U.S. Department of the Interior
Bureau of Land Management

June 2024

DRAFT San Rafael Swell Travel Management Plan Environmental Assessment

DOI-BLM-UT-G020-2019-0019-EA

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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

TABLE OF CONTENTS

MAPS

TABLES

FIGURES

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ACRONYMS

Acronym	Full Terminology
2WD	Two-Wheel Drive
4WD	Four-Wheel Drive
ACEC	Area of Critical Environmental Concern
ARS	Advanced Resource Solutions, Inc.
AKA	also known as
ATV	All-Terrain Vehicle
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
CONUS	Conterminous United States
DOI	U.S. Department of the Interior
DR	Decision Record
EA	Environmental Assessment
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
FO	Field Office
GPO	U.S. Government Publishing Office
GPS	Global Positioning System
HPTP	Historic Properties Treatment Plan
I-70	Interstate 70
IDT	Interdisciplinary Team
IMPLAN	Impact Analysis for Planning
LWC	Land with Wilderness Characteristics
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NSE	NatureServe Explorer
OHV	Off-Highway Vehicle or Off-Road Vehicle
OSNHT	Old Spanish National Historic Trail
PFO	Price Field Office
PLPCO	State of Utah Public Lands Policy Coordinating Office
RFO	Richfield Field Office
RMP	Resource Management Plan
ROW	Right-of-Way
SHPO	Utah State Historic Preservation Office
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
SRS	San Rafael Swell
SUWA	Southern Utah Wilderness Alliance
TDS	Total Dissolved Solids
TLA	Utah Trust Lands Administration
TMA	Travel Management Area
TMDL	Total Maximum Daily Load
TMP	Travel Management Plan

Travel PA	BLM's Travel and Transportation Management Programmatic Agreement with the Advisory Council on Historic Preservation and the Utah State Historic Preservation Office
UDWR	Utah Division of Wildlife Resources
UGS	Utah Geological Survey
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTV	Utility Terrain Vehicle
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WSA	Wilderness Study Area

1. INTRODUCTION

1.1 BACKGROUND

The BLM's 2008 Price Field Office (PFO) Record of Decision and Approved Resource Management Plan (2008 Price RMP), and the 2008 Richfield Field Office (RFO) Record of Decision and Approved Resource Management Plan (2008 Richfield RMP) each included off road vehicle (also known as, and hereafter, called off-highway vehicle or OHV) route designations (see Price RMP Map R-18 and Richfield RMP Map 16).[1] The BLM's regulations at 43 Code of Federal Regulations (CFR) 8340.0-5 define OHVs as any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, with limited exclusions.[2] For details on the RMPs' route designation processes see the 2008 Price RMP pages 29-30 and 113-114 and Maps R-17 and R-18 and the Richfield RMP pages 19-21 and 122-127 and Maps 15 and 16.

Since 2008, incomplete implementation of the 2008 route designations and confusing RMP decisions (2008 Price RMP's Map R-18 includes "other" routes which are undesignated[3] (not specified as OHV-Open or OHV-Limited or OHV-Closed) and 2008 Price RMP's OHV-7 defers route designations within approximately 5% of the TMA to future activity-level planning) have resulted in a challenging management situation involving user conflicts, resource impacts, user confusion, and public safety challenges. To address these issues, the BLM began inventorying routes in 2011.

Then, in a 2017 Settlement Agreement[4] resolving legal challenges to the 2008 RMPs, the BLM agreed to issue a new TMP in the San Rafael Swell Travel Management Area (TMA). The 2017 Settlement Agreement outlined the process for completing the TMPs.

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[1] The 2008 Price RMP route designations carried forward designations from the 2003 San Rafael Motorized Route Designation Plan and added some new route designations.

[2] Exclusions include:
(1) Any nonamphibious 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;
(5) E-bikes (i) While being used on roads and trails upon which mechanized, non-motorized use is allowed; (ii) That are being used in a manner where the motor is not exclusively propelling the e-bike for an extended period of time; and (iii) Where the authorized officer has expressly determined, as part of a land-use planning or implementation-level decision, that e-bikes should be treated the same as non-motorized bicycles; and
(6) Any combat or combat support vehicle when used in times of national defense emergencies.
Note: E-bikes are defined in 43 CFR § 8340.0-5(j) 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.).

[3] Throughout this EA those routes that were undesignated in the 2008 Price RMP will be included with the OHV-Closed routes in Alternative A.

[4] The 2017 Settlement Agreement was a result of *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. The 2017 Settlement Agreement can be accessed online at

Finally, on March 12, 2019, Public Law 116-9, John D. Dingell, Jr. Conservation, Management, and Recreation Act (Dingell Act) was enacted. It contained designations that overlap the TMP including the San Rafael Swell Recreation Area, fourteen wilderness areas[5], and Jurassic National Monument, all of which contain motorized vehicle requirements. It also required an Emery County Land Exchange involving routes within the TMA.[6]

Therefore, the BLM's PFO and RFO are proposing to designate routes within the TMA as OHV-Open, OHV-Limited, or OHV-Closed (see Appendix I for definitions) to form a revised travel network. To inform the effort, the BLM evaluated 2,161 miles of evaluated travel routes (2,123 routes) on 1,149,016 acres of BLM-managed lands in the San Rafael Swell TMA. The San Rafael Swell TMP environmental assessment (EA) analyzes the impacts of the proposed route network alternatives. The TMP Implementation Guide (Appendix H) describes actions (education and outreach, sign installation, route maintenance, enforcement, monitoring, and reclamation) that BLM would take after completion of the TMP. The final travel network would replace the route designations made in the 2008 RMPs.

1.2 PURPOSE AND NEED

The need for development of the San Rafael Swell (SRS) TMP is established by The Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 U.S.C. 1701 et seq.). FLPMA provides for the management, protection, development, and enhancement of the public lands. Presidential Executive Orders 11644 and 11989, and regulations at 43 CFR § 8342.1, require that the BLM designate OHV routes in a manner that protects the resources of public lands, promotes the safety of all users of those public lands, and minimizes conflicts among the various users of those lands.

The purpose of this TMP is to designate existing routes capable of use by OHVs as OHV-Open, OHV-Limited, or OHV-Closed on BLM-managed lands within the TMA. The TMP will result in a designated travel network that meets the goals and objectives of the TMA's resource values and uses. It will also ensure travel and transportation management in the TMA is in conformance with applicable laws, regulations, and policies.

Additionally, the SRS TMP would meet the provisions of the 2017 Settlement Agreement, directing BLM to issue a new TMP for the San Rafael Swell TMA that follows the procedure and documentation requirements outlined in the 2017 Settlement Agreement.

1.3 DECISION TO BE MADE

The BLM Authorized Officer will select a final OHV travel network on BLM-administered lands and will decide within that network which routes will be designated OHV-Open, OHV-Limited, or OHV-Closed. The final OHV travel 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. The decision will identify the selected travel network and the rationale for the decision. The BLM's decision will be limited to BLM-administered lands. However, after the Dingell Act land exchange is finalized, routes on acquired lands that correspond with the selected travel network would be incorporated into the OHV travel network in accordance with the agreement governing the exchange and applicable law.

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https://eplanning.blm.gov/public_projects/nepa/93510/169299/205894/Final_Settlement_Agreement.pdf

[5] All routes in designated wilderness areas included in the original route inventory were subsequently removed to comply with 1964 Wilderness Act, resulting in the evaluation route inventory. See section 2.1.1.

[6] Routes on TLA are not considered in this planning process, however after the land exchange is finalized, these authorizations on TLA parcels acquired by the BLM will be incorporated into the designated travel network in accordance with the agreement governing the exchange and applicable law.

The BLM Authorized Officer will not, in this TMP, authorize construction of any new routes or other surface disturbance that changes the class of routes (see BLM Manual 1626 Sections 4.3 and 7 for definitions of route classes) or the character, function, or recreational experience the route provides through this TMP effort.

The BLM Authorized Officer will not, in this TMP, make any decisions affecting existing or future authorized users. Authorized users are excluded from the definition of OHV in 43 C.F.R. § 8340.0-5(a). Examples of authorized users include, but are not limited to, grazing permittees who need access to allotments or range facilities, landowners or their lessees who have been authorized to access their inholdings and other permit holders acting pursuant to their permit authorizations (such as rights-of-way or mineral leases). If the selected travel network results in a loss of public OHV access to Utah Trust Lands Administration (TLA) parcels, TLA and its permittees may obtain authorization to access those parcels from the BLM. The BLM will continue to work with current and future authorized users as appropriate to ensure reasonable access. 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 uses.

The BLM Authorized Officer will not, in this TMP, make any decisions 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 a decision is made on R.S. 2477 assertions, the BLM will adjust its travel routes accordingly (BLM Manual 1626).

The BLM Authorized Officer will not, in this TMP, make any decisions pursuant to non-motorized use. Non-motorized use within the TMA is allowed regardless of future OHV designations (e.g., hikers and horseback riders are not restricted to designated OHV routes).

1.4 TMA OVERVIEW

Appendix B shows the San Rafael Swell TMA (Map 1), inventoried routes evaluated and considered for designation (Map 2), and proposed alternatives (Map 3 – Map 5)Appendix B. The majority of the TMA is located in Emery County in eastern Utah and straddles Interstate 70; a small portion of the southwestern side of the TMA is in Sevier County. The TMA lies west of State Road 24, north of the Emery/Wayne County line, and east of Fishlake National Forest and private lands along State Road 10. The TMA also includes an isolated portion on its north end near the Price River and the Jurassic National Monument. The San Rafael Swell is one of the region's most well-known and popular scenic attractions. Within the San Rafael Swell, features such as the Wedge Overlook, San Rafael Reef, Mexican Mountain, Temple Mountain, and Buckhorn Draw attract high levels of recreation visitation.

Table 1-1 depicts a breakdown of the major jurisdictional surface management categories in the TMA.

Table 1-1: TMA Approximate Acreage by Jurisdiction

Jurisdiction	Acres	% of TMA
BLM	1,149,016	87%
Trust Lands Administration (TLA)	145,008	11%
Private	10,000	<1%
State Parks and Recreation	9,311	<1%
State Wildlife Reserve/Management Area	990	<1%
Total	1,314,325	100%

1.5 CONFORMANCE WITH BLM LAND USE PLANS

The action alternatives described in this document are in conformance with applicable management direction, including the 2008 Price RMP and 2008 Richfield RMP, which provide overarching management decisions, goals, and guidance for this travel planning effort. RMP decisions and goals to which this project conforms are listed in Table 1-2.

Table 1-2: Key RMP Travel-Related Management Goals, Objectives, and Decisions

2008 Price RMP	Decision	How the TMP Conforms
Transportation (TRV) Goal (pg. 148)	Continue to support Carbon and Emery counties and the State of Utah in providing a network of roads across public lands.	Through the TMP, the BLM would provide a network for OHV use across public lands in Emery and Sevier counties.
TRV-4 (pg. 148)	To reduce road density, maintain connectivity, and reduce habitat fragmentation, continue to require reclamation of redundant road systems or roads that no longer serve their intended purpose.	The alternatives only include roads that have a public purpose. Through the TMP process, the BLM also reviews all routes for redundancy. The alternatives were developed to reduce that redundancy.
TRV-5 (pg. 148)	In cooperation with the State of Utah and counties, install direction, informational, regulatory, and interpretive signs at appropriate locations throughout the area in conformance with recreation, visual, engineering, and safety objectives.	The BLM developed the TMP alternatives to include implementation including directional and informational signs.

2008 Price RMP	Decision	How the TMP Conforms
TRV-6 (pg. 148-149)	Continue to use the following existing and currently used backcountry airstrips for noncommercial and limited commercial use. Extended commercial use will require an ROW authorization. Any closure of an existing airstrip will be accomplished through consultation with the Federal Aviation Administration, the Utah Division of Aeronautics, and affected user groups and authorization holders on a case-by-case basis: • Peter's Point • Mexican Mountain • Cedar Mountain • Hidden Splendor • Tavaputs Ranch.	The BLM considers designations for Hidden Splendor airstrip in the TMP. The Mexican Mountain airstrip is within the TMA but is within wilderness and is not considered in this decision.
TRV-7 (pg. 149)	Allow aircraft to use existing backcountry airstrips and allow minimal maintenance of the airstrips to ensure pilot and passenger safety.	The BLM considers designations for Hidden Splendor, McKay Flats, Sagebrush Bench, and Cliff Dweller Flat airstrips.
OHV-1 (pg. 113)	In preparing RMP designations and implementation-level travel management plans, the BLM will follow policy and regulation authority found at: 43 C.F.R. Subpart 8340; 43 C.F.R. Subpart 8364; and 43 C.F.R. Subpart 9268.	The BLM will follow 43 C.F.R. Subpart 8340; 43 C.F.R. Subpart 8364; and 43 C.F.R. Subpart 9268.
OHV-2 (pg. 113)	Where the authorized officer determines that OHVs are causing or will cause considerable adverse impacts, the authorized officer shall close or restrict such areas and the public will be notified.	The BLM evaluates adverse impacts in alternative development and analysis. After adoption of the TMP, the BLM will exercise its closure authorities as appropriate.
OHV-3 (pg. 114)	BLM could impose limitations on types of vehicles allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife habitat, cultural, or vegetative resources, especially by off-road travel in an area that is limited to designated routes.	The BLM considers limiting certain routes to specific types of vehicles. It also considers ways to minimize disturbances to soil, wildlife habitat, cultural, and vegetative resources.
OHV-5 (pg. 114)	OHV recreation will be managed according to the following open, closed, and limited to designated route categories (Map R-17): • 0 acres open • 557,000 acres closed • 1,922,000 acres limited to designated routes.	The TMP does not alter the area designations made in the 2008 Price RMP. The entirety of the TMA acreage remains limited to designated routes.
OHV-7 (pg. 114)	Areas that were open to cross country OHV use in the San Rafael RMP (1991) have been changed to limited to designated routes. However, due to planning oversight, routes in these areas were not displayed on the route maps in the Draft RMP/EIS and therefore the public was unable to comment on these potential decisions. For this reason, the Proposed RMP does not designate any routes in these areas. Future activity-level planning will consider route designations.	The BLM considers route network alternatives in the former San Rafael RMP open areas located within the TMA.

2008 Price RMP	Decision	How the TMP Conforms
OHV-9 (pg. 114)	Route designations in the limited to designated category will be periodically reviewed and changes made based on resource conditions, changes in use, and other needs.	The BLM considers route designations based on resource conditions, changes in use, and other needs.
OHV/ REC Goals (pg. 103)	Establish management that provides necessary public services, authentic recreation experience, and opportunity within allowable use levels; minimizes user conflicts; and maintains the healthy ecosystems and settings that provide the basis for recreation opportunity and experience. Provide an environment for and encourage entrepreneurial activities that are supportive of the recreation program goals and objectives.	The BLM considers recreation experience and opportunity, user conflicts in the network, appropriate use levels, and ecosystem impacts.
REC-7 (pg. 104)	Address non-motorized and motorized recreational trails in activity level plans (e.g., designation and/or development of routes/trail systems, maintenance, how the trails relate to the ERMA, SRMA, and specific RMZs, etc.).	The BLM considers alternative route networks and how the trails relate to the SRMA and RMZs.
REC-8 (pg. 104)	Allow mountain biking on all routes designated for OHV use and on June's Bottom and Black Dragon Canyon routes and other routes or areas designated for mountain bike use. Designation of additional mountain bike areas or routes will occur through activity plans.	The BLM considers route networks and how the trails relate to mountain bike use.
WL-8 (pg. 82)	… Minimize road densities by reclaiming redundant roads when new roads access the same general area or when the intended purpose for the roads has been met and they are no longer necessary	The BLM considers OHV route networks, and their densities within habitat, and includes reclamation when the road no longer has a purpose. (See Appendix H).
CUL-2 (pg. 74)	Mitigate adverse impacts on cultural resources eligible for listing on the [National Register of Historic Places] resulting from authorized federal undertakings (permitted activities, recreational use, OHV use, etc.) that could affect cultural resources or historic properties.	The BLM considers impacts on cultural resources in alternatives development and analysis.

2008 Richfield RMP	Decision	How the TMP Conforms
Travel Management Goals and Objectives (pg. 122)	• Maintain existing access, where needed and allowed, to meet public and administrative needs, including acquiring or maintaining necessary access across non-Federal land. • Continue compatible traditional, current, and future use of the land by establishing a route system that contributes to protection of sensitive resources, accommodates a variety of uses, minimizes user conflicts, and is sustainable. • Consider public access, resource management, and regulatory needs through transportation planning. • Coordinate OHV management with other agencies where possible (U.S. Forest Service (USFS),	The BLM considers these goals and objectives in developing an OHV use route network.

2008 Richfield RMP	Decision	How the TMP Conforms
	National Park Service (NPS), State of Utah, counties, and communities).	
TRC-3 (pg. 122)	The BLM could impose limitations on types of vehicles allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife habitat, cultural or vegetative resources, especially by off-road travel in an area that is limited to designated routes.	The BLM considers limiting certain routes to specific types of vehicles. It also considers ways to minimize disturbances to soil, wildlife habitat, cultural, or vegetative resources. BLM will monitor the TMP once adopted, and will engage in adaptive management as appropriate.
TRC-6 (pg. 122)	If OHV use in areas designated as open or limited causes threats or adverse impacts to resources, take appropriate steps, including, but not limited to, use restrictions or closures, installation of additional signs and barricades, restoration of affected areas, etc. Balance motorized access to public lands with other resource and resource use needs.	The BLM considers use restrictions or closures, installation of additional signs and barricades, restoration of affected areas to balance access to public lands with other resource and resource use needs.
TRC-18 (pg. 124)	Prohibit all cross-country (off-transportation system) motorized travel in limited areas, with the following exceptions: • For emergency and other purposes as authorized under 43 CFR § 8340.0-5(a)(2),(3),(4) and (5).	The BLM is considering designating an OHV use route network.
TRC-19 (pg. 124)	Coordinate OHV route designations with USFS, NPS, State of Utah, counties, and communities, where possible.	Coordination with USFS, NPS, State of Utah, counties, and communities, if applicable, regarding route designations occurred where possible as a part of the development of this TMP.
TRC-20 (pg. 124)	Rehabilitate closed OHV routes on a case-by-case basis as required to mitigate impacts to resources. Closed or non-designated routes would be allowed to rehabilitate naturally unless a specific resource impact was occurring that warranted expedited rehabilitation of the route (e.g., soil erosion, water quality concerns, and/or continued illegal use).	Route rehabilitation is considered in this TMP by the BLM.
TRC-21 (pg. 125)	Route designations are implementation decisions that are subject to change based upon future site-specific environmental analysis. Appendix 9 provides additional details of the travel management/route designation process, the implementation process, and the process that would be required to add or remove route designations following completion of the RMP.	BLM considers route designation and implementation in this TMP process.
TRC-23 (pg. 125)	Designate routes for motorized use unless significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural or vegetative resources, or other authorized uses of the public	BLM considers in this TMP how the designation of OHV routes affects resources.

2008 Richfield RMP	Decision	How the TMP Conforms
	lands is imminent.	
TRC-24 (pg. 125)	Designate routes to minimize harassment of wildlife or significant disruption of wildlife habitats. Give special attention to protecting SSS and their habitats.	BLM considers in this TMP how OHV designations impact harassment of wildlife, disruption of wildlife habitats, and protecting Special Status Species and their habitats.
TRC-25 (pg. 125)	Designate routes to minimize conflicts between OHV 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.	Minimizing recreational user conflicts are being considered by the BLM as a part of this TMP.
TRC-27 (pg. 125)	Consider seasonal closure of designated routes on a case-by-case basis, subject to environmental analysis.	The BLM considers in this TMP seasonal closure of routes on a case-by-case basis to minimize resource impacts.
TRC-30 (pg. 126)	Allow motor vehicles to pull off a designated route up to 50 feet of either side of the centerline for the purposes of parking/staging.	The parking and staging of vehicles off of designated routes is considered by the BLM in this TMP.
TRC-31 (pg. 126)	Allow motor vehicles to use existing spur routes for ingress and egress to established campsites within 150 feet of designated routes. (Previous campsites can be distinguished by evidence of rock fire rings, old tent sites, and tracks from earlier vehicle access.) This does not authorize creation of new campsites or travel ways.	The BLM considers the effects of the use of existing dispersed camping adjacent to designated routes (see Section 3.1.1).
TRC-32 (pg. 126)	Prohibit motorized travel ways between multiple campsites, establishment of motorized play areas, race tracks, or travel across wet meadows or riparian areas.	The BLM considers ongoing or potential impacts to resources associated with evaluated routes. Addressing unauthorized use will be a continuous part of the implementation of this TMP (see Appendix H).
TRC-33 (pg. 126)	Prohibit motorized access to camping areas where conflicts with other resources are identified.	The BLM considers the impacts of motorized access to camping areas along designated routes.
Recreation Goals and Objectives (pg. 111)	Provide recreational opportunities in a variety of physical, social, and administrative settings, from primitive to near-urban, that allow visitors to have desired recreational experiences and enjoy the resulting benefits. Provide opportunities for recreational experiences unique to the lands managed by the RFO, consistent with resource capabilities and mandated resource requirements; provide for visitor education and interpretation of the	The BLM considers these goals and objectives in developing an OHV route network.

2008 Richfield RMP	Decision	How the TMP Conforms
	recreational opportunities within the RFO. Work with local communities to foster recreation and tourism. Provide for public health, education, and safety through interpretation, facility development, and visitor management. Maintain important recreational values and sites in federal ownership to ensure a continued diversity of recreation settings, activities, and opportunities.	
REC-4 (pg. 112)	Consider limiting recreational access, season of use, and numbers of users, if needed, to protect other resources.	The BLM considers route limitations as a method of protecting resources in this TMP.
REC-9 (pg. 113)	Provide signs, trails, trailhead parking, and staging areas to facilitate the use and enjoyment of the ERMA and to protect visitor health, safety, and resources.	The BLM considers existing and potential new signs, trailhead parking, and staging areas within the TMA.
Transportation Facilities Goals and Objectives (pg. 152)	Provide a safe and effective transportation system across public lands.	The alternatives put forward in this are a framework for the BLM to establish a network of designated routes across public lands.
TRV-1 (pg. 152)	As per the State of Utah v. Andrus, Oct. 1, 1979 (Cotter Decision), the BLM would grant the State of Utah reasonable access to state lands for economic purposes, on a case-by-case basis.	This TMP does not change BLM's responsibilities under the Cotter Decision.
TRV-2 (pg. 152)	Continue to support Sanpete, Sevier, Piute, Garfield and Wayne counties and the State of Utah in providing a network of roads for movement of people, goods, and services across public lands.	The alternatives put forward in this TMP are a framework for the BLM to establish a network of designated routes across public lands.
TRV-5 (pg. 152)	Require reclamation of redundant road systems and/or roads that no longer serve their intended purpose in order to reduce road density and reduce habitat fragmentation.	Reclamation of redundant roads and roads without purpose are considered in this TMP by the BLM. (See Appendix H.)
TRV-8 (pg. 152)	Install directional, informational, regulatory, and interpretive signs at appropriate locations throughout the planning area.	The BLM considers route signing in the implementation guide.

1.6 Relationships of the TMP to Laws, Regulations, Policies, and Other Plans

The route network alternatives were developed in accordance with applicable laws, regulations, and BLM policy including, but not limited to, those listed in Table 1-3.

Table 1-3: TMP Relationship to Laws, Regulations, Policies, and Other Plans

Law, Regulation, or Plan	Requirement	How the TMP Relates
The Federal Land	Section 102 requires that public lands be	The BLM considered protection of various

Law, Regulation, or Plan	Requirement	How the TMP Relates
Policy and Management Act of 1976	managed in a manner that will protect the quality of various resource values, that will preserve and protect certain public lands in their natural condition, and that will provide for outdoor recreation and human occupancy and use. Section 103 requires the management of the public lands and their various resource values to best meet the present and future needs of the American people, a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations, and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment.	resource values, their natural condition, and outdoor recreation and human use in the TMP route network alternatives. The BLM considered the present and future needs of the American people, balanced and diverse resources uses, long term needs of future generations, and harmonious and coordinated management without permanent impairment of the productivity of the land and quality of the environment in the TMP route network alternatives.
John D Dingell Jr. Conservation, Management, And Recreation Act of 2019 (P.L. 116-9)	Section 1221 designates the San Rafael Swell Recreation Area, which is within the TMA boundary. Section 1231 designates the Emery County wilderness areas, subject to the Wilderness Act, 14 of which are within the TMA boundary. Section 1252 designates the Jurassic National Monument with the Monument occurring within the TMA boundary. Section 1255 mandates the Emery County land exchange, with much of the land proposed for acquisition occurring within the TMA boundary.	The BLM considered the requirements of the designations made by the Act in the TMP route network alternatives. The BLM acknowledged the land exchange, and its potential future impacts on the TMP route network alternatives.
Wilderness Act of 1964	Section 4 requires there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.	The BLM does not consider designating any routes within any designated wilderness areas.
National Trails System Act of 1968 and the Old Spanish Trail Recognition Act of 2002	Section 2 of The Old Spanish Trail Recognition Act of 2002 amended the National Trails System Act to designate the Old Spanish National Historic Trail from Santa Fe, New Mexico, to Los Angeles, California as a National Historic Trail under the National Trail Systems Act. Per Section 7(c): “Where a national	The TMP route network alternatives do not interfere with the nature and purposes of the Old Spanish National Historic Trail (OSNHT). See table 1-4 for more information.

