife Service, the following Conservation Measures have been developed and are found in chapter two of the TMP EA:

[CONSERVATION MEASURES TO BE POPULATED FOLLOWING COMPLETION OF CONSULTATION PROCESS]