Law, Regulation, or Plan	Requirement	How the TMP Relates
	historic trail follows existing public roads, developed rights-of-way or waterways, and similar features of man's non-historically related development, approximating the original location of a historic route, such segments may be marked to facilitate retracement of the historic route, and where a national historic trail parallels an existing public road, such road may be marked to commemorate the historic route. Other uses along the historic trails, which will not substantially interfere with the nature and purposes of the trail, and which, at the time of designation, are allowed by administrative regulations, including the use of motorized vehicles, shall be permitted by the Secretary charged with administration of the trail."	
National Historic Preservation Act of 1966	Section 106 requires Federal agencies assess the effects its actions may have on historic properties.	The BLM assessed adverse effects from its route network alternatives 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). The TMP is subject to consultation under this law as appropriate
Endangered Species Act of 1973	Section 7 requires Federal agency actions do not jeopardize the existence of any listed species.	The BLM considered the effects of the TMP route network alternatives to listed species and their habitats and is subject to consultation under this law as appropriate.
Migratory Bird Treaty Act of 1918	Prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species.	The BLM considered the effects to migratory birds and their habitats from the TMP route network alternatives.
Paleontological Resources Preservation Act of 2009	Section 3 directs Federal land managers to maximize the conservation and preservation of paleontological resources on Federal land.	The BLM considered the Potential Fossil Yield Classification system and known paleontological sites to identify impacts to paleontological resources from the TMP route network alternatives.
43 CFR § 8340	Establishes criteria for designation public	The BLM considered the designation

Law, Regulation, or Plan	Requirement	How the TMP Relates
	lands as open, limited or closed to the use of off-road vehicles and establishes controls governing the use and operation of off-road vehicles in such areas.	criteria and OHV controls in the TMP route network alternatives.
43 CFR § 8342.1 designation criteria	Requires designations to be based on the protection of the resources of the public lands, the promotion of the safety of all the users of public lands, and the minimization of conflicts among various uses of public lands.	The BLM considered resource protection, public safety, and conflict minimization considerations for each TMP route network alternative. The BLM documented those considerations in the EA.
Executive Order 11644 as amended by Executive Order 11989 Use of Off-Road Vehicles (ORVs) on The Public Lands	Section 1 requires procedures to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands	The BLM documented resource protection, public safety, and conflict minimization considerations for each route in the route reports. The BLM documented route network alternatives resource protection, public safety, and conflict minimization considerations in the EA.
BLM's 2016 Travel and Transportation Management Manual (MS-1626)	Provides detailed policy, direction and guidance for the comprehensive management of travel and transportation on Bureau of Land Management-administered lands	The BLM followed the policies in this Manual in development of the TMP route network alternatives, except where those policies differed from the requirements of the Settlement Agreement.
BLM's 2012 Travel and Transportation Handbook (H-8342)	Provides specific guidance for preparing, amending, revising, maintaining, implementing, monitoring, and evaluating BLM land use and travel management plans	The BLM followed the policies in this Handbook in development of the TMP route network alternatives, except where those policies differed from the requirements of the Settlement Agreement.
Emery County General Plan	Section 9.12 states all roads and trails that have been designated open for multiple-use travel in agency planning processes should remain open to the applicable forms of motorized travel, unless sufficient, site specific, environmental or scientifically valid justification exists for the closure of a road or trail.	The BLM considered existing designations when developing the route network alternatives; however, some roads are proposed for closure due to lack of public purpose and need or due to environmental impacts.
Sevier County Management Plan	The Land Access section (pg. 12) states that Access for recreational travel is especially important to the County.	The BLM's route evaluation included determining if the route has a public purpose and need.

1.7 SCOPING AND ISSUES

1.7.1 INTERNAL SCOPING

Internal (BLM and Cooperating Agencies) scoping identified route- and network-related issues that could affect the natural and human environment within the TMA. Internal scoping occurred concurrently with the route evaluation and network creation process described in Section 2.1.

1.7.2 EXTERNAL SCOPING

An initial round of public scoping occurred from February 1 to March 3, 2021, including two virtual scoping meetings on February 2, 2021, and February 4, 2021. At the close of the scoping period the BLM received 1,854 scoping comment submittals. Comments provided are summarized in the scoping report, which is available on this plans ePlanning website[7].

1.7.3 ISSUES

While many preliminary issues related to the route network alternatives were identified through internal and external scoping, not all issues warrant detailed analysis in this EA. Issues that are brought forward for detailed analysis are based on guidance in the BLM NEPA Handbook H-1790-1.

- ***Issue 1: How would the route network alternatives impact cultural resources within the TMA?***
- ***Issue 2: How would the route network alternatives impact size, apparent naturalness, outstanding opportunities for solitude or primitive and unconfined recreation in lands identified by the BLM as possessing wilderness characteristics?***
- ***Issue 3: How would the travel network alternatives impact native vegetation communities?***
- ***Issue 4: How would the travel network alternatives impact OHV recreation opportunities and experiences in Emery, Sevier, and Grand counties?***
- ***Issue 5: How would the travel network alternatives impact nonmotorized recreation access and experiences in the TMA?***
- ***Issue 6: How would the route network alternatives impact soil stability?***
- ***Issue 7: How would the route network alternatives impact soil health and erosion potential within the TMA?***
- ***Issue 8: How would the route network alternatives impact Threatened &Endangered (T&E) plant species and select BLM Sensitive plants and their habitat within the TMA?***
- ***Issue 9: How would the route network alternatives impact visual resources within the TMA?***
- ***Issue 10: How would the travel network alternatives impact water quality, hydrology, and riparian areas within the TMA?***
- ***Issue 11: How would the travel network alternatives impact the introduction and spread of noxious and invasive weeds?***
- ***Issue 12: How would the route network alternatives impact T&E and BLM Sensitive fish species and habitat within the TMA?***

[7] https://eplanning.blm.gov/eplanning-ui/project/1500146/570

- ***Issue 13: How would the route network alternatives impact federally listed, candidate, and select BLM Sensitive wildlife species and their habitat within the TMA?***

BLM identified an additional 19 issues and determined a detailed analysis was not warranted. These issues are listed below and analyzed in brief in Appendix A with a concise discussion regarding the context and intensity of the impact related to each issue.

- ***AIB-1 (Air Quality): How would the route network alternatives impact air quality in the TMA?***
- ***AIB-2 (Greenhouse Gas and Climate Change): How would greenhouse gas emissions from the route network alternatives contribute to climate change?***
- ***AIB-3 (ACECs): How would the route network alternatives impact the relevant and important values of ACECs outside of wilderness areas?***
- ***AIB-4 (San Rafael Swell Recreation Area): How would the route network alternatives impact the public purposes of the San Rafael Swell Recreation Area?***
- ***AIB-5 (Wilderness): How would the route network alternatives impact wilderness character in designated wilderness areas within the TMA?***
- ***AIB-6 (Environmental Justice): How would the route network alternatives impact environmental justice populations?***
- ***AIB-7 (Livestock Grazing): How would the route network alternatives impact livestock grazing operations within the TMA?***
- ***AIB-8 (Paleontological Resources): How would the route network alternatives impact paleontological resources within the TMA?***
- ***AIB-9 (Greater Sage-Grouse): How would the route network alternatives impact Greater sage-grouse and their habitats, including general habitat management area (GHMA) and priority habitat management area (PHMA)?***
- ***AIB-10 (Socioeconomics): What are the socioeconomic impacts of the route network alternatives?***
- ***AIB-11 (Municipal Watershed/Drinking Water): How would the route network alternatives impact municipal watershed/drinking water source protection zones?***
- ***AIB-12 (Migratory Birds): How would the route network alternatives impact migratory birds, including raptors?***
- ***AIB-13 (Public Health and Safety): How would the route network alternatives impact public safety within the TMA and emergency services within and adjacent to the TMA?***
- ***AIB-14 (Sensitive Plant Species): How would the route network alternatives impact BLM Sensitive plant species?***
- ***AIB-15 (Minerals): How would the route network alternatives impact mineral exploration, development, and operations in the TMA?***
- ***AIB-16 (Dark Night Skies): How would the route network alternatives impact the quality of dark night skies?***
- ***AIB-17 (Natural Soundscapes): How would the route network alternatives impact natural soundscapes?***
- ***AIB-18 (Big Game and Upland Game): How would the route network alternatives impact big game and upland game species?***

- ***AIB-19 (Sensitive Wildlife Species): How would the route network alternatives impact BLM Sensitive wildlife species?***

Some resources are not associated with potential issues because they are not present or would not be impacted in any way by the route network alternatives. Those resources are listed in Table 1-4 along with explanations concerning why no analysis is needed. Those resources listed in Appendix A were analyzed in brief because they do not relate to how the proposed action or alternatives respond to the purpose and need or they have no potential for significant impacts.

Table 1-4: Resources for Which No Analysis Is Necessary

Resource	Rationale for Why No Analysis Is Necessary
Farmlands (Prime or Unique)	Based on review of the NRCS Web Soil Survey, there are prime farmlands, if irrigated, and Farmland of Statewide Importance within the TMA. Due to the limitations of the NRCS Web Soil Survey to add the entire TMA boundary, sample polygons of up to 100,000 acres were viewed within the TMA boundary. The BLM determined that the amount of prime farmlands make up less than 5% of the total TMA. The prime farmlands are sparse with polygons mainly located around water sources like streams, springs, and wash bottoms. In addition, the BLM would not authorize irrigation of these lands because it is not consistent with the 2008 Price RMP.
Fuels and Fire Management	Fuels and fire management activities would not be affected by the proposed TMP because emergency, authorized, and official travel is not subject to route designations. Temporary road closures to OHVs while responding to those events are allowed for public and responder safety reasons.
Lands and Access	There are currently 39 authorized access rights-of-way (ROW) within the TMA. The TMP would not impact these ROWs because they are granted under a separate authorization independent of the TMP. Additionally, after the Dingell Act land exchange is finalized, any travel related authorizations associated with TLA parcels acquired by the BLM would be incorporated into the chosen travel network in accordance with the agreement governing the exchange and applicable law.

Resource	Rationale for Why No Analysis Is Necessary
Rangeland Health	The TMA has 61 grazing allotments within its boundaries. Utah's Rangeland Health Standards for Livestock Grazing (BLM 1997) are comprised of the following: upland soils, riparian and wetlands, habitat, and water quality. "The purpose of the standards and guidelines....is to provide a measure (standard) to determine land health, and methods (guidelines) to improve the health of the public rangelands." BLM's job is "...to maintain the health of the land or make appropriate changes on the ground where land health standards are not being achieved" (BLM 2001). Soils; water quality, riparian, and wetlands; and habitat (native vegetation and weeds) are addressed separately in Sections 3.3.5; 3.3.8; and 3.3.3 and 3.3.9, respectively, of this EA. The analysis in those sections focuses on disclosure of the effects of the route network alternatives and those resources. Rangeland health standards for livestock grazing would not be impacted by the route network alternatives because the action is not associated with livestock grazing management and no new disturbance would be created as a result of travel network decisions.
Native American Concerns	There are no known Native American concerns in the TMA. There were no specific areas of concern raised in the scoping comments received from the Tribes. Consultation with the Tribes are ongoing.
Water: Groundwater and Water Right Users	OHV route designations would not impact authorized water right users because these designations are restricted to the surface and water right users would continue to have access after route designations are assigned. In addition, OHV route designations do not involve consumptive water uses. With respect to groundwater, no withdrawals or interruptions of groundwater and no discharges to groundwater are planned or anticipated because of designation of an OHV network. As a result, no impacts to groundwater resources would occur. The Goblin Valley State Park's transient capture zone is located under the southern portion of the TMA; the well was drilled to a depth of 830 feet. This well and the transient capture zone would not be impacted for the reasons indicated above.

Resource	Rationale for Why No Analysis Is Necessary
Wastes and Hazardous Materials	Because the proposed action is designating existing routes as OHV-Open, -Limited, or -Closed, and is not authorizing the construction of any new routes or new uses, no wastes and no chemicals subject to reporting would be created or authorized by any of the alternatives Super Fund Amendments and Reauthorization Act (SARA) Title III in amounts greater than 10,000 pounds.
Wilderness Study Areas	There are no Wilderness Study Areas located within the TMA. The nearest Wilderness Study Areas to the TMA are as follows: Mount Ellen-Blue Hills WSA is 10 miles south; Dirty Devil WSA is 8.5 miles southeast; Horseshoe Canyon South WSA is 10 miles southeast; Desolation Canyon WSA is over 12 miles east and northeast; and Floy Canyon WSA is 16 miles east. No impacts are anticipated to WSAs from the proposed alternatives.
Woodland/Forestry	Woodland/Forestry resources within the TMA are limited and the management of these resources would not be impacted because all routes being considered for designation already exist on the ground. Therefore, no new surface disturbance within areas containing woodlands or forestry would be authorized under any alternative.
National Scenic and Historic Trails	There are no National Scenic Trails within the TMA. The congressionally designated Old Spanish National Historic Trail (OSNHT) follows closely around a portion of the TMA boundary, and even crosses in and out in a few locations. There are 7 routes (22.6 miles) that are identified and signed as motorized recreational routes associated with the trail experience. Those routes provide access to 5 developed roadside interpretive sites and 4 non-motorized trailheads associated with the OSNHT. These routes are open in every action alternative. In addition, all non-motorized trails associated with the trail experience are remaining closed to OHVs in every action alternative. Cultural site analysis related to the heritage sites associated with the OSNHT is included in Section 3.3.1 of this EA. Recreational access associated with motorized and non-motorized trails can be found in Section 3.3.4. Visual resource analysis can be found in Section 3.3.7.No impacts are anticipated from the proposed alternatives.

Resource	Rationale for Why No Analysis Is Necessary
National Monuments/ National Conservation Areas	There are no National Conservation Areas located within the TMA. The closest National Conservation Area (NCA) is the John Wesley Powell NCA, which is over 100 miles northeast of the TMA. The 850-acre Jurassic National Monument sits within the TMA. The primary access road to this Monument, visitors center, and quarry is a well-maintained gravel road classified by the county as a Class B road. Other routes within the Monument include an existing route that accesses a water tank, and a route near the north boundary of the Monument. The primary access route, which is open in all alternatives, would continue to be used as such. Access to the water tank would continue to be needed and used for authorized purposes.
Outstanding Natural Areas, Research Natural Areas, National Wildlife Refuges	There are no research natural areas, outstanding natural areas, or national wildlife refuges within the TMA. The Ouray National Wildlife Refuge is over 90 miles to the northeast of the TMA. No impacts are anticipated from the proposed alternatives.
Wild and Scenic Rivers	There are no Congressionally designated, BLM suitable, or protected eligible Wild and Scenic River segments within the TMA. The designated Green Wild and Scenic River is located approximately 15 miles east of the TMA, and no impacts are anticipated from the route network alternatives due to their distance from the TMA.
National/State Parks	Capitol Reef National Park is located adjacent to the southwest corner of the TMA. Goblin Valley State Park is located within the southern part of the TMA. All inventoried routes that provide public access to either park unit are proposed to be designated OHV-Open in all action alternatives. The Horseshoe Canyon unit of Canyonlands National Park is over 20 miles southeast of the TMA. Arches National Park is over 35 miles east of the TMA. No impacts are anticipated from the route network alternatives as a result.
Wild Horses and Burros	The Muddy Creek and Sinbad herd management areas are within the TMA boundary. Use by the recreating public on designated routes would not affect the orderly administration of the Wild Horse and Burro Program. Viewing of Wild Horses and Burros can be done from these routes and have been for over 50 years. In situations where the animals feel uncomfortable, they are able to vacate the area. Therefore, the designation of routes within the TMA would not impact Wild Horses and Burros.

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2 ALTERNATIVES

2.1 TRAVEL NETWORK DEVELOPMENT METHODOLOGY

The BLM developed the proposed route network alternatives (see maps in Appendix B) by compiling an inventory of existing routes within the TMA (see Section 2.1.1); evaluating the routes in accordance with BLM policy (see Section 2.1.2), the 2017 Settlement Agreement, and the Dingell Act; and gathering and incorporating feedback from the public and cooperating agencies (see Sections 1.7 and 4.2).

2.1.1 ROUTE INVENTORY

From 2011-2018, the BLM created an *original route inventory* within the TMA using a combination of previous travel plans, aerial photography, BLM and County GIS data, maps, and ground-truthing (i.e., driving routes on the ground).

In 2019, the BLM refined the *original route inventory* in accordance with BLM Manual 1626 Section 1.4.C.6 by removing linear disturbances that are not travel related (e.g., game trails, cattle trails, fence-lines, reclaimed historic routes, reclaimed routes on old maps or aerial imagery, and seismic exploration scars), and in accordance with BLM Manual 1640 Section 1.6.B.2.b and c by removing permanent and temporary routes in the wilderness areas designated by the Dingell Act. This resulted in the *evaluation route inventory* which contained approximately 2,536 miles of routes.

In 2023, the BLM further refined the *evaluation route inventory* by removing 375 miles of routes the IDT determined had no public purpose or need. These removed routes include, but are not limited to, reclaimed routes (routes on old maps or aerial imagery that no longer exist on the ground), routes that are no longer capable of use by OHVs, wash bottoms that do not receive vehicle traffic, or routes that were old alignments and were redundant to other routes directly adjacent, or short dead-end spurs that had resource concerns identified.

The remaining 2,161 miles of routes is called hereafter the *total evaluated network.* The total evaluated network is the basis for the proposed network alternatives analyzed in this EA It includes routes managed as closed under the 2008 RMP which have received continuous public OHV use over time even when such use was not authorized so that substantial groundwork is not needed if they were to be designated OHV-Open or OHV-Limited. Therefore the 2,161 miles of routes in this inventory, if designated OHV-Open or OHV-Limited, will not result in new surface disturbances.

The *preliminary alternatives route inventory* is synonymous with the "total evaluated network" referenced throughout this EA.

2.1.2 ROUTE EVALUATION AND NETWORK ALTERNATIVE DEVELOPMENT

Beginning in 2019, the BLM interdisciplinary team (IDT) and cooperating agencies (the evaluators; see Section 4.2.1 for a list of cooperating agencies) evaluated the approximately 2,536 miles of routes in the evaluation route inventory. Week-long route-evaluation meetings were held every month for nearly two years. During those meetings, the evaluators reviewed each route using agency GIS data (including resource survey data), personal knowledge, and, when necessary, data from field checks. For each route, the evaluators documented the following:

- characteristics (e.g., maintenance frequency, class, use level, vehicle type accommodation),
- condition (e.g., braiding, washed out),
- connectivity (e.g., if the route on adjacent land ownerships are open to public use),

- public purpose and need (e.g., destinations or experiences provided by the route, whether the other routes provide access to the same destinations or experiences),
- known user conflicts,
- official and/or authorized uses (e.g., facility access, permit access, etc.),
- recreational attractions (e.g., campsites, overlooks),
- resource values (e.g., within or near special status species or habitat), and
- necessity of the route within the network alternative considering that alternative's theme (resource protection emphasis, multiple use emphasis, and access emphasis).

In addition to cataloguing the resources relating to each route and route attributes, the reports include the proposed designation for the subject route under each alternative travel network. When identifying proposed designations, the evaluators weighed the purpose and need for each route against the resource conflicts, along with the route's role in the overall travel network, to determine in which, if any, of the action alternatives B-D the route would be designated for OHV use. Additionally, evaluators considered and discussed route locations and characteristics and explored opportunities and techniques for avoiding or mitigating route designation effects to minimize damage, disruption, and conflict with various resources and among users. The evaluators proposed routes as open, limited, or closed in areas where doing so would result in minimal resource damage or redirect travel to routes in less sensitive areas. In some cases, the evaluators identified management actions associated with the proposed route designations. Those management actions BLM has committed to are documented in Appendix H. The evaluators also considered network connectivity and alternative goals to create the proposed range of alternatives.

In 2023, to create the route network alternatives, the BLM IDT spent nine weeks updating the route evaluation data in the route reports to incorporate public scoping comments, as appropriate; data gathered during additional site visits; updated land with wilderness characteristics (LWC) inventories; and various survey findings (cultural resources, special status plant, and Mexican spotted owl). During this time, the BLM also delineated 22 route network geographic areas (see Appendix C and Map 7). These areas were delineated based on natural separating features such as topography, major roads such as Interstate 70, and the already established TMP boundary. In addition to the separating features, the BLM also considered the diverse recreational experiences and opportunities that were present to help further separate the route network geographic areas. The BLM then revised the proposed range of alternatives considering the new information and the network connectivity in these smaller geographic areas. The BLM also documented how route minimization is being accomplished by opening and closing routes within each area. The changes resulted in the BLM's preliminary route network alternatives.

In February 2024, the BLM released the preliminary route network alternatives to the cooperating agencies and then the public so they could provide feedback. In April 2024 the BLM reviewed over 500 comments received and made changes as appropriate. Most of the comments expressed route designation preferences that were already represented in at least one alternative and therefore did not result in any changes. The BLM received comments on approximately 20 routes that were proposed as OHV-Closed in every action alternative. The BLM reviewed and considered those comments carefully and either changed the proposed designation in Alternative D to OHV-Open or documented in the project record reasoning for not making any changes. Where comments asserted that BLM needed to adjust route-related data in the route reports, BLM did so, as appropriate.

2.2 ALTERNATIVES

OHV route designations (OHV-Open, OHV-Limited, and OHV-Closed) are defined in Appendix I and on page 7-3 of the BLM Travel and Transportation Management Manual (BLM 2016b). Maps showing proposed travel networks and designations for Alternatives A, B, C, and D can be found in Appendix B.

2.2.1 COMMON TO ALL ALTERNATIVES

The TMP Implementation Guide (Appendix H) describes actions that BLM would take after completion of the TMP regardless of the route network alternative selected (i.e., common to all alternatives). These actions include education and outreach, sign installation, route maintenance, enforcement, monitoring, and reclamation. The Implementation Guide identifies BLM's objectives, commitments, priorities, and applicable policies and regulations.

The route network alternatives are described below. Table 2-1 and Table 2-2 show the number of miles to be designated OHV-Open, OHV-Limited, and OHV-Closed in each alternative.

Table 2-1: Miles of Routes Proposed as OHV-Open, OHV-Limited, and OHV-Closed in Each Alternative

	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)
OHV-Open	1,330	1,112	-218	1,522	+192	1,924	+594
OHV-Limited	99	82	-17	180	+81	183	+84
OHV-Closed	732	967	+235	458	-274	53	-679

Table 2-2: Miles of Evaluated Routes by Specific 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)
Open to all use (OHV-Open)	1,330	1,112	-218	1,522	+192	1,924	+594
Limited to vehicles less than 66" (OHV-Limited)	-	23	+23	58	+58	47	+47
Limited to vehicles less than 52" (OHV-Limited)	3	3	-	-	-3	-	-3
Limited to single-track vehicles (OHV-Limited)	47	42	-5	103	+57	118	+72
Limited to E-bikes (OHV-Limited)	12	12	-	17	+5	17	+5
Limited to aircraft (OHV-Limited)	-	0	+0	1	+1	1	+1
Limited by season (OHV-Limited)	37	1	-36	1	-36	-	-37
Closed (OHV-Closed)	732	967	+235	458	-274	53	-679

2.2.2 ALTERNATIVE A (NO ACTION)

Alternative A represents the continuation of current designations alternative (hereafter called "No Action") and consists of the 2008 Price RMP and 2008 Richfield RMP route designations within the San Rafael Swell TMA boundaries. Alternative A includes designated routes (on BLM-managed lands only) available for OHV use (OHV-Open or OHV-Limited) as described in the 2008 Price RMP (pg. 37) and depicted on Map R-18; and as described in the 2008 Richfield RMP (pg. 122-127) and as depicted on

Map 16. The routes designated in the 2008 RMPs as OHV-Open comprise 61% and OHV-Limited comprise 5% of the total evaluated route miles. Under this alternative, 34% of evaluated route miles throughout the TMA would be managed as OHV-Closed.

While changes are not proposed under Alternative A, it still provides for continuation of current route designations and would have route use-related effects comparable to the action alternatives. Alternative A is used as a baseline for comparison between the alternatives.

2.2.3 ALTERNATIVE B (RESOURCE PROTECTION EMPHASIS)

Alternative B prioritizes protection of resources, including, but not limited to, wildlife habitats, natural and cultural resources, ecosystems, and landscapes. OHV use is more constrained under this alternative than under any other alternative. For example, route closures were prioritized in BLM natural areas[8] and LWCs as well as special status species habitats to reduce resource conflicts. BLM did not prioritize route closures in areas that did not include these sensitive resources. Under this alternative BLM retained routes for OHV-based recreation and access in areas such as the Sids Mountain and Behind the Reef route network geographic areas (see Appendix C). In Alternative B, 51% of the evaluated route miles would be designated OHV-Open, 4% OHV-Limited, and 45% would be closed. Of the routes designated as OHV-Limited, 68 miles would be limited by vehicle size, 12 miles would be limited to e-bikes, 0.5 miles would be limited to aircraft, and 1 mile would be limited seasonally (an access route to Jurassic National Monument allowing public use only when the Monument is staffed).

2.2.4 ALTERNATIVE C (MULTIPLE USE EMPHASIS)

Alternative C represents a balanced approach to OHV access opportunities and a variety of management actions which resolve resource conflict issues and management concerns while still ensuring substantial OHV access. 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. It also incorporates width limitations to reduce motorized user conflicts.

In this alternative, 70% of the evaluated route miles would be designated OHV-Open, 8% OHV-Limited, and 22% OHV-Closed. Of the OHV-Limited routes, 161 miles would be limited by vehicle size, 17 miles would be limited to e-bikes, 1 mile would be limited to aircraft, and 1 mile would be limited seasonally (an access route to Jurassic National Monument allowing public use only when the Monument is staffed).

2.2.5 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. These include additional routes designations in historic mining areas such as Calf Mesa, Temple Mountain, Tomsich Butte, and Buckmaster Draw.

There are 53 miles of routes included in the evaluated network that are open in the existing TMP (Alternative A) but are receiving negligible to no use from the public (no public purpose or need), have a known resource issue that needs to be resolved, or are otherwise not sustainable. BLM has proposed closing those routes in Alternative D (these 50 miles are also closed in Alternatives B and C).

[8] BLM natural areas are LWC inventory units determined to possess lands with wilderness characteristics in which an RMP decision states BLM would manage to protect, preserve, and maintain their inventoried wilderness characteristics.

In this alternative, 89% of the evaluated route miles would be designated OHV-Open, 9% would be designated OHV-Limited, and 2% would be closed. Of the OHV-Limited routes, 165 miles would be limited by vehicle size, 17 miles would be limited to e-bikes, and 1 mile would be limited to aircraft.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The BLM considered but dismissed from detailed analysis the following alternatives.

2.3.1 DESIGNATE NON-ROUTES FOR OHV USE

The BLM considered opening disturbances noted in the original route inventory (e.g., game trails, cattle trails, fence lines, etc. See Section 2.1.1) to OHV use.

These disturbances are not currently capable of accommodating OHV use, and construction of new routes is not within 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. 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 applicable law, including NEPA, and Travel-related decisions in the 2008 RMPs.

This plan's purpose and need (Section 1.2) limits the scope of the plan to designating existing routes capable of accommodating OHVs as OHV-Open, OHV-Limited, or OHV-Closed. The BLM did not carry this alternative forward for detailed analysis because it would not conform to the plan's purpose and need.

2.3.2 DESIGNATE ALL ROUTES OHV-CLOSED

The BLM considered designating all evaluated routes in the TMA OHV-Closed.

This alternative would not meet the purpose and need because designating all evaluated routes as OHV-Closed fundamentally represents an elimination of the travel network rather than designating a travel network that provides for OHV use. In addition, this alternative would not conform to the 2008 Price RMP's goal to provide a network of roads across public lands and objective to develop and maintain a Transportation Plan. The BLM did not carry this alternative forward for detailed analysis because it would not conform to the plan's purpose and need.

2.3.3 DESIGNATE ALL ROUTES AVAILABLE FOR OHV USE

The BLM considered designating all evaluated routes in the TMA as available for public OHV use. This alternative would not meet the purpose and need because designating all evaluated routes as available for OHV use does not account for the regulations at 43 CFR § 8342.1 which require designations to be based on the protection of the resources of the public lands, the promotion of the safety of all the users of public lands, and the minimization of conflicts among various uses of public lands. It would also not account for the 2017 Settlement Agreement requirement that a "route without an identified purpose and need will not be proposed as part of the dedicated route network." In addition, this alternative would not conform to the 2008 Price RMP's management decision TRV-4 that requires the BLM to reduce road density, maintain connectivity, and reduce habitat fragmentation, and continue to require reclamation of redundant road systems or roads that no longer serve their intended purpose. The BLM did not carry this alternative forward for detailed analysis because it would not conform to the plan's purpose and need.

2.3.4 DESIGNATE 375 MILES OF INVENTORIED ROUTES THAT HAD NO IDENTIFIED PURPOSE AND NEED FROM INTERNAL AND PUBLIC SCOPING

The BLM considered authorizing OHV use on approximately 375 miles of evaluated routes that were identified as having no public purpose and need. Examples of these routes include, but are not limited to, reclaimed routes (routes on old maps or aerial imagery that no longer exist on the ground), routes that are no longer capable of use by OHVs, wash bottoms that do not receive vehicle traffic, or routes that were old alignments and were redundant to other routes directly adjacent, or short dead-end spurs that had resource concerns identified. This plan's purpose and need (Section 1.2) limits the scope of the plan to existing routes capable of use by OHVs. Additionally, the Settlement Agreement specifies that "A route without an identified purpose and need will not be proposed as part of the dedicated route network in any action alternatives in the NEPA document." The BLM did not carry this alternative forward for detailed analysis because it would not be consistent with BLM's obligations under the 2017 Settlement Agreement or conform to the plan's purpose and need.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 OVERVIEW

This chapter describes the existing condition and trend of issue-related elements of the human environment that may be affected by the route network alternatives. It also identifies the known and predicted effects (BLM 2008a) which are related to the issues (BLM 2008a) that are identified in Section 1.7.3 and analyzed in Section 3.3. Whereas the analysis area for each issue is specific to the issue being analyzed, the TMA is the same for all alternatives. For an overview of the TMA setting, see Section 1.4.

3.1.1 GENERAL SETTING AND ASSUMPTIONS

As part of OHV use of designated routes, the BLM assumes that OHVs may occasionally need to pull off for purposes of passing or parking. The BLM documented known off-route parking areas on evaluated routes in the Route Reports (Appendix G). It is assumed that pulling completely off a route for passing or parking only occurs on the narrow, low-use routes because wide, high use routes typically have adequate room or pull-off locations for passing or parking (e.g., additional existing width from roadside ditches, drain dip outlets, or spur route intersections). It is further assumed that, on narrow, low-use routes vehicles parking or passing off-route is infrequent. However, when vehicles do have to park or pass along these routes, it is assumed that they would typically pull off the designated route to the minimum extent possible to safely park. For analysis purposes, the routes identified as "roads" in the route evaluation process, totaling 413 miles, are assumed to have room for parking or passing, and the routes identified as "primitive road, trail, primitive route, temporary route, or transportation linear disturbance," totaling 1,748 miles, are those where parking or passing may infrequently occur.

From site-specific vehicle counters, the BLM estimates that the five most popular recreation opportunities within the Buckhorn/Wedge and Temple Mountain Recreation Management Zones (RMZs)—the Wedge Overlook, Buckhorn Draw, Wild Horse Road, Temple Wash/Temple Mountain, and Little Wild Horse Canyon—account for 41.5% of recreation visits to the TMA (see Table 3-13). Based on this prominent concentration of recreational use, even though the alternatives would change the route networks available for motorized recreation opportunities they would not meaningfully change visitation to these popular areas nor would they result in visitor use being distributed differently across the TMA.

Also, there are approximately 140 miles of evaluated routes subject to TRC-30 and -31 in the Richfield RMP. For these routes, the RMP makes specific allowances for parking and staging along designated routes within 50 feet of centerline (TRC-30) as well as dispersed camping at existing campsite disturbances on existing spur routes along designated routes within 150 feet of centerline (TRC-31). For evaluated routes subject to TRC-30 and -31 that BLM is proposing to designate as OHV-Open or OHV-Limited, the BLM assumes in this EA that impacts of use within the off-route allowance is substantially similar to those associated with use along the route where BLM is proposing to authorize OHV use. This assumption is supported by the route-specific resource data documented during route evaluations which document resources within at least 150 feet of all routes. BLM's documentation shows that the resources present within the off-route allowances are the same as or substantially similar to those associated with the route BLM is proposing to designate as OHV-Open or OHV-Limited.

None of the alternatives would authorize the construction of routes, authorize use of a route that has not already been subject to ongoing use even if such use was unauthorized, add or remove access to major area destinations, authorize events, create or remove an attraction that would draw new visitors, or authorize an action (such as construction) that would involve worker access. The impacts that occurred when the routes were created are ongoing.

For the purposes of estimating the temporal scope of the impacts, the BLM assumes the timeframe for this plan is 20 years in order to account for impacts that may occur over longer timeframes such as reclamation success.

Finally, the BLM assumes that public land users will operate their OHVs in accordance with the TMP designations and the regulations.

3.2 CUMULATIVE IMPACT SCENARIO

This section outlines past, present, and reasonably foreseeable future actions and trends in Emery County, Sevier County, plus the recently signed TMPs that have a relationship to potential resource effects associated with the alternatives. This section appears prior to the impacts analysis because it is intended to provide broad context for those analyses and the activities occurring region wide. The cumulative effects associated with the issues are then discussed on an issue-by-issue basis in Section 3.3 and are informed by the data and information provided here. In recent decades, the influences on the landscape in the region of southeastern Utah that the TMA falls within include the following:

- Travel management planning
- Livestock grazing and grazing management
- Utilities and water development
- Wildlife habitat management
- Recreation
- Mineral development

The acreage of the region with these influences on the landscape are provided in Table 3-1. All these influences on the landscape in this area are anticipated to continue based on information available to BLM at this time. Reasonably foreseeable future actions over the 20 years are detailed in Section 3.2.1 through 3.2.6.

Table 3-1: Acres in Regions Relevant to the Cumulative Actions in the Analysis Area.

Event or Action	Acres in Regions
Travel Management Planning: San Rafael Desert TMA	377,609
Travel Management Planning: Labyrinth Rims Gemini Bridges TMA[1]	300,000
Travel Management Planning: Canyon Rims (Indian Creek) TMA[1]	90,955
Livestock Grazing and Grazing Management[1]	1,910,977
Utilities and Water Development: Solar Development[1]	2,361
Utilities and Water Development: Goblin Valley Power and Fiber Optic Line[2]	65
Utilities and Water Development: Olsen Reservoir expansion[2]	1,300
Wildlife Habitat Management: Price and San Rafael River Restoration[1]	10,000
Recreation: Swinging Bridge Campground[1]	25
Recreation: Buckhorn Wash Campground[1]	15
Recreation: Temple Mountain Townsite Campground[1]	5

Event or Action	Acres in Regions
Recreation: South Temple Wash Campground[1]	5
Recreation: Wedge Campground[2]	66
Mineral Development: Locatable[1]	127
Mineral Development: Mineral Materials[1]	77
Mineral Development: Fluid	150

[1]These events/actions have had influences on the landscape in recent decades (past events/actions), are current influences (present events/actions), and are anticipated to continue into the future (reasonably foreseeable future actions).
[2]These events/actions have not occurred yet. They are reasonably foreseeable future actions.

3.2.1 TRAVEL MANAGEMENT PLANNING

Utah BLM has 31 TMAs throughout the state. Thirteen of those TMAs, including the SRS TMA, are a part of the Settlement Agreement that is applicable to this planning effort:

- Henry Mountains and Fremont Gorge,
- Dinosaur (North),
- Book Cliffs,
- Nine Mile Canyon,
- San Rafael Desert,
- Canyon Rims (Indian Creek),
- Book Cliffs,
- Labyrinth Rims Gemini Bridges,
- Dolores River,
- Trail Canyon, and
- Paunsaugunt.

The Labyrinth/Gemini Bridges TMA, Canyon Rims (Indian Creek) TMA, and San Rafael Desert TMA have recent TMPs and are considered in the analyses provided here. The remainder are not included in the analysis because they have not been completed.

3.2.2 LIVESTOCK GRAZING AND GRAZING MANAGEMENT

Livestock grazing has occurred extensively across the region in recent decades. The BLM Price and Richfield field offices currently manage 62 grazing allotments that are relevant to resource effects. These allotments make up 1,910,977 acres of the region and contain numerous rangeland improvements. Livestock grazing is reasonably foreseeable to continue.

3.2.3 UTILITIES AND WATER DEVELOPMENT

On BLM, state, and private lands, there are two relevant utilities/water developments that are reasonably foreseeable in the region: Goblin Valley Power and Fiber Optic Line and Olsen Reservoir expansion. These developments would result in 1,300 acres of disturbance. Additionally, there are 2,361 acres of state land slated for reasonably foreseeable solar development.

3.2.4 WILDLIFE HABITAT MANAGEMENT

Within the region, there are a variety of known plans and structures related to wildlife habitat management including private, state, and federal restoration initiatives, conservation monitoring, and vegetation treatments. The BLM and the Utah Division of Wildlife Resources and partners began San Rafael River Restoration projects in 2015 and Price River Restoration projects in 2020. These efforts are reasonably foreseeable to continue. The Price River Restoration projects are planned to encompass 9,884 acres. On the lower San Rafael River, approximately 70 acres of tamarisk removal has occurred, and a few hundred acres of additional treatments are planned. BLM monitoring efforts for plants and vegetation management are on-going throughout the region and are reasonably foreseeable to continue.

3.2.5 RECREATION

Within the region, motorized and nonmotorized recreation use occurs. To better manage some of the popular areas within the region there are managed sites and recreation facilities established. BLM anticipates motorized and nonmotorized visitation and recreation in the TMA will increase over time commensurate with population growth regardless of which alternative is selected, as observed elsewhere in Utah (Smith and Miller 2020). The PFO BLM actively manages Special Recreation Management Areas (SRMAs) to attain outcomes identified in the 2008 Price RMP (see the RMP's Appendix R-9), ministers special recreation permits (SRPs) for commercial operators and organized groups on designated routes, and provides a variety of free, dispersed recreation in accordance with 2008 Price RMP policy. Specific regional opportunities include casual motor vehicle touring for scenery appreciation, nature photography, off-roading, mountain biking, canyoneering, river running, hunting, equestrian riding, backpacking, hiking, astronomy, geology study, viewing cultural sites, and camping. The PFO has four campgrounds making up 50 acres of land and 66 acres planned for an additional campground to be constructed in the next three years. BLM actively works on improving existing trailheads and staging areas that are delineated with fencing, resurfacing, and adding informational kiosks. Additionally, the counties maintain routes classified by the county as Class B for use by all motor vehicles, and BLM/counties both maintain routes classified by the county as Class D, or not county claimed, on an as needed basis, especially those popular among OHV recreationists. External to BLM, the state of Utah manages Goblin Valley State Park[9] and the Historic Spirit Railroad Complex which bring recreationists into the region each year, many likely traveling across BLM lands.

3.2.6 MINERAL DEVELOPMENT

The BLM allows for mineral development. There are approximately 127 acres of locatable minerals and 77 acres of mineral materials disturbance currently allowed in active plans of development within the region. The 2008 Price and Richfield RMPs' Mineral Potential Reports found no occurrence potential for coal bed methane for the TMA (Mineral Potential Report Map 27). Further, a review of BLM and Utah Division of Oil, Gas, and Mining data[10] found 7 existing shut-in oil wells and 3 temporarily abandoned wells (not producing but capable of production) that are relevant to the plan. Assuming 5 acres per well, that would total 150 acres of disturbance. Finally, GIS data showed 27 existing, relevant leases within the region, making oil and gas development reasonably foreseeable.

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[9] Goblin Valley State Park brought in 413,376 visitors in 2023. https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fstateparks.utah.gov%2Fwp-content%2Fuploads%2Fsites%2F13%2F2023%2F07%2FVisitation-FY23-Final.xlsx&wdOrigin=BROWSELINK

[10] Utah Division of Oil, Gas, and Mining data also identified 148 wells that were either plugged and abandoned, or location abandoned but not drilled. These are not considered to be past, present, or reasonably foreseeable future activities because they were never drilled or they have been completely reclaimed and accepted for final abandonment, therefore they are not or are no longer impacting the environment.

3.3 ISSUES ANALYZED IN DETAIL

The following issues are analyzed in detail because the relate to how the proposed action or alternatives respond to the purpose and need or analysis is needed to determine the significance of the impacts.

3.3.1 CULTURAL RESOURCES

Issue 1: How would the route network alternatives impact cultural resources within the TMA?

The analysis area for cultural resources impacts[11] is the area within a quarter mile buffer of all routes proposed for designation as OHV-Open or OHV-Limited within each travel network alternative because that encompasses the area of potential effect. The temporal scope of analysis is 10 years (see Section 3.1.1). The analysis area includes routes within the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its cultural, historical, and educational resources.

Please refer to Appendix F for cultural resource regulatory considerations and definitions.

3.3.1.1 Affected Environment

To identify and document cultural resources, BLM contracted two permitted Cultural Resource Management firms to compile literature reviews for both Area of Potential Effects (APE) and conduct Class III Intensive Field Surveys of 22,442.62 acres in the direct APE between 2019–2021 (Cannon and Schwendler 2020; Krussow et al. 2021). The BLM archaeologist reviewed previously recorded site data in the direct APE where Class III was not required, per the 2017 Settlement Agreement and Travel PA. The contractors documented 173 isolated finds and recommended them all insignificant. In total, BLM analyzed 1,398 cultural sites through the Section 106 process for this TMP.

The cumulative impact scenario described in Section 3.2 of this EA provides a quantitative overview of past, present, and reasonably foreseeable future federal undertakings in the TMA. All the actions listed in Section 3.2 have potential to affect historic properties. The risk of impacts to cultural resources from the federal actions in the table is low, due to the federal government's responsibility to comply with the National Historic Preservation Act (NHPA).

3.3.1.2 Environmental Effects Analysis

683 sites occur in the direct APE, of which up to 332 are physically intersected by routes under the alternatives being considered (Table 3-2). 220 sites are near (within 100 feet) but not physically intersected by routes (Table 3-3). 715 sites occur within the indirect APE (Table 3-4) When qualified by NRHP eligibility and quantified by network alternative, the occurrence of cultural sites can be compared between alternatives as displayed in Table 3-2 through Table 3-4[12]:

[11] The NEPA analysis herein is formulated using the results of BLM's Section 106 process and uses the Section 106 definitions of terms, which differ slightly from the NEPA term definitions but are analogous enough to be comparable and discussed across both laws. The objective of Section 106 corresponds with NEPA's objective – to identify what potential impacts and effects this TMP could pose to cultural resources through continued public OHV use of routes. For more information see Appendix F.

[12] The numbers in these tables are the best available data at the time of writing.

Table 3-2: Number of Cultural Sites Intersected by Open/Limited Routes (Direct APE)

Site Status	Alt A	Alt B	Alt C	Alt D
NRHP Listed	2	1	1	1
NRHP Eligible	96	67	101	119
Not Eligible for NRHP	136	105	157	197
Undetermined NRHP Eligibility	12	9	15	15
Total Sites in Alternative	246	182	274	332

Table 3-3: Number of Cultural Sites within 100 Feet of Open/Limited Routes (Direct APE)

Site Status	Alt A	Alt B	Alt C	Alt D
NRHP Listed	1	1	1	2
NRHP Eligible	51	48	64	67
Not Eligible for NRHP	97	76	106	130
Undetermined NRHP Eligibility	15	12	16	21
Total Sites in Alternative	164	137	187	220

Table 3-4: Number of Cultural Sites within ¼-Mile of Open/Limited Routes (Indirect APE)

Site Status	Alt A	Alt B	Alt C	Alt D
NRHP Listed	4	5	6	5
NRHP Eligible	167	171	197	225
Not Eligible for NRHP	208	197	248	279
Undetermined NRHP Eligibility	149	109	176	206
Total Sites in Alternative	528	482	627	715

Both incidental and intentional human impacts can pose threat to cultural resources in numerous ways (Sampson 2009). Direct or indirect adverse effects may occur to historic properties if impacts from use of routes designated as OHV-Open or OHV-Limited become intense enough to damage their NRHP significance. For example, OHV travel through or immediately adjacent to a historic property could cause soil erosion from tires resulting in exposure and erosion of significant in situ artifact deposits or subsurface features at the time of the activity or incrementally over time, damaging or destroying the archaeological data they contain and therefore their ability to convey their national or regional importance within their cultural context. Other examples of causal factors notably include illegal activity impacts; easy public access can increase incidences of crime, such as vandalism and looting with malintent or through negligence. Incidental or intentional impacts from everyday outdoor public recreation activities using or based out of OHVs may also occur, such as dispersed camping fire rings, trash, and personal waste within sites. OHV route use in close vicinity to sites may also contribute to dust accumulation on cultural resources; however, dust caused by passing OHVs versus natural dust caused by constant winds are indistinguishable during site documentation.

In 2008, archaeologist Spangler studied vandalism and recreational impacts to cultural resources in Nine Mile Canyon, which has a 45-mile stretch of winding road through a ravine valley in Carbon County, Utah. This study is an appropriate model for comparison to the TMA analysis, because Nine Mile Canyon is similarly popular with recreationists as the San Rafael Swell. Krussow et al. summarized the Spangler results comparable to their observations during the San Rafael Swell TMA Class III surveys as follows:

> Spangler's (2008) study determined that the proximity of a road did not correlate with looting at sites in Nine Mile Canyon; however, it was noted that sites with residential structures were targeted, especially sites with features visible from the road. Easy access from roads was also a determining factor for graffiti at sites. Spangler found that rock art

> sites located 30 meters or less from a road had a 35 percent chance of being impacted by graffiti. Recreational impacts such as social trails, litter, and evidence of camping (which could directly affect sites when campers gather in groups, collect firewood, or unintentionally bury their waste in cultural deposits) were also assessed. In Nine Mile Canyon, social trails (42 percent well-worn trails and 17 percent ephemeral trails) had been established, and trash was observed along 38 percent of the sites in the study. In the [San Rafael Swell] TMA . . . archaeologists noted several well-worn trails and many ephemeral trails leading to rock art and mining sites, as well as litter and evidence of camping in several areas. It should be noted that most of these trails and camp spots are a long-term result of the dispersed camping permissible on BLM lands in Emery County [as was the case in Nine Mile Canyon prior to 2008]. There are also well-established, user-created campgrounds the BLM aims to contain against proliferation. These include several RMP-designated, fee-based built campgrounds with single and group space options, picnic tables, fire pits, and facilities the BLM regularly maintains to reduce camping proliferation and] control human waste (2021).

Assuming an historic property is present on a route, designating that route OHV-Open or OHV-Limited means public OHV users will have the potential to cause adverse effects. The inverse is also true: designating that route OHV-Closed eliminates the potential for public OHV use to cause adverse effects, meaning a determination of no adverse effect can be reached. Therefore, designating routes OHV-Closed through this action would be the most effective method of protecting cultural resources in the TMA, assuming OHV users behave responsibly and do not intentionally perpetrate unauthorized access or illegal activities (Hedquist et al. 2014).

Based on the above analyses, the BLM determined OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (See Appendix H) may result in adverse effects to historic properties, the quantity of which depends on the chosen alternative. All potential effects to historic properties were assessed and can be compared across route network alternatives as follows (Table 3-5).

Table 3-5: TMP Effects on Historic Properties Under Section 106[13]

TMP Effects	Alt A	Alt B	Alt C	Alt D
Potential Adverse Effects	6	2	3	4
No Adverse Effects	1	2	2	2
No Historic Properties Affected	23	40	61	69
Undetermined NRHP Eligibility	6	2	3	4

BLM anticipates reaching a Section 106 determination of potential adverse effects to historic properties regardless of chosen alternative, so the BLM plans to prepare and consult on an Historic Properties Treatment Plan (HPTP), following Stipulation V of the Travel PA. The HPTP will outline BLM's proposed protective measures to avoid, minimize, or mitigate potential adverse effects during the TMP implementation through measures such as route delineations, spur closures, educational signs, protective signs, no camping/vehicles signs, fencing, barriers, and periodic site monitoring. For a description of the National Historic Preservation Act Section 106 Consultation, see Section 4.1.1.

[13] The numbers in this table are the best available at the time of writing.

Alternative A (No Action)

Alternative A would pose the most potential adverse effects to historic properties (6) and would require the BLM to implement the most protective measures. Alternative A would have more potential adverse effects than Alternatives B, C, or D.

Alternative B (Resource Protection Emphasis)

Alternative B would pose the least potential adverse effects to historic properties (2) than any other alternative and would require the BLM to implement the fewest number of protective measures. Alternative B has the fewest potential adverse effects compared to the other alternatives.

Alternative C (Multiple Use Emphasis)

Alternative C would pose fewer potential adverse effects to historic properties (3) than Alternative A and would require BLM to implement fewer protective measures. Alternative C has more potential for adverse effects than Alternative B, but less than Alternatives A and D.

Alternative D (Access Emphasis)

Alternative D would pose fewer potential adverse effects to historic properties (4) than Alternative A, but more than Alternatives B or C. Alternative D would require the BLM to implement more protective measures than Alternatives B or C. Alternative D has more potential for adverse effects than Alternatives B and C, but less than Alternative A.

Cumulative Impacts

Therefore, impacts to cultural resources from the past, present and reasonably foreseeable future events/actions (Section 3.2) have been and will continue to be low, within the acceptable range discussed above that would not cause adverse effects to historic properties.

To demonstrate this quantitatively: in the 58 years since the NHPA was signed into law (1966), 369 Section 106 compliance projects have taken place within the TMA boundary. Of those 369 projects[14], fewer than 234 (63%) occurred in or overlapped this TMP's Section 106 indirect APE. Since the 2017 Settlement Agreement was reached only one (0.4%) of the projects—Morrison-Knudsen Tunnels Safety Maintenance—was considered within the TMP's indirect APE that would have caused an adverse effect to a historic property (42EM3491, Morrison-Knudsen Tunnels), had it been implemented. In 2018, after weighing the project's purpose and need against the adverse effect it would cause, BLM cancelled the NEPA action to protect the historic property. BLM anticipates the TMA's past, present, and reasonably foreseeable events/action would continue these trends regarding cultural resources and protection of historic properties further in time and farther in distance when future actions under the types of activities listed in Section 3.2 are proposed in the TMA.

[14] Includes projects on private and state-administered properties within the TMA, therefore projects only occurring on the BLM-administered land being considered for this TMP action were fewer than 369.

3.3.2 LANDS WITH WILDERNESS CHARACTERISTICS AND BLM NATURAL AREAS

Issue 2: How would the route network alternatives impact size, apparent naturalness, outstanding opportunities for solitude or primitive and unconfined recreation in lands identified by the BLM as possessing wilderness characteristics?

The analysis area is the Lands with Wilderness Characteristics (LWC) unit and BLM natural area boundaries overlapping the TMA, including portions of those BLM natural areas extending beyond the TMA because these units have the potential to be impacted by travel management decisions contemplated in this EA. The temporal scope of analysis is 20 years (see Section 3.1.1)

See appendix F for

3.3.2.1 Affected Environment

LWC units are public lands inventoried per BLM Manual 6310 – Conducting Wilderness Characteristics Inventory on BLM Lands (BLM 2021b) that generally contain at least 5,000 contiguous roadless BLM acres, or if less than 5000 acres, are contiguous to an area of Federal lands formally managed for the protection of wilderness characteristics such as designated Wilderness, WSA, or recommended wilderness in USFS or NPS lands. LWC units have been further determined to possess naturalness by appearing to be primarily affected by the forces of nature, provide outstanding opportunities for solitude and/or primitive and unconfined recreation, and may have supplemental values such as ecological, geological, or other scientific, educational, or historical (BLM 2021b). LWC inventory findings are only a resource determination and are not a special land use allocation or designation per se. LWC units are not solely managed for the protection of their wilderness character unless a BLM land use planning decision has been made to manage the unit as a BLM natural area. Distinct from any planning decisions, under 43 CFR § 8342.1 the BLM has the obligation to minimize impacts to resources, including wilderness character, when designating OHV routes. Similarly, 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."[15]

The TMA has 17 inventoried LWC units comprising 270,715 acres of BLM lands (see Map 6), within which are 239 miles of evaluated routes; see Table 3-6 showing each LWC unit's acres and miles of evaluated routes.

[15] The baseline monitoring report, available on this plan's ePlanning page, was made publicly available on September 16, 2021. Any routes showing "damage" have been monitored in the interim in accordance with the 2017 Settlement Agreement.

Table 3-6: LWC Units

LWC Unit Name	Inventory Date	Acres on BLM Lands	Miles of Evaluated Routes in LWC Unit
Block Mountain LWC	4/13/2021	9,144	6
Cedar Mountain LWC	12/1/1999	14,979	0.1
Devils Canyon LWC	2/18/2021	12,246	19
Jones Bench LWC	12/1/2007	605	1
Limestone Cliffs LWC	12/1/1999	23,865	19
Limestone Cliffs Ext LWC	12/1/2007	2,046	3
Lost Springs Wash LWC	12/1/2007	4,904	9
Mexican Mountain LWC	12/1/1999	36,751	45
Muddy Creek-Crack Canyon LWC	4/12/2021	27,671	24
Mussentuchit Badland LWC	12/1/1999	24,979	13
Never Sweat Wash LWC	4/14/2021	7,185	12
Price River LWC	4/20/2021	7,921	10
Rock Canyon LWC	2/28/2021	18,067	9
San Rafael Reef LWC	4/20/2021	27,813	29
Sid's Draw LWC	12/1/2011	13,160	1
Sids Mountain LWC	4/13/2021	20,779	22
Upper Muddy Creek LWC	2/26/2021	18,684	17

BLM natural areas are LWC inventory units determined to possess lands with wilderness characteristics where BLM has decided, in an RMP decision, to manage to protect, preserve, and maintain their inventoried wilderness characteristics. Because natural areas are a discretionary management category resulting from an RMP decision, they differ from Wilderness areas designated per the Wilderness Act, and WSAs established under the authority of Section 603 of the FLPMA.

BLM natural areas in the TMA are managed for wilderness characteristics per the 2008 RMPs. The 2008 RMPs both explain BLM natural areas as follows:

> In future references, lands managed in the Approved RMP as non-WSA lands with wilderness characteristics will be referred to as BLM natural areas. This change does not represent a new designation or a new decision. Rather, BLM wants to recognize these discretionary decisions with a better, simpler reference. Wilderness Areas and Wilderness Study Areas are formal designations that are managed in a prescribed manner. To avoid confusing these official designations with discretionary agency decisions, BLM has chosen a new reference to distinguish between formal designations (e.g., Wilderness Areas) and a discretionary management category (BLM natural areas). According to the Approved RMP, BLM natural areas will be managed to protect, preserve, and maintain values of primitive recreation, the appearance of naturalness and solitude. (BLM 2008e, page 36; BLM 2008g, page 32)

The 2008 RMPs identified four BLM natural areas[16] consisting of 79,652 acres within the TMA (see Map 6). Within these BLM natural areas are a total of 47 miles of evaluated primitive routes (see Table 3-7). In

[16] On March 12, 2019, Public Law 116-9, the John D. Dingell Act, established: 1) Red's Canyon Wilderness Area over the majority of Hondu Country BLM natural area, 2) Little Ocean Draw, Little Wild Horse Canyon, Horse Valley, and Muddy Creek Wilderness Areas over the majority of Muddy Creek-Crack Canyon BLM natural area, 3) Big Wild Horse Mesa over the majority of Wild Horse Mesa BLM natural area, 4) San Rafael Reef Wilderness Area

the context of BLM natural areas, a primitive route is a transportation linear feature that does *not* meet the Wilderness Inventory Road definition (i.e., has not been constructed or improved, and maintained by mechanical means to ensure relatively regular and continuous use for its intended purpose).

Table 3-7: BLM Natural Areas in the TMA

BLM Natural Area Name	Acres on BLM Lands	Miles of Evaluated Primitive Routes
Hondu Country	20,102	1
Jones Bench[17]	2,542	0.5
Mexican Mountain	4,184	12
Muddy Creek-Crack Canyon	52,824	33

Both the 2008 Price RMP and the 2008 Richfield RMP limit OHV use within BLM natural areas to designated routes. In the PFO portion of the TMA, routes currently designated for OHV use, including those within natural areas, were all designated for OHV use in the 2003 San Rafael Route Designation Plan. The Jones Bench natural area within the 2008 Richfield RMP is located within the Sevier County portion of the TMA. Prior to the 2008 Richfield RMP, Jones Bench was open to cross-country travel. The 2008 Richfield RMP determined that the routes designated within Jones Bench natural area are few in number and that OHV use of the routes would result in minimal impacts and be consistent with BLM's decision to protect, preserve, and maintain values of primitive recreation, the appearance of naturalness and solitude in the natural area.

3.3.2.2 Environmental Effects Analysis

Continued OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Appendix H) within BLM natural areas and LWC units, has the potential to contribute to degradation or loss of wilderness characteristics resulting from travel-related impacts such as vehicle noise, vehicle tracks, creation or expansion of dispersed camp sites, resource damage from route proliferation, widening, or braiding, and other human impacts. OHV use can impact naturalness by perpetuating surface disturbance of routes and associated erosion and spreading noxious weeds.. OHV use produces localized and transient visual and auditory effects that may lead to diminished outstanding opportunities to experience solitude and/or primitive and unconfined recreation.

Human impacts to wilderness characteristics can occur near travel routes from dispersed camping, human waste, litter and trash dumping, hazardous fluid leaks, woodcutting, target shooting, vandalism, wildfires, etc., resulting in impacts to naturalness and supplemental values such as cultural sites, scenery, wildlife, geology, paleontology, or scientific values.

In remote, arid desert regions like the TMA, OHV routes within LWC units can provide crucial access for experiencing and enjoying wilderness characteristics. The travel network within the TMA provides important public access to trailheads, range improvements, and river put-ins or take-outs in support (e.g., transporting gear) of non-motorized activities such as equestrian riding or river running and other

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over the majority of San Rafael Reef BLM natural area, and 5) Mexican Mountain Wilderness Area over a portion of the Mexican Mountain BLM natural area. Inventoried routes within the designated Wilderness Areas that did not meet the definition of a "permanent road" under BLM Manual 6340, Management of BLM Wilderness, were removed from consideration for OHV designation. Roads excluded from the Wilderness Area boundaries (whether by Wilderness Area boundary or cherry-stem) but contained within the BLM natural area boundaries are considered in this section.

[17] While Jones Bench BLM natural area is less than 5,000 acres and as such would not qualify as having wilderness characteristics, it qualifies because it is contiguous to Capitol Reef National Park, which is managed for wilderness characteristics.

activities within LWC units. The same can be said for authorized livestock grazing and scientific research.

Route closures, through OHV-Closed designations and associated implementation actions such as reclamation, could reduce the overall footprint of the route network in affected BLM natural areas and LWC units over time. Reclamation of primitive routes within a LWC unit or BLM natural area would not contribute to an increase in acreage of inventoried wilderness characteristics within the unit because primitive routes were included in the overall acreage calculation during the LWC inventory. However, reclamation of primitive routes would remove the potential for negative impacts tied to OHV use and would produce an overall beneficial effect to wilderness characteristics.

In conformance with 43 CFR § 8342.1, trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established. The BLM has monitored and documented visually apparent unauthorized surface disturbances off routes as well as visually apparent damage points in the San Rafael Swell Travel Management Plan – Baseline Management Report in accordance with the Motor Vehicle Impact Monitoring Protocol. TMP implementation actions are designed to prevent adverse impacts to LWC units and BLM natural areas from continued OHV use in each alternative. Implementation actions for OHV-Closed routes or unauthorized impacts could include the placement of closure signs, installation of natural barricades, vertical mulching, reclamation, and monitoring by BLM staff, including BLM law enforcement or contractors. Short-term implementation effects could occur from a temporary loss of solitude from noise and presence of people and vehicles for the duration of the implementing action (e.g., the installation of the sign, or route barrier placement). Temporary impacts to naturalness would occur as long as signs or barriers were present at the closure. However, once closure signs or structures are removed, an overall long-term enhancement of wilderness characteristics would be realized.

Figure 3-1 and Table 3-8 are used to inform effects analysis. They indicate network miles that are *in* LWCs (that is, *not* boundaries). This mileage is used as an indicator of the networks' potential impacts to LWCs.

Figure 3-1: Miles of Evaluated Routes by Alternative in LWC

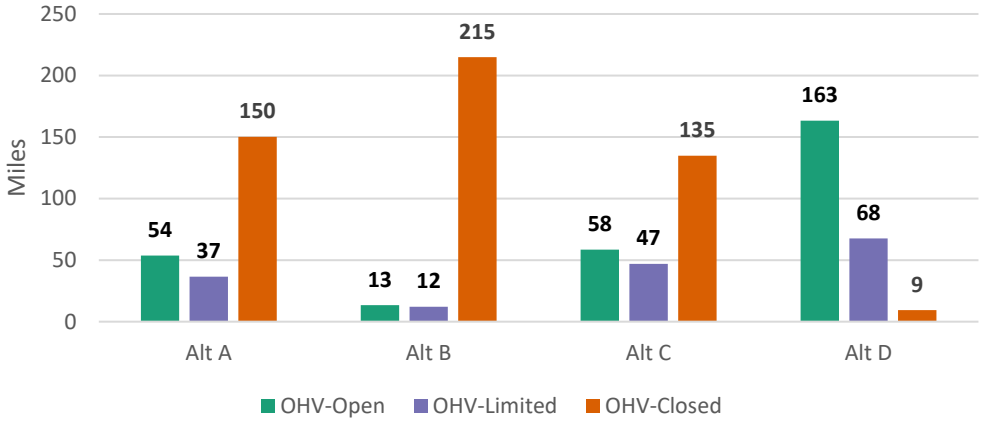


Table 3-8: Miles of Evaluated Routes by Alternative in Each LWC Unit

		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)
Block Mountain LWC	OHV-Open	2	-	-2	0	-1	5	+4
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	4	6	+2	5	+1	0	-4
Cedar Mountain LWC	OHV-Open	-	-	-	0.1	+0.1	0.1	+0.1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	0.1	0.1	-	-	-0.1	-	-0.1
Devils Canyon LWC	OHV-Open	-	-	-	-	-	19	+19
	OHV-Limited	-	-	-	1	+1	-	-
	OHV-Closed	19	19	-	18	-1	-	-19
Jones Bench LWC	OHV-Open	-	-	-	-	-	0.5	+0.5
	OHV-Limited	1	-	-1	-	-1	-	-1
	OHV-Closed	0.5	1	+1	1	+1	1	+0.5
Limestone Cliffs LWC	OHV-Open	6	-	-6	11	+4	14	+8
	OHV-Limited	9	-	-9	-	-9	-	-9
	OHV-Closed	3	19	+16	8	+5	4	+1
Limestone Cliffs Ext LWC	OHV-Open	-	-	-	1	+1	3	+3
	OHV-Limited	3	-	-3	-	-3	-	-3
	OHV-Closed	-	3	+3	2	+2	0.4	+0.4
Lost Springs Wash LWC	OHV-Open	7	-	-7	-	-7	1	-6
	OHV-Limited	-	-	-	7	+7	6	+6
	OHV-Closed	1	9	+7	2	+0.1	1	-0.3
Mexican Mountain LWC	OHV-Open	21	13	-8	28	+7	41	+20
	OHV-Limited	-	-	-	4	+4	4	+4
	OHV-Closed	24	32	+8	13	-11	0	-24
Muddy Creek-Crack Canyon LWC	OHV-Open	0.4	0.4	-	6	+5	18	+18
	OHV-Limited	-	-	-	-	-	6	+6
	OHV-Closed	24	24	-	19	-5	-	-24
Mussentuchit Badland LWC	OHV-Open	3	-	-3	3	+0.5	13	+10
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	10	13	+3	9	-1	0.1	-10

		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)
Never Sweat Wash LWC	OHV-Open	11	-	-11	-	-11	6	-5
	OHV-Limited	-	-	-	5	+5	6	+6
	OHV-Closed	2	12	+11	7	+6	1	-1
Price River LWC	OHV-Open	-	-	-	4	+4	9	+9
	OHV-Limited	-	-	-	2	+2	1	+1
	OHV-Closed	10	10	-	5	-5	-	-10
Rock Canyon LWC	OHV-Open	0.4	-	-0.4	1	+1	9	+9
	OHV-Limited	1	-	-1	-	-1	-	-1
	OHV-Closed	8	9	+2	8	+0.3	0.1	-8
San Rafael Reef LWC	OHV-Open	1	-	-1	1	-1	13	+11
	OHV-Limited	10	-	-10	14	+4	17	+7
	OHV-Closed	18	29	+11	15	-3	-	-18
Sid's Draw LWC	OHV-Open	0.5	-	-0.5	0.7	+0.2	1	+1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	1	1	+0.5	0.7	-0.2	-	-1
Sids Mountain LWC	OHV-Open	1	-	-1	2	+2	5	+4
	OHV-Limited	12	12	-	14	+2	17	+4
	OHV-Closed	9	10	+1	5	-4	1	-8
Upper Muddy Creek LWC	OHV-Open	0.2	-	-0.2	0.4	+0.2	5	+5
	OHV-Limited	-	-	-	-	-	11	+11
	OHV-Closed	16	17	+0.2	16	-0.2	0.2	-16

Indicators of potential OHV use impacts on BLM natural areas within the TMA include the miles of evaluated routes in the BLM natural areas, as shown in Figure 3-2 through Figure 3-5 and Table 3-9.

Figure 3-2: Miles of Evaluated Routes in the Hondu Country Natural Area

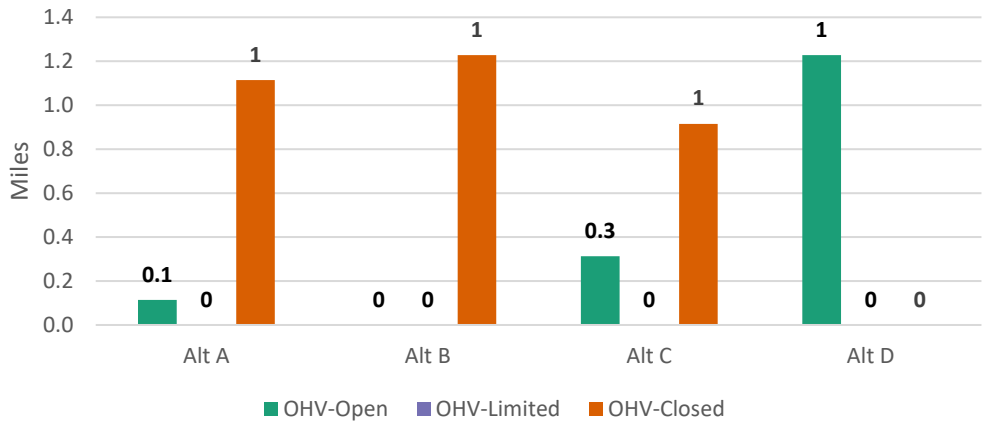


Figure 3-3: Miles of Evaluated Routes in the Jones Bench Natural Area

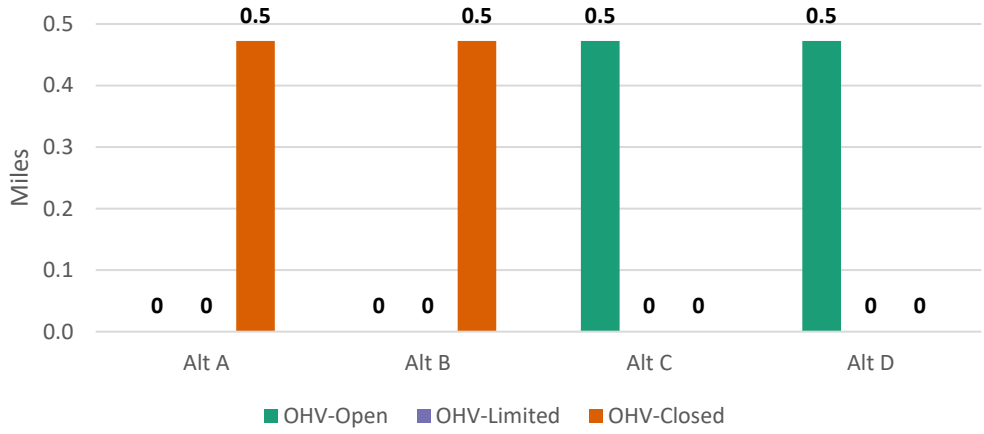


Figure 3-4: Miles of Evaluated Routes in the Mexican Mountain Natural Area

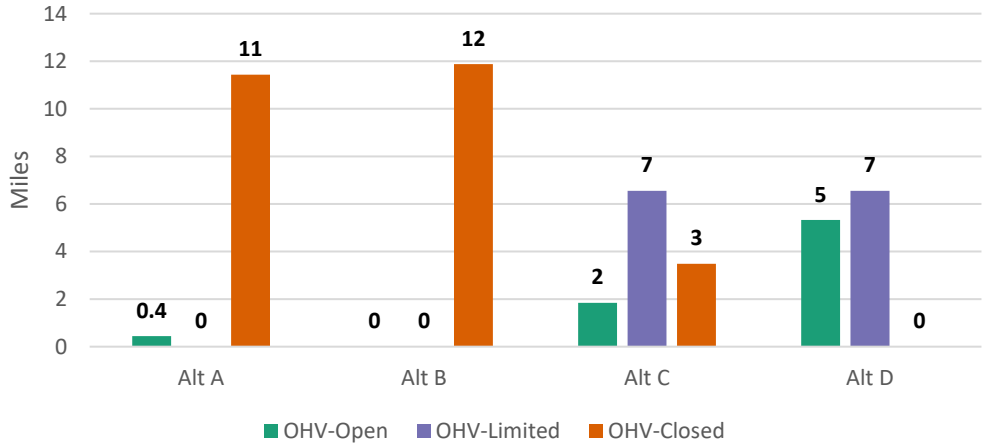


Figure 3-5: Miles of Evaluated Routes in the Muddy Creek-Crack Canyon Natural Area

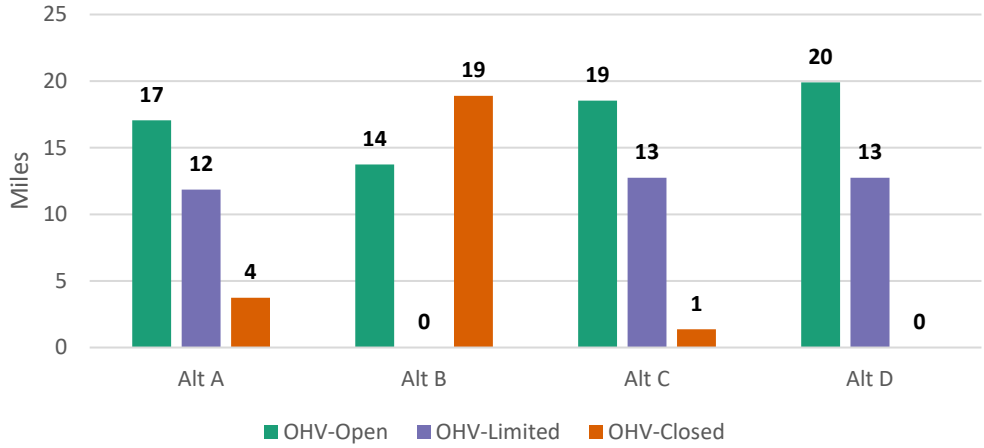


Table 3-9: Miles of Evaluated Primitive Routes in BLM Natural Areas

		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)
Hondu Country Natural Area	OHV-Open	0.1	-	-0.1	0.3	+0.2	1	+1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	1	1	+0.1	0.9	-0.2	-	-1
Jones Bench Natural Area	OHV-Open	-	-	-	0.5	+0.5	0.5	+0.5
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	0.5	0.5	-	-	-0.5	-	-0.5
Mexican Mountain Natural Area	OHV-Open	0.4	-	-0.4	2	+1	5	+5
	OHV-Limited	-	-	-	7	+7	7	+7
	OHV-Closed	11	12	+0.4	3	-8	-	-11
Muddy Creek-Crack Canyon Natural Area	OHV-Open	17	14	-3	19	+1	20	+3
	OHV-Limited	12	-	-12	13	+1	13	+1
	OHV-Closed	4	19	+15	1	-2	-	-4

Alternative A (No Action)

Under Alternative A, there would be no route designation changes in the TMA; 91 miles of evaluated routes in LWC units would remain designated for OHV use and 150 miles would remain closed to OHV use. Concerning BLM natural areas, OHV use would continue to be available on designated routes. In the Hondu Country Natural Area, 9% (0.1 miles) of the evaluated primitive routes would remain available for OHV; in the Jones Bench Natural Area, all 0.5 miles are closed; in the Mexican Mountain Natural Area, 4% (0.4 miles) of evaluated primitive routes are designated for OHV use; and in the Muddy Creek-Crack Canyon Natural Area, 88% (29 miles) of the evaluated primitive routes would remain available for OHV use. Under this alternative, impacts to naturalness and outstanding opportunities for solitude and primitive and unconfined recreation within LWC units and BLM natural areas would reflect a continuation of current designations.

Alternative B (Resource Protection Emphasis)

Alternative B would designate a total of 25 miles of routes for OHV use within LWC units in the TMA; fourteen of the LWC units would have no designated OHV routes. Please reference Figure 3-1 and Table 3-8 to identify the difference in magnitude of Alternative B. The routes within LWC units proposed for OHV use under this alternative include 12 miles limited to Class 1 e-bikes in Sids Mountain LWC and 13 miles designated as OHV-Open in Mexican Mountain LWC; these routes are now managed as Wilderness Boundary roads, or they are short parking spurs off of the maintained road. The IDT has determined that these routes would not cause damage to the wilderness characteristics in these units and that they serve a critical purpose and need for connectivity or recreation experience. Overall, Alternative B's potential for OHV use-related impacts to wilderness characteristics in LWC units would be lower than each of the other alternatives.

Alternative B would designate a total of 14 miles in the Muddy Creek-Crack Canyon Natural Area. This alternative would not designated any routes for OHV use in the Hondu Country, Jones Bench, or Mexican Mountain natural areas. Please reference Figure 3-2 through Figure 3-5 and Table 3-9 to identify the difference in magnitude of Alternative B. The routes within the Muddy Creek-Crack Canyon Natural Area proposed for OHV-Open in this alternative are all routes currently managed as Wilderness Boundary

Roads. Alternative B only proposes to designate for OHV use evaluated routes that meet the criteria of a Wilderness Inventory Road. Within BLM natural areas, Alternative B would not designate any evaluated primitive routes as available for OHV use; the IDT has determined that these routes would not cause damage to the wilderness characteristics in these units, and that they serve a critical purpose and need for connectivity or recreation experience. Overall, Alternative B's potential for OHV use-related impacts to wilderness characteristics in BLM natural areas would be lower than each of the other alternatives. Negative impacts to the wilderness characteristics of these BLM natural areas from OHV use is not expected. The BLM has documented visually apparent unauthorized surface disturbances off routes as well as visually apparent damage to public lands resources caused by motorized vehicle use within BLM natural areas in the San Rafael Swell Travel Management Plan – Baseline Monitoring Report. During the baseline monitoring, only a few routes being considered as open to OHV use in Alternative B were documented as having impacts from off route travel. This damage has been assessed and a reclamation plan is currently being developed with implementation planned in 2025. Although the PFO has experienced fluctuations in visitation FO-wide, based on professional judgement and review of the BLM recreation visitation reporting database, the BLM believes that the character and use of the routes proposed to be designated OHV-Open and OHV-Limited under this alternative have not significantly changed since they were inventoried and that continued use of the routes will be consistent with protecting, preserving, and maintaining wilderness characteristics.

Alternative C (Multiple Use Emphasis)

Alternative C would reduce designated route milage in 7 LWC units and increase designated route mileage in 10 LWC units. It would designate a total of 105 miles of evaluated routes for OHV use within LWC units in the TMA. The largest increases in miles of routes designated for OHV use in LWC units would be in Mexican Mountain LWC (+11 miles), Price River LWC (+6 miles), Muddy Creek-Crack Canyon LWC (+5 miles), Sids Mountain LWC (+4 miles), and San Rafael Reef LWC (+3 miles). The largest decreases in miles of routes designated for OHV use in LWC units would be in Never Sweat Wash LWC (-6 miles), Limestone Cliffs LWC (-5 miles), and Limestone Cliffs Ext LWC (-2 miles). Please reference Figure 3-1 and Table 3-8 to identify the difference in magnitude of Alternative C.

Alternative C would increase the miles of primitive routes and wilderness inventoried roads designated for OHV use in each of the BLM Natural Areas, including +0.2 miles in the Hondu Country Natural Area: +0.5 miles in the Jones Bench Natural Area, +8 miles in the Mexican Mountain Natural Area, and +2 miles in the Muddy Creek-Crack Canyon Natural Area. Please reference Figure 3-2 through Figure 3-5 and Table 3-9 to identify the difference in magnitude of Alternative C for each BLM natural area.

Alternative D (Access Emphasis)

Alternative D would reduce the designated route milage in 3 LWC units and increase designated route mileage in 14 LWC units. The largest increases in miles of routes designated for OHV use in LWC units would be in the Mexican Mountain LWC (+24 miles), Muddy Creek-Crack Canyon LWC (+24 miles), Devils Canyon LWC (+19 miles), San Rafael Reef LWC (+18 miles), Upper Muddy Creek LWC (+16 miles), Mussentuchit Badland LWC (+10 miles), and Price River LWC (+10 miles). Alternative D would see a reduction in miles of routes designated for OHV use in the Limestone Cliffs LWC unit (-1 mile), the Jones Bench LWC unit (-0.5 miles), and the Limestone Cliffs Extension LWC unit (-0.4 miles). Please reference Figure 3-1 and Table 3-8 to identify the difference in magnitude of Alternative D.

Alternative D would increase the miles of primitive routes and wilderness inventoried roads designated for OHV use in each of the BLM Natural Areas, including +1 mile in the Hondu Country Natural Area, +0.5 miles in the Jones Bench Natural Area, +11 miles in the Mexican Mountain Natural Area, and +4 miles in the Muddy Creek-Crack Canyon Natural Area. Please reference Figure 3-2 through Figure 3-5 and Table 3-9 to identify the difference in magnitude of Alternative C for each BLM natural area.

Cumulative Effects

The analysis area is the LWC unit and BLM natural area boundaries overlapping the travel management area, including portions of those BLM natural areas extending beyond the TMA. The wilderness characteristics of these LWC units and BLM natural areas are generally not affected by activities outside their boundaries. Most of the past, present, and reasonably foreseeable actions, plans, or projects in the TMA are outside of the cumulative impact analysis area and therefore do not contribute to impacts in the LWC units or BLM natural areas.

The TMA's LWC units and BLM natural areas were inventoried and determined to possess wilderness characteristics despite the existence, use, and maintenance of existing travel routes. Ongoing OHV activities may degrade wilderness characteristics through impacts to naturalness, outstanding opportunities for solitude or primitive recreation, and supplemental values. Fugitive dust and noise from OHV travel along existing routes within LWC units and BLM natural areas may have affected experiences for those seeking outstanding primitive recreation and solitude. Other accumulating impacts to LWC units and BLM natural areas are detailed in Section 3.1. The surface disturbances and sights and sounds of other visitors from these activities will have similar impacts to wilderness characteristics such as naturalness, outstanding solitude or primitive, unconfined recreation, and supplemental values as previously described for OHV use within the TMA.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV use would be a continuation of current conditions, and an overall incremental change to LWC units, BLM natural areas and their wilderness characteristics within the analysis area is not anticipated.

Overall, Alternative B would result in the most reduction of OHV impacts to LWC units and BLM natural areas because of the closure of 248 miles of evaluated routes in these units. Alternative B allows continued OHV use of several routes within BLM natural areas. However, it should be noted these routes were present at the time the BLM natural areas were inventoried, and it was determined at that time that the presence of these routes did not impact the wilderness character, and current IDT members still believe that determination is appropriate. The routes proposed as designated for OHV use in Alternative B currently serve as wilderness boundary roads and are not new impacts on the ground. When the LWC units and natural areas that are now managed as designated wilderness, or now border wilderness are re-inventoried, their boundaries would be adjusted to match the wilderness boundaries. If the LWC units are contiguous with wilderness their boundaries will adjoin; if the LWC units are not contiguous with wilderness, they will follow the same boundary roads as the wilderness unit, so the wilderness and LWC boundaries will not overlap one another. None of the routes proposed to be open to OHV use in Alternative B would bisect any LWC unit and risk that unit no longer meeting size criteria. If the routes proposed to be OHV-Open or OHV-Limited do not serve as wilderness boundaries they serve as critical access to popular points of interest, such as Cottonwood Wash and Dylan Wall, and provide parking areas that would be signed and formalized to reduce off-route travel. If this alternative is selected, it would not change the current LWC inventories as closing/opening routes would not immediately change the landscape, because the routes already exist. However, over time, future use, maintenance, and natural reclamation could lead to updated LWC inventories producing different results either adding or reducing the amount of acreage. This Alternative would minimize impacts to wilderness characteristics as it does close 33 miles of evaluated routes within BLM natural areas, and it also closes 215 miles of evaluated routes within LWC units.

Overall, Alternative C would result in slightly more miles of routes designated for OHV use in LWC units and BLM natural areas. In some units such as Block Mountain, Jones Bench, Limestone Cliffs, Limestone Cliffs Extension, Lost Springs Wash, Never Sweat Wash, and Rock Canyon, there would be a reduction in miles available for OHV use. The remaining units would see an increase in mileage designated for OHV use. All units were found to contain wilderness characteristics despite the existence of these inventoried routes. No new construction of routes or surface disturbing activities are proposed,

just the designation and maintenance of these existing routes. If this alternative is selected, it would not change the current LWC inventories, as closing/opening a route would not immediately change the landscape. However, over time future use and maintenance could lead to updated LWC inventories producing different results either creating more or reducing the amount of acreage. This alternative would minimize impacts to wilderness characteristics as it would close 5 miles of evaluated routes within BLM natural areas, and it also closes 135 miles of evaluated routes within LWC units.

Overall, Alternative D would result in the most miles of routes designated for OHV use in LWC units and BLM natural areas. All units were found to contain wilderness characteristics despite the existence of the majority of these primitive routes. No new construction of routes or surface disturbing activities are proposed, just the designation and maintenance of the primitive routes. If this alternative is selected, it would not change the current LWC inventories, as closing/opening a route would not immediately change the landscape. However, over time future use and maintenance could lead to updated LWC inventories producing different results either creating more or reducing the amount of acreage. This alternative would minimize impacts to wilderness characteristics as it would close 9 miles of evaluated routes within LWC units.

All action alternatives include operation and management activities as disclosed in the TMP Implementation Guide (Appendix H), with formal guidance for signing, reclamation, and adaptive management protocols that are designed to offset ongoing route-related impacts to BLM natural areas and LWC units. Per 43 CFR § 8342.1, each alternative would not adversely affect the natural, aesthetic, scenic, or other values for which the natural areas were established.

3.3.3 NATIVE VEGETATION

Issue 3: How would the travel network alternatives impact native vegetation communities?

The analysis area for native vegetation is the TMA, because it is the smallest unit which shows all impacts to native vegetation within the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural and ecological resources. For analysis of potential impacts to special status plants, see Section 3.3.6.

3.3.3.1 Affected Environment

Evaluators used a vegetation type dataset as well as specialist knowledge of the area to identify route-specific vegetation resource issues during the route evaluation process. Therefore, vegetation impacts are estimated using miles of routes as a comparison across alternatives. The BLM considered using the number of routes for this analysis to improve comparability with the soils and weeds section. However, the miles of routes within a vegetation type seemed to best describe the effects. See Table 2-1 for the total mileage of route designations under each alternative. Map 4 in the 2008 Price RMP (BLM 2008e) and Map 3-03 in the 2008 Richfield Proposed RMP/EIS (BLM 2008f) show vegetation cover types for the PFO and RFO areas and depict the TMA as having primarily pinyon-juniper, sagebrush, and desert brush cover types. Table 3-10, below, shows the primary vegetation cover types and the miles of evaluated routes within each in the TMA.

Table 3-10: Primary Biomes within the TMA

Biome	BLM Acres	Miles of Evaluated Routes Within the Biome	Description [18]
Inter-Mountain Basins Mixed Salt Desert Scrub	470,477	925	Includes open-canopied shrublands of basins, alluvial slopes, and plains. Vegetation is characterized by open to moderately dense shrubland composed of *Atriplex* species. The herbaceous layer may be sparse or moderately dense, dominated by perennial graminoids. Forbs are also present.
Barren—Rock / Sand / Clay	190,616	211	Typically has less than one percent vegetative cover. If vegetation is present, it is widely spaced. The surface is sand, rock, exposed subsoil, or salt-affected soils. Subcategories include salt flats; sand dunes; mud flats; beaches; bare exposed rock; quarries, strip mines, gravel pits, and borrow pits; river wash; oil wasteland; mixed barren lands; and other barren land.
Colorado Plateau Pinyon-Juniper Woodland	116,478	136	Occur on warm, dry areas of mountain slopes, mesas, plateaus, and ridges. Soils supporting this vegetation type vary from stony, cobbly, gravelly sandy loams to clay loam or clay. Understory layers vary and may be dominated by shrubs, graminoids, or be absent.
Inter-Mountain Basins Big Sagebrush Shrubland	198,972	397	Typically occurs in broad basins between mountain ranges, plains, and foothills. Soils are deep, well-drained, and non-saline. Dominated by *Artemisia tridentata ssp. tridentata*. Perennial herbaceous components contribute less than 25% vegetative cover.

OHV-Closed designations protect native vegetation. OHV-Open or OHV-Limited designations perpetuate effects to native vegetation. Route use and surface disturbances from off-route vehicle travel (e.g., passing or parking, particularly along minimally maintained routes, which tend to be narrower) can crush plants, compact the soil the plants grow in, and contaminate the soil. Travel network implementation activities that may cause vegetation loss include installing new signs, road maintenance consistent with the character and class of the route, and route reclamation.

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). 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 et al. 2019). Overall, habitat alteration, fragmentation, and deterioration lead to competition for water, space, and nutrients, which results in decreased reproductive success for native vegetation.

Cumulative actions found in the analysis area are listed in Section 3.2. All cumulative actions have the potential to crush, dust, or damage native vegetation, introduce or spread weeds that would compete with the native vegetation, and some actions include surface disturbance which would remove native vegetation.

[18] Source: NSE 2024

3.3.3.2 Environmental Effects Analysis

The following assumptions and methodologies were applied in this analysis of potential effects on native vegetation from the alternative designations:

- Routes identified in the analysis are within the vegetation type.
- OHV-Closed designations would eliminate OHV effects to native vegetation from those routes.
- Maintenance under this TMP will be appropriate to the class of road to ensure navigability for designated routes without changing the character, function, or recreation experience the route provides.

Miles of routes in the TMA's primary vegetation communities are used as indicators of potential OHV route designation impacts (see Figure 3-6 through Figure 3-9). The nature of the effects will be the same across alternatives, however the magnitude and location of the routes will vary. The magnitude can be judged using Figure 3-6 through Figure 3-9 and Table 3-11. The location of the effects can be judged using Map 2 through Map 5. OHV use of travel routes can remove crush or dust native vegetation. TMP implementation activities that could remove, crush, or dust native vegetation include route maintenance (e.g., surface and ditch blading.), reclamation (e.g., raking), and sign placement (e.g., digging post holes). These effects would occur in very short time frames (estimated to be one to four days' worth of work, though it may be longer for longer routes). TMP implementation activities that could reduce native vegetation crushing and dusting include sign placement directing OHVs to routes that are less disruptive to native vegetation. These effects would occur over longer timeframes.

Figure 3-6: Miles of Evaluated Routes in Inter-Mountain Basins Salt Desert Scrub

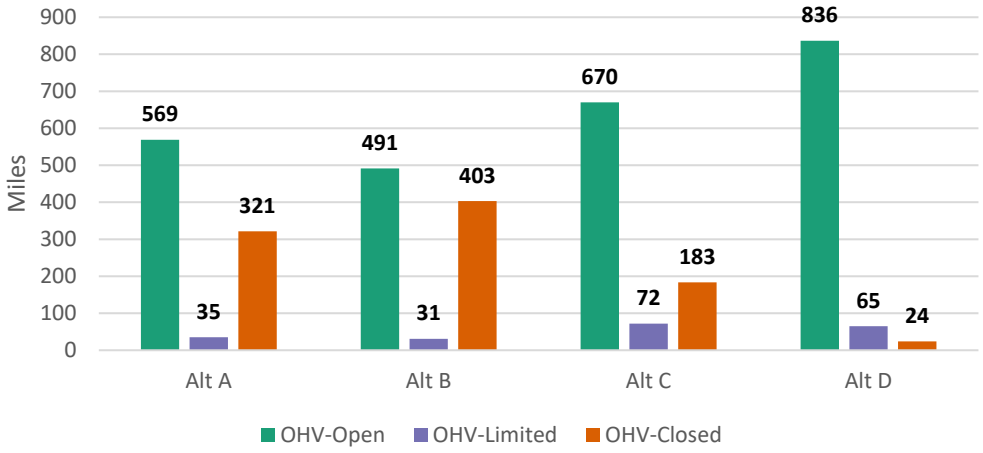


Figure 3-7: Miles of Evaluated Routes in Barren Rock/Sand/Clay

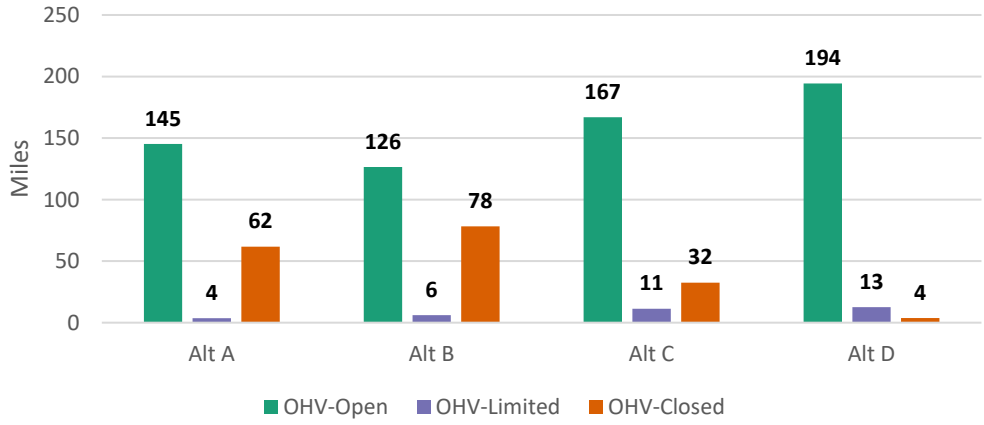


Figure 3-8: Miles of Evaluated Routes in Colorado Plateau Pinyon-Juniper Woodland

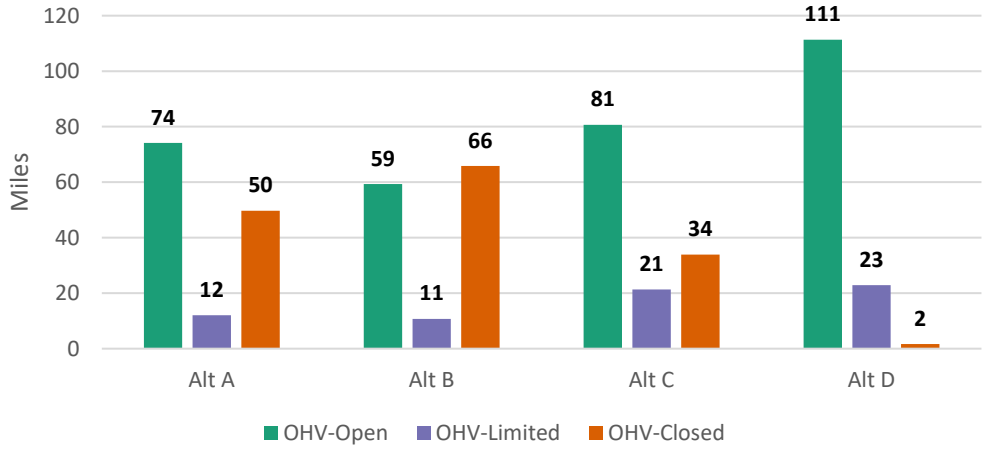


Figure 3-9: Miles of Evaluated Routes in Inter-Mountain Basins Big Sagebrush Shrubland

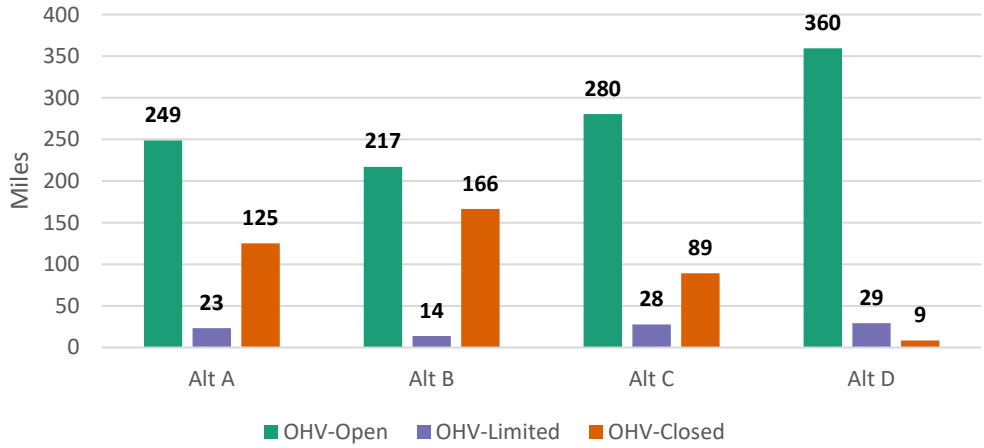


Table 3-11: Miles of Evaluated Routes in Primary Native Vegetation Communities

		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)
Inter-Mountain Basins Mixed Salt Desert Scrub	OHV-Open	569	491	-78	670	+101	836	+268
	OHV-Limited	35	31	-4	72	+37	65	+30
	OHV-Closed	321	403	+82	183	-138	24	-297
Barren-Rock/Sand/Clay	OHV-Open	145	126	-19	167	+22	194	+49
	OHV-Limited	4	6	+2	11	+8	13	+9
	OHV-Closed	62	78	+16	32	-29	4	-58
Colorado Plateau Pinyon-Juniper Woodland	OHV-Open	74	59	-15	81	+7	111	+37
	OHV-Limited	12	11	-1	21	+9	23	+11
	OHV-Closed	50	66	+16	34	-16	2	-48
Inter-Mountain Basins Big Sagebrush Shrubland	OHV-Open	249	217	-32	280	+32	360	+111
	OHV-Limited	23	14	-9	28	+4	29	+6
	OHV-Closed	125	166	+41	89	-36	9	-117

Alternative A (No Action)

Under Alternative A, there would be no route designation changes in the TMA. Of the evaluated routes in Inter-Mountain Basins Mixed Salt Desert Scrub vegetation communities, 65% (604 miles) would remain designated for OHV use. In Barren—Rock/Sand/Clay areas, 71% (149 miles) of the evaluated routes would remain designated for OHV use. In Colorado Plateau Pinyon-Juniper Woodlands, 63% (86 miles) of the evaluated routes would remain designated for OHV use. In Inter-Mountain Basins Big Sagebrush Shrublands communities, 69% (272 miles) of the evaluated routes would remain designated for OHV use. In the TMA's primary vegetation communities Alternative A would extend the potential for OHV use-related impacts such as crushing and dusting plants. Impacts to native vegetation from ongoing OHV use (e.g., vegetation damage or loss, etc.) would reflect continuation of current designations.

Alternative B (Resource Protection Emphasis)

Alternative B would reduce miles of evaluated routes designated for OHV use, including a 25% (82-mile) reduction in Inter-Mountain Basins Mixed Salt Desert Scrub, an 11% (16-mile) reduction in Barren—Rock/Sand/Clay, a 19% (16-mile) reduction in Colorado Plateau Pinyon-Juniper Woodland, and a 15% (41-mile) reduction in Inter-Mountain Basins Big Sagebrush Shrubland. Under Alternative B, the same types of effects on native vegetation from OHV use noted above would be expected to occur on those routes designated OHV-Open or OHV-Limited; however, this alternative would have the overall lowest potential of any alternative for OHV-related impacts on native vegetation.

Alternative C (Multiple Use Emphasis)

In each of the TMA's primary vegetation communities, Alternative C would increase miles of evaluated routes designated for OHV use, including a 23% (138-mile) increase in Inter-Mountain Basins Mixed Salt Desert Scrub, a 19% (29-mile) increase in Barren—Rock/Sand/Clay, a 19% (16-mile) increase in Colorado Plateau Pinyon-Juniper Woodland, and a 13% (36-mile) increase in Inter-Mountain Basins Big Sagebrush Shrubland. Under Alternative C, the same types of effects on native vegetation from OHV use noted above would be expected to occur on those routes designated OHV-Open or OHV-Limited.

Overall, this alternative would have higher potential than Alternatives A and B but lower potential than Alternative D for OHV-related impacts on native vegetation.

Alternative D (Access Emphasis)

In each of the TMA's primary vegetation communities, Alternative D would increase miles of evaluated routes designated for OHV use, including a 49% (297-mile) increase in Inter-Mountain Basins Mixed Salt Desert Scrub, a 39% (58-mile) increase in Barren—Rock/Sand/Clay, a 56% (48-mile) increase in Colorado Plateau Pinyon-Juniper Woodland, and a 43% (117-mile) increase in Inter-Mountain Basins Big Sagebrush Shrubland. Under Alternative D, the same types of effects on native vegetation from OHV use noted above would be expected to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative would have the highest potential of any alternative for OHV-related impacts on native vegetation.

Cumulative Effects

Cumulative effects from past, present, and reasonably foreseeable projects and activities on native vegetation includes soil compaction, vegetation removal, crushing, or dusting as described in the affected environment.

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

Alternatives B-D would add route-related impacts where routes are newly designated for OHV use (OHV-Open or OHV-Limited).

3.3.4 RECREATION

Issue 4: How would the travel network alternatives impact OHV recreation opportunities and experiences in Emery, Sevier, and Grand counties?

The OHV-recreation analysis area is all BLM-managed routes within the three counties which are affected by this plan and the Labyrinth/Gemini Bridges TMP, Canyon Rims (Indian Creek) TMP and San Rafael Desert TMP: Sevier County, Emery County, and Grand County. This analysis area was chosen because the recent OHV route designation changes in these areas accumulate with the San Rafael Swell TMP alternatives to define the route networks available for motorized use, which also affects the motorized experience. The temporal scope of analysis is 20 years (see Section 3.1.1).

Issue 5: How would the travel network alternatives impact nonmotorized recreation access and experiences in the TMA?

The analysis area for nonmotorized recreation was the TMA because the distances covered by nonmotorized recreation are small and the TMA covers the unique recreational setting, opportunities, experiences, and demands offered by the San Rafael Swell. The analysis timeframe is 20 years.

Please refer to Appendix D for additional recreation resource considerations.

3.3.4.1 Affected Environment

The 2,161 miles of evaluated routes in the TMA largely originated from mining, ranching, and recreation-related activities. Extrapolating from traffic counters, the BLM estimates there were 372,000 recreation visits in the TMA in 2023.

To better consider the potential impacts of the alternative networks on recreation within the TMA, the BLM grouped all evaluated routes into 22 travel network geographic areas based on recreation

destinations (see Map 7), desired recreation experiences, and/or network connectivity. The route network geographic areas are described in detail in Appendix C and are shown in Map 7 and Table 3-12. That table also provides an overview of each route network geographic area's visitation and notes if it is located in an ERMA, SRMA, or RMZ, as these locations ultimately guide their management objectives.

Table 3-12: Route Network Geographic Areas

Route Network Geographic Area Name	SRMA/ERMA/San Rafael Swell Recreation Area within Route Network Geographic Areas.	Miles of Route in Current Network (Alt A Open/Ltd.)	2023 Visitors (Number of Vehicle Counters)[1]
Behind the Reef	Temple Mountain RMZ, San Rafael Swell Recreation Area	91	18,910 (2)
Black Dragon/Mexican Mountain	Buckhorn/Wedge RMZ, SRMA, San Rafael Swell Recreation Area	54	16,673 (1)
Box Flat/Big Hole	SRMA, San Rafael Swell Recreation Area	37	No data
Buckhorn/Wedge	Buckhorn/Wedge RMZ, San Rafael Swell Recreation Area	80	72,754 (3)
Buckmaster/Tidwell Draw	SRMA, San Rafael Swell Recreation Area	43	2,799 (1)
Cliff Dwellers/Home Base	SRMA, San Rafael Swell Recreation Area	25	No data
Coal Cliffs	SRMA	47	No data
Copper Globe/Lone Tree	Sinbad/Swaseys Cabin/Sids Mountain RMZ, SRMA, ERMA, San Rafael Swell Recreation Area	94	5,697 (1)
Cow Flats/Cedar Mountain	SRMA, ERMA	17	Share w/ North Jurassic
Fremont Junction	ERMA	38	No data
Front of the Reef	SRMA, San Rafael Swell Recreation Area	51	8,020 (1)
Grassy Trails	ERMA	14	No data
Humbug/Chimney Rock	ERMA	108	2022 data: 2,089 (1)
Limestone Cliffs	ERMA	39	No data
Moore Cutoff/Dutch Flats	SRMA	48	April 2023-March 2024: 11,282 (1)
Mounds	ERMA	39	No data
Mussentuchit/Last Chance	SRMA, ERMA, San Rafael Swell Recreation Area	83	3,970 (1)
North Jurassic/Flat Top	ERMA; Cleveland-Lloyd SRMA	49	8,359 (1)
Sids Mountain/Wikiup	Sinbad-Swaseyes Cabin-Sids Mountain RMZ, San Rafael Swell Recreation Area	132	48,916 (4)
Surrounding Goblin Valley	Temple Mountain RMZ, San Rafael Swell Recreation Area	29	49,600 (1)
Swaseys Cabin/Reds Canyon	Sinbad-Swaseyes Cabin-Sids Mountain RMZ, San Rafael Swell Recreation Area	111	8,143 (1)
Temple Mountain	Temple Mountain RMZ/SRMA, San Rafael Swell Recreation Area	60	34,844 (3)
Total		1289	292,000

[1] BLM placed more than 40 vehicle counters to gather this data. Placement was chosen based on road conditions, visitor impacts, and amount of visitation. The BLM's confidence in the visitor use estimates are high where there are one or few access roads, and low where there are many access roads. Therefore, BLM's confidence in the visitor use estimates for Wedge/Buckhorn is high, for Mussentuchit/Last Chance and Surrounding Goblin Valley is high, for Jurassic/Flat Top, Cow Flats/Cedar Mountain, and Sids Mountain/Wickiup is moderate, and for Swaseys Cabin/Red Canyon, Humbug/Chimney Rock, Buckmaster/Tidwell Draw, Copper Globe/Lone Tree, and Front of the Reef is low.

San Rafael Swell Special Recreation Management Area

The 938,500-acre San Rafael SRMA lies almost entirely within the TMA and comprises the majority of its acreage. Thirteen of the PFO's route network geographic areas entirely overlap, and three partially overlap, the SRMA or its RMZs (see Table 3-13 and Map 9). Approximately 1,674 miles of evaluated routes are in the SRMA. Extrapolating from traffic counters, the BLM estimates 335,000 (90%) of recreation visits to the TMA in 2023 were in the SRMA.

Within the SRMA, the 2008 Price RMP identified three Recreation Management Zones (RMZs) where recreation opportunities associated with scenic overlooks, natural features, and historic and cultural sites have resulted in high visitation and unique management priorities and needs for decades. In total, the BLM estimates that 64% of recreation visits in the TMA were to these three RMZs and are concentrated on 23% of evaluated routes (see Table 3-13). Route designations in the RMZs would have proportionately high visitor impacts and therefore could meaningfully affect all elements of the recreation setting (discussed later in this section). Route designations outside the RMZs would have proportionately low visitor impacts and therefore impacts to the recreation setting would be largely physical. Route limitations may attain RMP objectives of reducing user conflict in the RMZs where there is also a high density of users.

From site-specific vehicle counters, the BLM estimates that the five most popular recreation opportunities within the RMZs (Wedge Overlook, Buckhorn Draw, Whild Horse Road, Temple Wash/Temple Mountain, and Little Wild Horse Canyon) account for 41.5% of recreation visits to the TMA. Based on this prominent concentration of recreational use, even though the alternatives would change the route networks available for motorized recreation opportunities, they would not meaningfully change visitation to these popular areas nor would they result in visitor use being distributed differently across the TMA. The alternative route networks' greatest potential impacts to visitor use patterns in these popular recreation areas are to dispersed camping, which are discussed as relevant in each alternative's analysis.

Table 3-13: RMZ Visitation in the San Rafael Swell SRMA

Name	Primary Recreation [Most Popular Recreation Opportunities (% Recreation Visits)]	Miles of Evaluated Routes (% of TMA Evaluated Route Mileage)	2023 Visits (% of TMA Visits)
Buckhorn/Wedge	Sightseeing, cultural/historic site viewing, dispersed and developed camping, hiking, rock climbing, horseback riding. [Wedge Overlook camping and sightseeing (12%) Buckhorn Draw and along Mexican Mountain Road camping, hiking, cultural/historic site viewing, and vehicle touring (12%)]	85 (4%)	90,000 (24%)
Sinbad/Swaseys Cabin/Sids Mountain[1]	OHV touring (including many trails that have come area destinations due to advertising in guidebooks and online communities), dispersed camping, hiking/backpacking, horseback riding, historic/cultural site viewing	270 (13%)	61,000 (16%)
Temple Mountain	Dispersed and developed camping, OHV touring (including several destination trails), cultural/historic site viewing, hiking, canyoneering, rock climbing, horseback riding, sightseeing [Wild Horse Road dispersed camping[19], hiking and sightseeing (8%) Temple Wash/Temple Mountain camping,	125 (6%)	90,400 (24%)

[19] The dispersed camping area is now part of Goblin Valley State Park as directed by the Dingell Act Goblin Valley Conveyance (Section 1251).

Name	Primary Recreation [Most Popular Recreation Opportunities (% Recreation Visits)]	Miles of Evaluated Routes (% of TMA Evaluated Route Mileage)	2023 Visits (% of TMA Visits)
	sightseeing, off-roading, and cultural/historic site viewing (6%) Little Wild Horse Canyon hiking (3.5%)]		
[1] The routes most frequently cited in the scoping comments are within the Sinbad/Swaseys Cabin/Sids Mountain RMZ. These routes are open in all alternatives.			

San Rafael Swell Recreation Area

The 217,000-acre San Rafael Swell Recreation Area overlaps almost entirely the TMA, overlaps wholly the San Rafael Swell SRMA, and overlaps portions of the RMZs including the five most popular recreation opportunities. Ten of the PFO's route network geographic areas overlap the Recreation Area (see Table 3-12, Map 7, and Map 10). Approximately 616 miles of evaluated routes are in the Recreation Area. Extrapolating from traffic counters, the BLM estimates 286,400 (77%) recreation visits to the TMA in 2023 were in the Recreation Area.

Cleveland-Lloyd Dinosaur Quarry Special Recreation Management Area

The 800-acre Cleveland-Lloyd Dinosaur Quarry SRMA lies entirely within the TMA. One of the PFO's route network geographic areas overlaps the SRMA (see Table 3-12 and Map 7). This SRMA contains the Jurassic National Monument (see Map 10), the Cleveland-Lloyd Dinosaur Quarry, and their Visitor Center. Approximately 10 miles of evaluated routes are within the SRMA. Extrapolating visitor use data from the Jurassic National Monument and one traffic counter in the area, the BLM estimates 6,360 (2%) of recreation visits to the TMA in 2023 were in the SRMA. Visitor distribution is not likely to change across the SRMA under the various alternatives because of the proportionally high concentration of visitor use at the Quarry's and Monument's Visitor Center, and the unique recreation opportunities within them.

Extensive Recreation Management Areas

Per both 2008 RMPs, portions of each field office which are not part of a SRMA (Map 9) are part of an Extensive Recreation Management Area (ERMA). Both RFO's route network geographic areas overlap the RFO ERMA. Three of PFO's route network geographic areas entirely overlap, and four partially overlap, the PFO ERMA (see Table 3-12 and Map 7). Approximately 477 miles of evaluated routes are in the ERMA. Extrapolating from traffic counters, the BLM estimates 30,640 (8%) recreation visits to the TMA specifically targeting the ERMA in 2023. It is also important to note that every visitor to the TMA that accesses the SRMAs has to also visit and travel through the ERMA.

Special Recreation Permits

The BLM administers 82 active SRPs within the TMA for a range of commercial activities and events. Twenty-two of these are for vehicle-based tours, activities, and events (including photography workshops, educational tours, dirt bike instruction, and OHV gatherings). Seventeen are for hunting and allow use of all designated routes. The remaining 43 are for nonmotorized activities including mountain biking, gravel biking/bikepacking, wilderness therapy, canyoneering, rock climbing, and backpacking. The remaining 43 also account for the greatest share of reported SRP use (over 80%).

OHV Recreation

As summarized in the Cumulative Impacts Scenario (Section 3.2), OHV recreation opportunities in the TMA are largely dispersed. The 2,161 miles of evaluated routes in the TMA are associated with many dispersed trailheads, campsites, camping areas, and staging areas (see the route reports). The BLM has managed the dispersed trailheads, campsites, camping areas and staging areas as needed to protect resources and user safety. Developed recreation opportunities associated with the evaluated routes include four fee campgrounds and several signed staging areas.

Popular OHV or OHV-adjacent recreation opportunities for which the BLM manages and monitors are: driving for pleasure and sightseeing, wildlife viewing, OHV trail riding (on four-wheel drive routes), developed and dispersed camping, cultural site viewing and heritage tourism, hunting[20], and mountain and gravel biking[21]. Other activities which are facilitated by motorized recreation include geocaching, Christmas tree cutting, and pine nut harvesting. These purposes were noted for each route during route evaluations (see the route reports). The geographic extent of a route network and the density of routes within a network has the potential to provide recreational benefits through recreational riding or access to other activities.

Scoping comments for this plan frequently referenced family togetherness across generations, dispersed camping access, and the need for accessibility in motor vehicle use.

OHV literature indicates that user conflict occurs within the OHV group both between and within sub-groups (motorcycles, ATVs/UTVs, and full-sized vehicles). ATV/UTV and motorcyclists riders view the other's behavior as somewhat problematic, albeit with a low intensity of conflict. Drivers of full-sized vehicles perceive the most conflict and experience decreased enjoyment as a result, while ATV/UTV riders generally have the highest tolerance for both fellow riders and other sub-groups (Albritton et al. 2009). Conflict within groups is highest among drivers of full-sized vehicles but still lower than inter-group conflict. Designating a route or route network limited to specific vehicle types creates a clear route network with structured management and operations.

Mountain Biking

Per the Price 2008 RMP's REC-8 decision mountain biking is allowed on all routes within the PFO which are designated for OHV use. Long-distance bicycling and bikepacking are emerging recreational uses in the Swell with gravel bikers enjoying long trips on gravel roads and mountain bikers venturing onto OHV trails such as the Behind-the-Reef trail and the trails around Coal Wash and Eagle Canyon.

Dispersed Camping

The evaluated routes provide access to dispersed camping. Under Price 2008 RMP REC-3 and Richfield 2008 RMP REC-1, dispersed camping is allowed throughout both field offices with the exception that vehicle camping in the San Rafael Swell SRMA Recreation Management Zones is only allowed in designated sites (BLM 2008e, REC-53). In an area as vast and remote as the TMA, camping is often necessary to enjoy long days of recreation. Per BLM route evaluations, approximately half of the evaluated routes access dispersed campsites at one or more places along the route's length. During high-use seasons, dispersed camping access is necessary to support the volume of recreationists in high-density

[20] While hunting is technically nonmotorized, its dispersed nature means that the geographic extent and connectivity of routes can impact hunting access and opportunities compared to trailhead-based nonmotorized activities. Per BLM research conducted in conjunction with the preparation of the trails report, backpacking-supported hiking is not a well-established recreational use to the extent that it is in many larger wilderness areas.

[21] All bikes may ride on any designated route in the PFO per REC-8 in the Price 2008 RMP.

areas. Lack thereof can result in crowding and user conflict and moves the BLM further away from targeted RMZ outcomes like escaping social pressures and providing for motorized dispersed camping.

Cumulative Actions for Motorized Recreation

Cumulative actions for motorized recreation found in the analysis area are listed in Section 3.2. These include:

- Use of travel routes resulting in dust and noise.
- Recreation resulting in user conflict between and within sub-groups.

The acres and miles of the cumulative travel management plans are summarized in Table 3-14.

Table 3-14: Southern Utah Region-Recent Travel Management Plans

Travel Management Plan	Travel Management Area (Acres)	Total Miles Analyzed	Miles Designated OHV-Open	Miles Designated OHV-Limited	Miles Designated OHV-Closed
Labyrinth/Gemini Bridges (Moab Field Office) 2023	303,994	1,127	712	98 (97.4 width, 0.6 seasonal)	317
Canyon Rims (Indian Creek) (Moab Field Office) 2021	90,995	274	226	0	46
San Rafael Desert (Price Field Office) 2018	377,609	1,180	702	66 (all width limitations)	414
Totals	**772,598 acres**	**2,581 miles**	**1,640 miles**	**164 miles**	**777 miles**

Nonmotorized Recreation

The RMP designated recreation opportunity spectrum (ROS) classes across the TMA to define the desired experience. Semi-primitive nonmotorized areas should have little or no evidence of human presence (such as the route itself, adjacent campsites, trash and noise). Primitive areas should have no evidence of human presence. Of the 1.1 million acres in the TMA, 24% are in the semi-primitive nonmotorized recreation opportunity spectrum (ROS) class and 10% are in the primitive ROS class. The geographic extent of a route network and the density of routes within a network can negatively impact nonmotorized recreation character and user experience. OHV-Open and OHV-Limited routes can have localized and transient impacts through their continued use. Evidence of motorized use also includes sign installation, camping, trail widening and braiding (to avoid travel hazards), trash dumping or accumulation, and human waste. The level of maintenance assigned to a given route could increase its prominence on the landscape if it entails a deviation from the existing condition, while reclamation would decrease evidence of a given route (see Sections H.4 and H.7 in Appendix H).

In the TMA, the BLM monitors and manages for the following popular nonmotorized recreational activities: hiking and backpacking, scenic overlook appreciation, horseback riding, rock climbing[22],

[22] The Dingell Act (Section 1232(b)) specifies that the designation of wilderness does not prohibit rock climbing nor any associated placement, use, and maintenance of fixed anchors.

technical canyoneering[23], river-running, cultural site viewing and heritage tourism, and dispersed camping. The majority of nonmotorized recreation occurs in designated wilderness. Nonmotorized use is sparse outside of the San Rafael Swell SRMA.

The BLM has identified[24] approximately 54 nonmotorized trailheads in the San Rafael Swell Recreation Area which access designated wilderness. The BLM has signed one extremely popular route (the Little Wild Horse-Bell Canyon loop) along the trail itself including maintained cairns. Only a quarter of the other trailheads are signed by the agency in a way that identifies them as either an official trail or a wilderness access point, but none are signed past the trailhead. In designated wilderness, no routes are constructed, and no backcountry recreation features (bolts, handlines, campsites, etc.) are built or maintained by the BLM.

Table 3 summarizes the nonmotorized recreation opportunities in each route network geographic area[25] common to all alternatives based on recreation infrastructure, field reports, public communications, the respective RMPs, and BLM 2021c. It also includes relative use levels and other pertinent notes based on traffic counters, on-the-ground impacts, and prevalence in guidebooks and online communities (e.g., frequency of trip reports). Access routes are not discussed because these roads are open in all alternatives. Sites with high use and greater infrastructure offer lower levels of solitude and remoteness. Sites with low use and lesser infrastructure offer higher levels of solitude and remoteness.

Table 3-15: Nonmotorized Recreation Opportunities by Route Network Geographic Area

Route Network Geographic Area	Nonmotorized Opportunities	Visitation Summary
Behind the Reef	Hiking, canyoneering, backpacking, horseback riding, seasonal river running	High use: many quality experiences with BLM trailheads and information, corresponds to Temple Mountain RMZ
Black Dragon/Mexican Mountain	Hiking, canyoneering, backpacking, horseback riding, seasonal river running, cultural site viewing[1]	High use: many quality experiences with BLM trailheads and information; Buckhorn/Wedge RMZ
Box Flat/Big Hole	Hiking, backpacking, horseback riding (typically accessed via Buckmaster/Tidwell Draw)	Low use: very remote with no facilities or trails
Buckhorn/Wedge	Hiking, backpacking, horseback riding, seasonal river running, rock climbing	Very high: many quality opportunities, Buckhorn/Wedge RMZ
Buckmaster/Tidwell Draw	Hiking, rock climbing, backpacking	Moderate: remote, no facilities
Cliff Dwellers/Home Base	Canyoneering, hiking	Low: predominantly canyoneering
Coal Cliffs	Rock climbing, cultural site viewing[1]	Climbing is very low use and primitive. Cultural site is moderate at 4,600 visitors/year[1]
Copper Globe/Lone Tree	Hiking, seasonal river running	Low: remote, no facilities; river running is typically only possible for a few weeks out of year

[23] Technical canyoneering utilizes the same types of anchors as those used in climbing, so the BLM interprets the allowance of fixed anchors by the Dingell Act (Section 1232(b)) to also include rappelling slot canyons.
[24] The Dingell Act (Section 1222(i)) required the BLM to prepare a study of nonmotorized trail opportunities, which was completed in 2021 (BLM 2021c, Attachment I).
[25] The following route network geographic areas do not have any well-established nonmotorized recreation opportunities: Mounds, Grassy Trails, Humbug/Chimney Rock, North Jurassic/Flat Top outside of Jurassic National Monument, Fremont Junction, and Limestone Cliffs.

Route Network Geographic Area	Nonmotorized Opportunities	Visitation Summary
Cow Flats/Cedar Mountain	Rock climbing (single area)	Moderate in Triassic bouldering area (~10 acres), low to none elsewhere
Front of the Reef	Hiking, canyoneering, rock climbing	High: Many diverse and quality opportunities
Moore Cutoff/Dutch Flats	Cultural site viewing[1]	Unknown: While not broadly advertised in resources, local knowledge is extensive and shared within the community.
Mussentuchit/Last Chance	Hiking, canyoneering	Low: very remote, no facilities.
Sids Mountain/Wikiup	Hiking, backpacking, horseback riding, cultural site viewing[1], canyoneering, seasonal floating	Moderate: Many diverse opportunities but user impacts are generally low.
Surrounding Goblin Valley	Hiking, horseback riding, canyoneering	Very high: several popular hikes and near state park
Swaseys Cabin/Reds Canyon	Rock climbing, hiking, cultural/historic site viewing[1]	Low to moderate: Remote, no BLM developments but user-established areas
Temple Mountain	Hiking, canyoneering, cultural/historic site viewing[1]	Moderate: Very high use area, but nearby trails are not especially frequented compared to those in the Surrounding Goblin Valley route network geographic area.
[1] Cultural/historic site viewing refer specifically to instances where there are published, well-documented sites more than a quarter-mile from the nearest road.		

Nonmotorized visitors recreate to bond with family and friends and escape social and physical pressures. Hikers place greater value on appreciation of scenery, tranquility, solitude, and opportunities to learn than motorized users, and as a result are more sensitive to crowding than OHV users are and to motorists than vice versa (Allen 2019, Kil et al. 2012, Shilling et al. 2012). In the San Rafael Swell, many of the most scenic trails are in wilderness where motorized use is not allowed, but motorized use near those trails could still negatively impact nonmotorized recreationists' experience, e.g., through the noise of vehicle engines, dust generated, loud noises at overlooks above trails, or aircraft overflights, including drones.

Intra-group crowding sensitivity increases when users are made consciously aware of another party in their user group, e.g., due to disruptive behavior, and wilderness recreationists become more sensitive to user encounters the further away they are from the trailhead (Allen 2019). Currently, inter-group conflict is not expected to exist in the TMA because (1) the number of sites where multiple forms of nonmotorized recreation occur are limited (BLM 2021c, Attachment I) and (2) non-hiker user-groups are small enough that the probability of encounters in those areas is low.

The following user group-specific nuances are also applied to this analysis:

- Traditional climbers (the style most common in the San Rafael Swell SRMA) are motivated by being in a natural wilderness setting, pursuing a wilderness experience, being in remote and quiet settings, and seeing views from high off the ground (Ansari 2008). Those along Buckhorn Draw are unlikely to be sensitive to the routine traffic in that area, as they forfeit solitude in favor of convenient access. Climbers throughout the rest of the TMA—including those in the Front of the Reef, Swaseys Cabin/Reds Canyon, and Black Dragon/Mexican Mountain route network geographic areas—are likely to have a very high level of sensitivity to crowding, motorized use, and human impacts on the landscape, observed from the ground or from their target viewpoint.
- Equestrian users value scenery, exploring nature and discovering new things, and are bothered by hearing other users and seeing off-road use or evidence thereof (Schneider et al. 2013). Unlike

other users, equestrians' conflicts are not just a social issue as they can create unsafe conditions for the rider, other members of the party, and other recreationists. In the San Rafael Swell SRMA, users have independently established a range of routes which meet these criteria, many of which are entirely or mostly in wilderness. Some routes involve riding on roads to form a loop; in all such instances, the road in question is open in all alternatives.

- While there has been very little research on canyoneers' preferences and interests, most respondents to one user group survey tended to be sensitive to environmental issues and crowding; competent in backcountry skills such as reading topographic maps; and familiar with backcountry regulations (Coalition of American Canyoneers 2015).

Cumulative Actions for Nonmotorized Recreation

Cumulative actions for nonmotorized recreation found in the analysis area are listed in Section 3.2. These include:

- Use of travel routes resulting in noise and dust.
- Recreation resulting in intra-group crowding sensitivity

3.3.4.2 Environmental Effects Analysis: Motorized Recreation

Common to All Alternatives

The TMA's most heavily used routes would remain open across alternatives (see Table 3). This includes routes in the Sids Mountain/Wickiup and Behind-the-Reef areas which are heavily used by off-roaders, the two routes linking Capitol Reef National Park to the Fish Lake National Forest, routes in all wilderness cherry-stems, and most nonmotorized trailhead access routes.

Table 3-16: Summary of Routes Common to All Alternatives;

Route Network Geographic Area	Routes Common to All Alternatives
Behind the Reef	Behind-the-Reef trail (SS4265; SS4264 is width restricted in A-C and Open in D), Little Ocean Draw Wilderness cherry-stems/boundaries: Little Wild Horse Canyon (SS4245), Horse Valley (SS4242), SS4237, and SS4238
Black Dragon/Mexican Mountain	All routes within cherry-stems into the Mexican Mountain Wilderness; SS2123 and SS2124 are currently closed but would be open in Alternatives B-D.
Buckhorn/Wedge	West Rim Road (SS3173) and SS3182, which accesses an overlook near North Salt Wash and forms the boundary of the San Rafael Swell Recreation Area Good Water Rim Trail, which is limited to e-bikes in all alternatives.
Copper Globe/Lone Tree	The Dike/Horizon Arch Muddy Creek route within the cherry stem (SS5010) Link Flats loop and Reds Canyon Overlook (SS4572-4573)
Fremont Junction	Deer Peak Loop (SS6150, SS6151)
Front of the Reef	Farnsworth/Old Woman Wash Road (SS2535), Ernie Canyon (SS2530), Eardley Canyon (SS2492),
Limestone Cliffs	Upper Cathedral Valley Rd. (SS6002), Last Chance Rd. (SS2003)
Mussentuchit/Last Chance	Lower Last Chance and Muddy Creek Wilderness Boundary Roads: SS5130, SS5389 (extended in C and D), SS5416 (Little Black Mountain Spur, accessing Capitol Reef National Park)
North Jurassic/Flat Top	Jurassic National Monument and Triassic Bouldering Area access
Sids Mountain/Wikiup	Coal Wash, the Eva Conover Trail, Cane Wash, and Devils Racetrack
Surrounding Goblin Valley	Molly's Castle Road (SS4440), SS4371 (boundary between Big Wild Horse Mesa and Middle Wild Horse Mesa wilderness areas)
Swaseys Cabin/Reds Canyon	Eagle Canyon Trail (SS4086), Upper Eagle Canyon Trail (SS4059), Family Butte Road (SS4060), George's Draw Rd (SS4006)., Earl's Draw Rd. (SS4484)
Temple Mountain	Temple Mountain loop (SS2582, SS2582, SS2588), "Color Trails" in Twin Knolls network (SS2723, 2724, 2744, motorized single-track in all alternatives)

Table 2-2 indicates impacts on motorized recreation opportunities and experiences by comparing the miles of open, limited, and closed routes under each alternative and by comparing the miles of routes

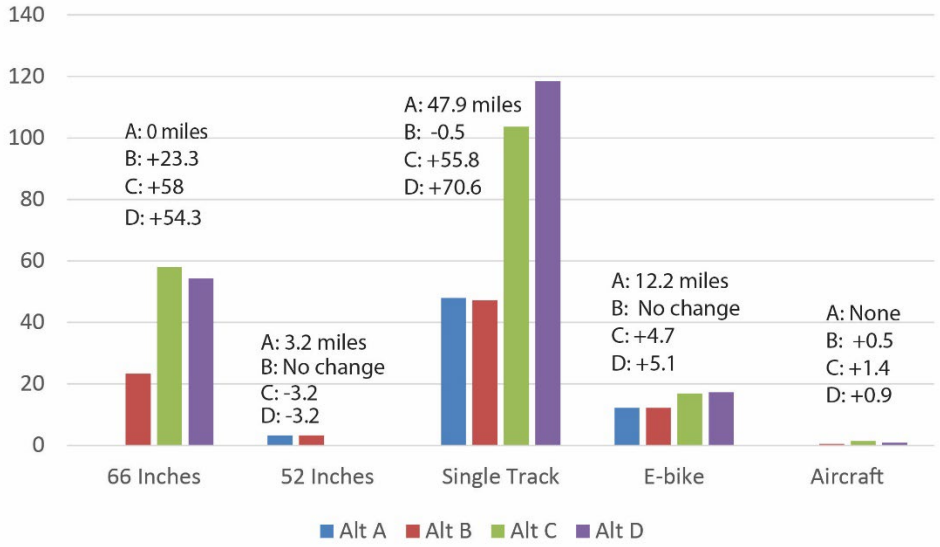
limited by vehicle type. Table 3 and Figure 3-10 indicate impacts on motorized recreation opportunities and experiences by comparing the miles of routes in each BLM-identified route network geographic area and by comparing the miles of OHV-Limited routes in each BLM-identified route network geographic area. The nature of the effects will be the same across alternatives; however, the magnitude and location of the routes will vary. The magnitude can be judged using Table 2-2, Table 3, and Figure 3-10. The location of the effects can be judged using Map 2 – Map 5.

Table 3-17: Miles of Routes by Alternative in Each Route Network Geographic Area

		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)
Behind the Reef	OHV-Open	76	73	-3	82	+6	91	+14
	OHV-Limited	15	4	-11	16	+1	13	-2
	OHV-Closed	13	28	+15	6	-7	1	-12
Black Dragon/Mexican Mountain	OHV-Open	54	56	+3	65	+12	77	+23
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	23	20	-3	11	-12	0	-23
Box Flat/Big Hole	OHV-Open	37	21	-16	37	+0	50	+13
	OHV-Limited	-	-	-	16	+16	15	+15
	OHV-Closed	29	45	+16	13	-16	2	-27
Buckhorn/Wedge	OHV-Open	68	65	-3	70	+2	77	+9
	OHV-Limited	12	12	-	17	+5	20	+8
	OHV-Closed	18	21	+3	12	-6	1	-17
Buckmaster/Tidwell Draw	OHV-Open	43	31	-12	34	-9	44	+1
	OHV-Limited	-	7	+7	11	+11	7	+7
	OHV-Closed	11	16	+5	8	-2	2	-9
Cliff Dwellers/Home Base	OHV-Open	25	24	-1	31	+6	44	+20
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	20	21	+1	14	-6	-	-20
Coal Cliffs	OHV-Open	47	28	-18	78	+31	125	+78
	OHV-Limited	-	16	+16	10	+10	2	+2
	OHV-Closed	82	85	+2	42	-41	2	-80
Copper Globe/Lone Tree	OHV-Open	94	90	-4	116	+21	166	+72
	OHV-Limited	-	-	-	2	+2	23	+23
	OHV-Closed	97	101	+4	74	-23	2	-95
Cow Flats/Cedar Mountain	OHV-Open	17	18	+2	23	+7	37	+20
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	21	19	-2	14	-7	0	-20
Fremont Junction	OHV-Open	14	15	+0	31	+16	40	+26
	OHV-Limited	24	-	-24	1	-23	-	-24
	OHV-Closed	5	29	+24	11	+7	3	-2

		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)
Front of the Reef	OHV-Open	51	37	-14	67	+16	74	+23
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	24	38	+14	9	-16	2	-23
Grassy Trails	OHV-Open	14	12	-3	27	+13	42	+28
	OHV-Limited	-	-	-	1	+1	1	+1
	OHV-Closed	29	32	+3	15	-14	0	-29
Humbug/Chimney Rock	OHV-Open	108	33	-75	68	-40	89	-19
	OHV-Limited	-	14	+14	42	+42	49	+49
	OHV-Closed	39	101	+61	37	-2	9	-30
Limestone Cliffs	OHV-Open	33	15	-18	38	+5	44	+11
	OHV-Limited	21	-	-21	-	-21	-	-21
	OHV-Closed	6	45	+39	22	+16	16	+10
Moore Cutoff/Dutch Flats	OHV-Open	48	45	-3	85	+37	106	+58
	OHV-Limited	-	-	-	3	+3	-	-
	OHV-Closed	62	65	+3	22	-40	4	-58
Mounds	OHV-Open	39	36	-3	50	+11	63	+24
	OHV-Limited	-	-	-	6	+6	5	+5
	OHV-Closed	31	34	+3	14	-17	1	-30
Mussentuchit/Last Chance	OHV-Open	83	74	-9	92	+8	125	+41
	OHV-Limited	-	-	-	4	+4	-	-
	OHV-Closed	42	51	+9	30	-12	1	-41
North Jurassic/Flat Top	OHV-Open	48	36	-12	75	+27	92	+44
	OHV-Limited	1	1	-	1	-	5	+4
	OHV-Closed	50	61	+12	23	-27	2	-48
Sids Mountain/Wikiup	OHV-Open	132	127	-5	146	+14	166	+34
	OHV-Limited	-	-	-	1	+1	1	+1
	OHV-Closed	38	43	+5	23	-15	2	-36
Surrounding Goblin Valley	OHV-Open	29	23	-6	31	+2	37	+8
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed	9	15	+6	7	-2	1	-8
Swaseys Cabin/Reds Canyon	OHV-Open	111	98	-13	118	+7	151	+40
	OHV-Limited	-	-	-	-	-	4	+4
	OHV-Closed	46	60	+13	39	-7	2	-44
Temple Mountain	OHV-Open	27	18	-9	31	+4	59	+31
	OHV-Limited	33	26	-7	48	+15	38	+5
	OHV-Closed	38	53	+16	19	-18	1	-36

Figure 3-10: Miles of Route Limited by Vehicle Type



TMP implementation activities that could affect motorized 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.

Alternative A (No Action)

The Alternative A network includes 47 miles limited to single-track use and 12 miles limited to e-bike use. Overall, 66% of the miles of evaluated routes would remain available for OHV use under Alternative A. Within specific route network geographic areas, between 33% (in the Grassy Trails network) and 90% (in the Limestone Cliffs network) of the evaluated routes would remain designated for OHV use (Open or Limited). Under Alternative A, the north and south parts of the Front of the Reef route network geographic area are not connected by designated routes, so Highway 24 needs to be used to get from one end to the other. The effects described above from continuation of current designations and maintenance of the routes (e.g., impacts to user access for desired recreation opportunities and experiences, encounters or conflicts with other users seeking different experiences or with authorized users, route-finding confusion, etc.) would continue on those routes designated for OHV use. Overall, Alternative A would reflect a continuation of current designations for the 66% of routes designated OHV-Open or OHV-Limited, and the remaining 34% of inventoried routes which are not currently authorized for public use would be designated OHV-Closed.

Alternative B (Resource Protection Emphasis)

Compared to Alternative A, the Alternative B travel network would result in an overall 16% (218-mile) reduction in routes designated OHV-Open, a 17% (17-mile) reduction in routes designated OHV-Limited, and a 32% (235-mile) increase in closed routes.

Table 3 compares Alternative B route designation changes to Alternative A. Table 3 discusses the route designation changes by route network geographic area. In addition:

- Alternative B would offer fewer OHV-facilitated access for recreation opportunities and experiences compared to the other alternatives while still providing access to most of the TMA's most popular destinations.
- Alternative B would provide more user-tailored motorized experience opportunities than Alternative A through its OHV-Limited designations. However, Alternative B motorized single-track opportunities would be diminished over Alternative A due to the closure of the Waterfall trail and a 34% reduction in the Twin Knolls trail system.
- Alternative B, in the Sinbad-Swaseys Cabin-Sids Mountain and Temple Mountain RMZs, would see a net reduction in vehicle-based dispersed camping over Alternative A. The affected portion of the former accounts for roughly 4% of all recreation visits to the TMA and the affected portion of the latter accounts for 13% of all TMA recreation visits.
- Alternative B, in the Wedge/Buckhorn RMZ, would not meaningfully affect vehicle-based dispersed camping over Alternative A because the vast majority occurs at BLM designated sites and along the rim of the Little Grand Canyon. However it would diminish motorized recreation on unimproved trails, which would affect that user group but does not diminish overall objectives for the RMZ.
- Alternative B, in the Mounds, Grassy Trails, North Jurassic/Flat Top, Humbug/Chimney Rock, and Cow Flats/Cedar Mountain route network geographic areas would diminish 34% of the OHV opportunities.
- Alternative B would have the lowest potential of any alternative for conflicts between motorized users, recreation users and authorized users, and motorized users and nonmotorized users.

Table 3-18: Alternative B Mileage Changes by Designation Type

	OHV-Open	OHV-Limited					OHV-Closed
		66″ (UTV)	52″ (ATV)	Single-track	E-bike	Airstrip	
Alt A	1,330	0	3	47	12	0	732
Alt B	1,112	23	3	42	12	0.5	967
Change	-218	+23	0	-5	0	+0.5	+235

Table 3-19: Impacts to Motorized Recreation Opportunities – Alternative B

Route Network Geographic Area	Alternative B's Notable Impacts
Behind the Reef	Limiting the 0.4-mile Hidden Splendor Airstrip SS42552 to aircraft would increase safety as ground-based vehicles would not be driving, camping, or parking on or around the airstrip. Closing the 8.6-mile Waterfall Trail SS4308 would eliminate the only single-track route in this route network geographic area. Closing 3.3 miles of evaluated routes in the route network geographic area would reduce OHV-based dispersed camping opportunities. This is meaningful because the implementation of camping fees at Temple Mountain Townsite in 2023 reduced opportunities for free camping. Opening 2.8 miles of short routes off the Behind-the-Reef Road would allow for vehicle-based dispersed camping. Opening 0.6 miles of short routes near Hidden Splendor would allow for vehicle-based dispersed camping.

Route Network Geographic Area	Alternative B's Notable Impacts
	Opening SS4254 would authorize vehicle travel down to Muddy Creek, which would also facilitate vehicle-based dispersed camping. This road is a major access point for wilderness recreation. Impacts of designating the last 0.4 miles on nonmotorized recreation access are analyzed in the next section.
Box Flat/Big Hole	Closing 8.3 miles of short routes on the Prickly Pear flats in the west part of the route network geographic area would require visitors to hike 1.8 miles further to reach a pictograph panel, and 4.4 miles for overlooks in Red Canyon's east and west forks, and 2.4 miles further to reach an overlook looking down into the San Rafael River Canyon and Assembly Hall Peek. Closing 7.8 miles of routes in the east portion of the route network geographic area would decrease opportunities largely for OHV touring off the main county road. Opening 3.4 miles of routes in the east portion of the route network geographic area would increase opportunities to access recreation opportunities on state land.
Buckhorn/Wedge	Closing 2.6 miles of route along the Good Water Rim Trail would remove vehicular access to two points overlooking Good Water Canyon, reduce motor vehicle touring opportunities, and enhance the experiences of mountain bikers and e-bikers, as they would not be exposed to the noise and dust of motorized vehicles. Closing 20% of the evaluated routes in the route network geographic area would decrease motorized opportunities.
Buckmaster/Tidwell Draw	Designating 39.1 miles (77%) of the Buckmaster trail network[26] as open would facilitate vehicle touring opportunities. Limiting 6.8 miles to single-track would increase opportunities for that user group. Closing 22% of the evaluated Buckmaster Trail network, including 8.2 miles of network-connecting routes and 2.9 miles of short routes, would decrease opportunities for OHV touring. Closing 3.4 miles of short routes paralleling the main route north of Smith Cabin would not impact recreation opportunities.
Coal Cliffs	Limiting 15.7 miles of dirt bike routes close to the town of Moore would provide motorized access to cultural and historic sites and would increase opportunities for recreational/scenic driving for that user group. Opening 115 miles of routes to OHVs would also provide increased opportunities. Closing 1.3 miles would remove those opportunities.
Copper Globe/Lone Tree, Sids Mountain/Mexican Mountain, Swaseys Cabin/Reds Canyon (within Sinbad-Swaseys Cabin-Sids Mountain RMZ)	Closing 29.9 miles of parallel or redundant routes and short routes and loop routes would not diminish the geographic extent or connectivity of the route networks but could make navigation clearer. However, it would reduce access for vehicle-based dispersed camping.
Fremont Junction, Limestone Cliffs[27]	Closing 88% of the route mileage, much of which is currently seasonally restricted, would reduce motorized access in seasonally important habitats. Opening 12% of the routes for recreational riding as well as hunting, wood cutting, shed hunting, and pine nut collecting in the route network geographic areas' dense pinyon-juniper forests. Access would not be lost to private property or adjacent non-BLM federal lands.
Mounds, Grassy Trails, North Jurassic/Flat Top, Humbug/Chimney Rock,	Opening 141 miles (35%) of all routes would perpetuate OHV opportunities. Limiting 3 miles (1%) of all routes to 66″ or less vehicles would create opportunities for that user group.

[26] There are 54 miles of evaluated routes in the Buckmaster Trail network.

[27] Currently there are 35.4 miles of evaluated routes in these route network geographic areas that are seasonally closed for wildlife protection.

Route Network Geographic Area	Alternative B's Notable Impacts
Cow Flats/Cedar Mountain[28]	Limiting 11 miles (3%) of all routes to motorized single-track would create opportunities for that user group. Closing 244 miles (61%) of all routes would remove OHV opportunities. These four route network geographic areas would see the greatest reduction in motorized recreation opportunities including motorized access to historic features such as old cabins, wagon trails, camps, and mine remnants.
Temple Mountain	Closing 34% of Twin Knolls trail system would decrease opportunities for motorcyclists. Limiting to 52" SS2725 and SS2726 (linking Twin Knolls with the Temple Mountain Townsite area) would enhance connectivity of the single-track network. Full-sized vehicles already dead-end at the single-track system so no reduction in opportunity would occur. Closing 4.1 miles of low-use routes in the Temple Mountain area is not expected to detract from recreation opportunities.

Alternative C (Multiple Use Emphasis)

Compared to Alternative A, the Alternative C travel network would result in a 19% (273-mile) increase in public OHV access within the TMA overall.

Table 3 compares Alternative C route designation changes to Alternative A. Table 3 discusses the route designation changes by route network geographic area. In addition:

- All OHV-Open routes discussed above in Alternative B are open in Alternative C.
- Alternative C emphasizes incorporating width limitations to reduce user conflict. Roughly 3% of all routes would be restricted to 66" or lower and 6% of would be motorized single-track. However, Alternative C motorized single-track opportunities would be diminished over Alternative A due to the closure of the Waterfall Trail.
- Alternative C would add to routes limited to e-bikes on the Wedge, enhancing the opportunities which already exist due to the Good Water Rim Trail and increasing e-bike trail mileage by roughly 42%.
- In most route network geographic areas, Alternative C increases the route network mileage from Alternatives A and B to create opportunities for longer rides, loops, and appreciation of scenery and historic and cultural sites. This is especially prominent in the Copper Globe/Lone Tree, Temple Mountain, Swaseys Cabin/Reds Canyon, and Sids Mountain/Wickiup route network geographic areas and the Coal Cliffs, Box Flat/Big Hole, Grassy Trails, and Humbug/Chimney Rock route network geographic areas. This provides vehicular access to overlooks, historic sites such as cabins, Cold War-era mines, rock imagery panels, dispersed camping opportunities (especially the three RMZs), and opportunities for sightseeing and camping. It also increases opportunities for education and appreciation of historic resources. This allows recreationists who are unable to hike, or who do not have the experience to engage in backcountry nonmotorized recreation, to recreate in primitive, remote environments they would not otherwise be able to visit.

[28] There are 399 miles of evaluated routes within these route network geographic areas.

Table 3-20: Alternative C Mileage Changes by Designation Type

	OHV-Open	OHV-Limited					OHV-Closed
		66″ (UTV)	52″ (ATV)	Single-track	E-bike	Airstrip	
Alt A	1,330	0	3	47	12	0	732
Alt C	1,522	58	0	103	17	1	458
Change	+192	+58	-3	+56	+5	+1	-274

Table 3-21: Summary of Impacts to Motorized Recreation Opportunities – Alternative C

Route Network Geographic Area	Alternative C's Notable Impacts
Behind the Reef	Opening 3.3. miles of routes in the network area would increase OHV-based dispersed camping opportunities. This is meaningful because the implementation of fees at Temple Mountain Townsite in 2023 reduced opportunities for free camping. Unlike Alt. B, the Waterfall Trail would not be closed. It would remain limited to single-track.
Box Flat/Big Hole	Opening 12 miles of routes would allow for motorized access including access to three overlooks of Red Canyon's east and west forks and a pictograph panel, enabling a greater number of visitors to appreciate scenery and cultural sites. Limiting 6.8 miles to motorized singletrack and 8.4 miles to 66″ would facilitate recreation opportunities for their respective users.
Buckhorn/Wedge	Closing 2.6 miles of route along the Good Water Rim Trail would remove vehicular access to two points overlooking Good Water Canyon, reduce motor vehicle touring opportunities, and enhance the experiences of mountain bikers and e-bikers, as they would not be exposed to the noise and dust of motorized vehicles. 25% of the non-county motorized routes in the route network geographic area would be closed. Some of these are currently open, while others are currently closed.
Buckmaster/Tidwell Draw	Opening 36.2 miles (72%) of the Buckmaster trail network[29] would facilitate vehicle touring opportunities. Limiting 7.5 miles (15%) would facilitate recreation opportunities for their respective users. Closing 6.5 miles (1%) would decrease opportunities for vehicle touring. Closing 1.8 miles of short routes paralleling the main route north of Smith Cabin would not impact recreation opportunities.
Coal Cliffs	Limiting 15.7 miles of dirt bike routes close to the town of Moore would provide motorized access to cultural and historic sites and would increase opportunities for recreational/scenic driving for that user group. Opening 115 of the 132 miles of routes in the network to OHVs would increase opportunities for all motorists. 1.3 miles would be closed opportunities.
Copper Globe/Lone Tree, Sids Mountain/Mexican Mountain, Swaseys Cabin/Reds Canyon (within Sinbad-Swaseys Cabin-Sids Mountain RMZ)	29.9 miles of parallel or redundant routes and short routes and loops would be closed. This would not diminish the geographic extent or connectivity of the route networks but could make navigation clearer. However, it would have less access for vehicle-based dispersed camping than Alt. D. Limiting SS4589 (Sagebrush Bench airstrip) to aircraft would increase safety as ground-based vehicles would not be driving, camping, or parking on or around the airstrip
Fremont Junction, Limestone Cliffs[30]	2.5 miles of closed route and 16.8 miles of seasonally limited route in sensitive winter habitat would be changed to open, increasing access to hunting, firewood cutting, pine nut foraging, camping, and other recreational opportunities as well as motorized winter

[29] There are 50.2 miles of evaluated routes in the Buckmaster Trail network.

[30] Currently there are 35.4 miles of evaluated routes in these route network geographic areas that are seasonally closed for wildlife protection.

Route Network Geographic Area	Alternative C's Notable Impacts
	recreation not previously accessible.
Mounds, Grassy Trails, North Jurassic/Flat Top, Humbug/Chimney Rock, Cow Flats/Cedar Mountain[31]	Opening 301 miles (75%) of all routes would enhance OHV opportunities. Limiting 3 miles (1%) of all routes to 66″ or less vehicles would create opportunities for that user group. Limiting 11 miles (3%) of all routes to motorized single-track would create opportunities for that user group. 84 miles (21%) of routes would be closed; some of these are currently closed while others are open.
Temple Mountain	9 miles of route which are currently either closed or open would be designated limited to 66″ or less, affording greater opportunities for motor vehicle touring for those users. Opening 4.5 miles would increase touring opportunities for all vehicles. Opening six additional dead-end routes (2 miles total) would create opportunities for motorized recreationists to sightsee, visit mines, and camp. Finally, designating the 3-mile V-J trail would allow motorcyclists to easily access the Twin Knolls trail system from the Temple Mountain recreation sites.

Alternative D (Access Emphasis)

Compared to Alternative A, the Alternative D travel network maximizes access across the TMA. It would close 53 miles (2%) of the inventoried routes.

Table 3 compares Alternative D route designation changes to Alternative A. Table 3 discusses the route designation changes by route network geographic area. In addition:

- All OHV-Open routes discussed in Alternative C are open in Alternative D.
- Alternative D allows motorized access across the greatest mileage of routes.
- Routes which are currently open but closed in Alternative D are receiving negligible to no use by the public.
- Alternative D opens nearly all of the evaluated routes in the Temple Mountain route network geographic area and includes historic mining routes in other locations including Copper Globe, Calf Mesa, Reds Canyon, and Buckmaster (Sids Mountain/Wickiup, Black Dragon/Mexican Mountain, and Buckmaster/Tidwell Draw, respectively). Compared to the other alternatives, Alternative D would allow the greatest number of opportunities for vehicle-supported dispersed camping, sightseeing, and exploring the historic mines and mining features associated with the Temple Mountain Mining District. Opening short, dead-end routes does not change the networks' connectivity, but does enhance the vehicular accessibility of historic sites. This allows recreationists who are unable to hike, or who do not have the experience to engage in backcountry nonmotorized recreation, to recreate in primitive, remote environments they would not otherwise be able to visit.
- Alternative D opens 13 routes open along Mexican Mountain Road (2 more than Alternative C), ranging from small (<0.1 miles) loops to 0.7 miles, which could be legally used for vehicle-based dispersed camping opportunities.
- Alternative D's relatively low amount of width restrictions could result in more motorized user conflict than Alternative C.
- Some of Alternative D's open roads are occasionally used as hiking opportunities, although route openings would not affect any well-known destination hikes. For additional information on nonmotorized conflicts, see Section 3.3.4.3, Alternative D.

[31] There are 399 miles of evaluated routes within these route network geographic areas.

- A possible adverse effect of this high level of OHV access is conflict with authorized users/uses, especially grazing, as many of the dead-end routes open in Alternative D but closed in Alternatives B and C lead to range improvements such as developed springs, reservoirs, and mineral sites which concentrate cattle at those locations.

Table 3-22: Alternative D Mileage Changes by Designation Type

	OHV-Open	OHV-Limited					OHV-Closed
		66″ (UTV)	52″ (ATV)	Single-track	E-bike	Airstrip	
Alt A	1,330	0	3	47	12	0	732
Alt D	1,924	47	0	118	17	1	53
Change	+594	+47	-3	+71	+5	+1	-679

Table 3-23: Summary of Impacts by Route Network Geographic Area – Alternative D

Route Network Geographic Area	Alternative D's Notable Impact
Behind the Reef	Limiting 0.9 miles of airstrips (Hidden Splendor and McKay Flat) to aircraft would increase safety as ground-based vehicles would not be driving, camping, or parking on or around the airstrips. Opening 7.1 miles of short routes and loop routes along the Behind-the-Reef Road and Temple Mountain Junction would increase access to parking and vehicle dispersed camping. Opening SS4254 would authorize vehicle travel down to Muddy Creek, which would also facilitate vehicle-based dispersed camping. This road is a major access point for wilderness recreation. Impacts of designating the last 0.4 miles on nonmotorized recreation access are analyzed in the next section.
Box Flat/Big Hole	Opening 22.9 miles of routes would allow for motorized access including access to three overlooks of Red Canyon's east and west forks and a pictograph panel, enabling a greater number of visitors to appreciate scenery and cultural sites. Limiting 7.2 miles to motorized singletrack and 7.2 miles to 66″ would facilitate recreation opportunities for their respective users.
Wedge/Buckhorn	Opening SS3224 and SS3225 would authorize vehicle travel to two additional overlooks of the San Rafael River with greater solitude than the Wedge area affords. Opening SS2228-29 and SS3283-84 would enhance opportunities for scenic touring and camping in the same area. Opening SS3178 would provide access to a remote overlook along the canyon rim. Opening many small spurs and loops along the road to this point would increase vehicle-based dispersed camping opportunities. Given the high volume of traffic which comes to the rim, these designations maximize access for a high volume of diverse visitors; they also increase potential of visitor impacts along the corridor.
Buckmaster/Tidwell Draw	Designating 41.6 miles (82%) of the Buckmaster Trail network as Open would provide vehicle touring opportunities. Limiting 6.9 miles to single-track would increase opportunities for that user group. Closing 1.4 miles (3%) would decrease opportunities for OHV touring. No trails north of Smith Cabin would be closed.
Coal Cliffs	Opening 128 miles of routes to OHVs would provide motorized access to cultural and historic sites and would increase opportunities for recreational/scenic driving for that user group. Limiting 2 miles would create opportunities for that user group. Closing 2 miles would remove those opportunities. the 132 miles in the route network geographic area would be Open, 2 miles would be limited, and 2 miles would be closed.

Route Network Geographic Area	Alternative D's Notable Impact
Copper Globe/Lone Tree, Sids Mountain/Mexican Mountain, Swaseys Cabin/Reds Canyon (within Sinbad-Swaseys Cabin-Sids Mountain RMZ)	Opening nearly every route in the Sinbad-Swaseys Cabin-Sids Mountain RMZ including many short routes which could be used for vehicle-based dispersed camping or to access mines by vehicle. Limiting the 9.1 Willow Spring motorized single track system would create a new opportunity for that user group in the Copper Globe/Lone Tree route network geographic area west of Devils Canyon. Opening 7.4 miles of route roughly parallel to the southwest boundary of Devils Canyon Wilderness would enable motorized access to an overlook of Sagebrush Bench. Limiting SS4589 (Sagebrush Bench airstrip) to aircraft would increase safety as ground-based vehicles would not be driving, camping, or parking on or around the airstrip
Fremont Junction, Limestone Cliffs[32]	Opening 27 miles (75%) of routes which are currently seasonally limited in these route network geographic areas would maximize year-round access to hunting, firewood cutting, pine nut foraging, camping, and other recreational opportunities as well as motorized winter recreation not previously accessible. Designating 36.6. miles as closed would not substantively reduce nonmotorized recreation access or trail connectivity because 24.4 miles are already currently closed.
Mounds, Grassy Trails, North Jurassic/Flat Top, Humbug/Chimney Rock, Cow Flats/Cedar Mountain[33]	Opening 301 miles (88%) of all routes would increase opportunities more than Alt. C. Limiting 3 miles (1%) of all routes to 66″ or less vehicles would create opportunities for that user group. Limiting 11 miles (3%) of all routes to motorized single-track would create opportunities for that user group. 84 miles (21%) of all routes would be closed; some of these are currently open while most are currently closed.
Temple Mountain	Opening 59 miles of OHV routes around Temple Mountain which lead to mines, historic feature, and camping opportunities. This change maximizes public OHV access to these sites by allowing visitors who are unable to hike to see them up close. Limiting the Color Trails (SS2723-2724) to 66″ instead of single track. This would increase the number of visitors who could access the trail but could diminish the experiences of motorcyclists who currently use the system. Similarly, changing the Lone Man trail from Limited to Open could diminish the experiences of motorcyclists who currently use the system.

Cumulative Effects to Motorized Recreation

Past, present, and foreseeable actions and trends were previously described in the cumulative actions portion of the Affected Environment. Cumulative effects from those actions include the following overall changes in OHV recreation opportunities on BLM land in the analysis area of Emery, Grand, and Sevier counties. To the existing route networks (See Tables REC-3 and REC-4), the alternatives would add:

- Alternative A: No change to the total open or limited mileage within the analysis area,
- Alternative B: A net mileage reduction of open or limited routes within the analysis area of 16%,
- Alternative C: A net mileage increase of open or limited routes within the analysis area of 19%,
- Alternative D: A net mileage increase of open or limited routes within the analysis area of 47%.

Providing an insufficient number of routes for users to camp on would have the cumulative impact of diminishing dispersed camping opportunities in the analysis area. In most of Grand County's high-use areas on BLM lands, camping is limited to developed campgrounds or designated dispersed sites. As

[32] Currently there are 35.4 miles of evaluated routes in these route network geographic areas that are seasonally closed for wildlife protection.

[33] There are 399 miles of evaluated routes within these route network geographic areas.

dispersed camping is currently allowed throughout the entire PFO and RFO, alternatives with greater mileage in high-use areas may hold appeal to users who desire vehicle camping access. Route width limitations could have cumulative effects by increasing or decreasing the availability of vehicle-restricted trails for users who do not want to conflict with other user groups. The magnitude of the effects is greatest where there is high use, and thus potential of crowding or resource conflict.

Limitations to vehicle types preclude other OHVs but also eliminates conflict between small and large vehicles on specific trails/networks. To the existing route networks (See Tables REC-2 and REC-3), the alternatives would add:

- Alternative A: No change to the width limits on 62 miles of route within the analysis area,
- Alternative B: Width limits on 80 miles of route, for an increase of 29% in the analysis area including one Limited to Aircraft route,
- Alternative C: Width limits on 178 miles of route, for an increase of 187% in the analysis area including one Limited to Aircraft route,
- Alternative D: Width limits on 182 miles of route, for an increase of 194% in the analysis area including two Limited to Aircraft routes.

Cumulative effects to recreation also arise from conflicts between motorized and nonmotorized recreation users, grazing permittees, mineral lessees or permittees, and landowners. Other authorized users in the analysis area may be driving larger vehicles such as livestock semi-trucks or heavy equipment transport vehicles for graders or dozers, or larger number of vehicles such as rig transport and crew vehicles needed to drill an oil well, which can further add to crowding and affect recreation opportunities. User safety issues are exacerbated by limited sight distance on some routes due to topography (hills or curves), increased traffic, access to hazardous mine sites, and mixed traffic on travel routes (e.g., semi-trucks, equestrian and dirt bike use on the same route). As use increases relative to project development and OHV access and recreation, user safety issues also increase. Limiting and Closing routes to OHV use reduces the types of vehicles and number of routes where potential user conflicts could occur.

3.3.4.3 Environmental Effects Analysis: Nonmotorized Recreation

Common to All Alternatives

Under all alternatives, the following circumstances would stay the same:

- Maintaining open routes within wilderness cherry-stems would make backcountry nonmotorized recreation more accessible to those equipped with the appropriate vehicle.
- Aircraft would use designated airstrips.
- The routes in Table Rec-6 would be open in all alternatives. These routes provide access to nonmotorized trailheads.
- The majority of TMA nonmotorized recreation would occur in designated wilderness areas.

Sights, sounds, and other evidence of human presence (such as vehicles) can hinder a visitor's sense of remoteness and degrade the physical environment. The magnitude of the effect depends on the proximity of the visitor to the disruption. As a proxy for measuring effects to nonmotorized recreation, Table 3 summarizes the route mileage in each Recreation Opportunity Spectrum Class (See Appendix D for additional information on these classes).

Table 3-24: Mileages within Each ROS Class by Alternative

ROS Class	Miles OHV-Open	Miles OHV-Limited	Miles OHV-Closed

ROS Class	Miles OHV-Open	Miles OHV-Limited	Miles OHV-Closed
Alternative A (Baseline)			
Semi-primitive motorized	1,213	53	633
Semi-primitive nonmotorized	52	12	83
Primitive	0	0	0.08
Alternative B			
Semi-primitive motorized	1,025	78	795
Semi-primitive nonmotorized	39	2.3	105
Primitive	0.04	0	0.04
Alternative C			
Semi-primitive motorized	1,367	153	377
Semi-primitive nonmotorized	72	26	48
Primitive	0.04	0	0.04
Alternative D			
Semi-primitive motorized	1,716	149	34
Semi-primitive nonmotorized	102	42	2
Primitive	0.08	0	0

The nature of the effects will be the same across alternatives; however, the magnitude and location of the routes will vary. The magnitude can be judged using Table 3 – Table 3. The location of the effects can be judged using Map 2 – Map 5.

Alternative A (No Action)

Under Alternative A, there would be no change to nonmotorized recreation access to the 55 nonmotorized trailheads. There would also not be any changes to the recreation experiences as approximated in Table 3.

Alternative B (Resource Protection Emphasis)

Under Alternative B, changes to the recreation experiences are approximated in Table 3's calculations of mileage in the ROS zones. Table 3 discusses the Alternative's impacts to nonmotorized activities within the route network geographic areas. In general:

- Alternative B has the least amount of mileage out of all alternatives in semi-primitive nonmotorized and primitive zones. In semi-primitive nonmotorized zones there would be 39 miles of OHV-Open (75% of baseline/Alternative A) and 2.3 miles OHV-Limited (20% of baseline/Alternative A). In primitive zones there would be a short OHV-Open (0.04 mile) route. Within the RMZs, the only place where a motorized route would enter semi-primitive nonmotorized or primitive zones would be dead-end routes at the mouths of Chute and Wild Horse Canyons which would likely be used by motorists and nonmotorized users for camping.
- In the Humbug/Chimney route network geographic area, Alternative B reduced route density would afford more open spaces for nonmotorized use. Specifically, the RMP identified a semi-primitive nonmotorized zone around part of the Price River in this area. Lessened vehicular use here would facilitate a more natural setting conducive to hiking and appreciating scenery and wildlife.

- Alternative B's lower network mileage around several remote summits in the SRMA including Temple Mountain, Family Butte, the San Rafael Knob, and Bottleneck Peak would facilitate a more natural environment and remoteness for visitors who are hiking and rock climbing. This also reduces the probability of encountering other users since vehicle users can cover ground more quickly than a hiker or equestrian rider.

Table 3-25: Summary of Impacts to Nonmotorized Recreation Opportunities – Alternative B

Route Network Geographic Area	Impact Summary
Behind the Reef	Opening SS4254, the route that descends the bluff above Muddy Creek, decreases the distance to any destination along the creek by 0.4 mile. The Hidden Splendor trailhead is a popular access point for hiking, backpacking, canyoneering, seasonal river running, and horseback riding. Allowing access closer to the river in particular makes this trailhead more accessible to river runners. Opening SS4322 would decrease the hiking distance to two technical canyons by 0.3 mile, although there would be no net change for individuals making a loop with Ramp Canyon (a common approach for those without a shuttle). The more substantive benefit would be allowing vehicle camping further away from the main road. The Behind-the-Reef OHV trail is a technically challenging trail most often trafficked by UTVs. Camping set further back from the road allows a buffer from vehicle noise for visitors camping here before/after their trip to have some buffer from vehicle noise without having to hike into a campsite. Opening spurs routes along the Behind-the-Reef Road would enhance vehicle-based camping opportunities but could decrease opportunities for solitude for hikers, as many spurs are at the mouths of canyons which cut into wilderness and are appealing for hikers and horseback riders
Black Dragon/Mexican Mountain	Opening SS2061 would establish a more formal access point for a climbing wall to the west (Dillon Wall). This affords visitor safety as there would be a contained trailhead for climbers to park at, rather than leaving their vehicles along the road (which sees moderate to heavy use during the fair-weather seasons). Opening SS2123, which is within a cherry-stem into the Mexican Mountain Wilderness, and SS2124, which forms a portion of its border, would increase backcountry access for solitude-seeking visitors interested in hiking/riding cross-country in the more remote parts of the wilderness. However, neither provides access to established/well-known recreation opportunities.
Buckhorn/Wedge	Opening SS3083 (Calf Canyon) adds 0.5 miles of hiking for hikers and climbers. Hiking is on road with varied surface at the bottom of a scenic canyon but may still be detrimental for climbers carrying heavy gear. However, the solitude afforded by there being no vehicles around, as well as the cessation of impacts from dispersed camping, would enhance the quality of the experience for many visitors.
Buckmaster/Tidwell Draw	Opening SS2278 (Cottonwood Wash) eliminates 0.5 mile of road walking up a steep hill, leaving a one mile hike for visitors to reach the trailhead. Cottonwood Wash is an easy, flat wash with inscriptions, petroglyphs, and pictographs a short distance from the trailhead. Those seeking a longer hike would still have ample opportunities as the canyon itself is over four miles

Route Network Geographic Area	Impact Summary
	long and affords many opportunities for longer backcountry routes through the San Rafael Reef.
Front of the Reef	Closing SS5230A (Ernie Canyon) adds 0.1 miles to two hiking routes and a technical canyon route
Mussentuchit/Last Chance	Opening SS5389 (Corral Canyon) eliminates 0.7 mile of flat road walking for canyoneers. This would improve the quality of the experience because the walk is flat and not especially scenic and canyoneers need to carry equipment.
Sids Mountain/Wikiup	Closing SS3083 (Cane Wash), which is a 5.5-mile route on the bottom of a wash that has the same look and feel as the rest of the wash, would enhance the quality of visitor experience because they would not encounter vehicles on the portion of their loop that overlaps this route. Many visitors to Cane Wash hike upriver from Johansen Corral and then up Cane Wash, looping back to the trailhead. This wash affords solitude in the canyons of the Sids Mountain Wilderness.

Alternative C (Multiple Use Emphasis)

Alternative C's changes to the recreation experiences are approximated in Table 3's calculations of mileage in the ROS zones. Table 3 discusses the Alternative C's additional impacts to nonmotorized activities within the route network geographic areas. The impacts described in Table 3 also apply. In general:

- Alternative C's greatest mileage increases are within the PFO ERMA. The higher density of routes does not leave large expanses of undeveloped backcountry in the ERMA.
- Alternative C opens motorized use on canyon rims in the San Rafael Swell SRMA which could diminish the tranquility and feelings of remoteness of nonmotorized users in the canyons. Activities which could impair their solitude include visible headlights at night, noises/shouting, and drone overflights, the latter of which is occasionally reported in high-use areas such as the Wedge.
- Alternative C increases vehicular access to dispersed camping opportunities in the RMZs and historic sites and mines. This diversifies the users who are able to visit these sites. While nonmotorized recreationists could still walk to them, research shows that these users are unlikely to enjoy hiking on an active road due to the noise and dust generated by vehicles and loss of opportunities for solitude.

Table 3-26: Summary of Additional Impacts to Nonmotorized Recreation Opportunities – Alternative C

Route Network Geographic Area	Impact Summary
Behind the Reef	Limiting the McKay Flat airstrip SS4226A to aircraft landings can diminish solitude as they are readily seen and heard from a wide ground area. This airstrip sits between two wilderness cherry-stems, one of which is used to access a beginner-friendly, and thus relatively popular, technical canyon. Opening loops at the top of Wild Horse Canyon SS4283-84, and SS4288-89 would facilitate vehicle-based dispersed camping opportunities in a high-use area near many hikes. This area is a semi-primitive nonmotorized ROS class. This would increase likelihood of hikers and horseback riders encountering other visitors and/or be disturbed by motorized use, both of which are not preferred in the semi-primitive nonmotorized zone. Since Wild Horse Canyon nonmotorized use is confined by canyon walls, these encounters would not be readily avoidable by people existing the canyon.
Black Dragon/Mexican Mountain	Same as Alternative B.
Box Flat/Big Hole	Opening SS2180s-2210s would increase routes in a semi-primitive nonmotorized area near the top of Red Canyon. Red Canyon is a side canyon accessed by Mexican Mountain Road (below the canyon rim) which sees light rock climbing and hiking use. It is highlighted in several guide websites/books for scenery, a sense of remoteness despite its accessibility by vehicle, and opportunities for personal challenge such as establishing new climbing routes and hiking a challenging loop that which climbs up to the canyon's rim to link the east and west forks. The presence of vehicles on the rim could disturb recreationists in the as well as hikers completing the east fork-west fork loop, who could encounter a vehicle.
Buckhorn/Wedge	Opening Calf Canyon SS3083 would diminish opportunities for solitude. Opening SS3224, 25 (North Salt Wash overlooks) and SS3177 (Virgin Springs Canyon overlook) near the Wedge would diminish opportunities for solitude and tranquility sought by backpackers and river runners in the canyon. While visitation to these remote overlooks is expected to be low based on current visitor use patterns, recreationists at the bottom of the canyon, likely backpackers, have a higher sensitivity to obstructive activities due to the remoteness of their destination. Adverse impacts in this route network geographic area are likelier because the Wedge area is a high-use destination for motorists, North Salt Wash/the Little Grand Canyon are prominent destinations for backpacking in the SRMA, and the mouth of Virgin Springs Canyon has the best-established campsites in that corridor. The two overlooks near North Salt Wash are in a semi-primitive nonmotorized zone. Limiting SS3115 to e-bikes could cause visitor sensitivity since e-bikes can cover ground more quickly than hikers. Approximately half of the 3.5-mile e-bike trail is in a semi-primitive nonmotorized zone. Evidence of e-bike/mountain bike trails would be less pronounced than routes wide enough to accommodate a full-sized vehicle and camping impacts are not anticipated due to the short length.

Route Network Geographic Area	Impact Summary
Buckmaster/Tidwell Draw	Same as Alternative B.
Copper Globe/Lone Tree	Limiting SS4589 (Sagebrush Bench airstrip) to aircraft landings can diminish solitude as they are readily seen and heard from a wide ground area. This airstrip would affect hikers and canyoneers in the Devils Canyon Wilderness.
Front of the Reef	Opening North Fork Iron Wash SS2531 would reduce the approach hike for the challenging North Fork Iron Wash technical canyon by 0.4 miles (0.8 miles round-trip), which could be appreciated by canyoneers due to their need to carry equipment.
Mussentuchit/Last Chance	Opening SS5389a Corral Canyon, which parallels the canyon at a distance of 0.1–0.2 mile, is not anticipated to result in road noise degradation of the canyoneering experience. However, having access to the route could improve it by allowing a shuttle with bike or vehicle. Setting a shuttle would eliminate 2.4 miles of road walking. SS5139 is located on the south rim of Chimney Canyon, an exceptionally scenic and remote backpacking area highlighted in several guide websites and books. Allowing vehicular travel on the rim of this canyon would diminish opportunities for solitude and tranquility.
Sids Mountain/Wikiup	Same as Alternative B.
Surrounding Goblin Valley	Opening SS4322 Cable Canyon would reduce the approach hike to Cable Canyon by 0.2 mile.

Alternative D (Access Emphasis)

Alternative D's changes to the recreation experiences are approximated in Table 3's calculations of mileage in the ROS zones. Table 3 discusses the Alternative D's additional impacts to nonmotorized activities within the route network geographic areas. The impacts described in Table 3 and Table 3 apply. Also, Alternative D's:

- Opening a higher density of routes in semi-primitive, nonmotorized RSC zones in the Box Flat/Big Hole, Copper Globe/Lone Tree, Humbug/Chimney Rock, and Mounds route network geographic areas would make it less likely to have open spaces and solitude in those areas.
- Opening many short (<1 mile) spurs for parking and direct motor vehicle access to mines, historic features, and cultural sites which may detract from hiking opportunities, although in most cases the hikes are not long enough to constitute a meaningful "destination hike."

Table 3-27: Summary of Additional Impacts to Nonmotorized Recreation Opportunities – Alternative D

Route Network Geographic Area	Impact Summary
Behind the Reef	Opening routes leading to the wilderness boundary at the top of Chute Canyon (SS4318) and creating a loop at the top of Crack Canyon (SS4306), would increase vehicle camping opportunities in a high-use area near many hikes and increase the potential of visitor encounters and user conflicts. Since these areas are wash bottoms in confined canyons, other visitors are not readily avoided. Both routes are in semi-primitive nonmotorized zones.
Black Dragon/Mexican Mountain	Same as Alternative C.
Box Flat/Big Hole	Same as Alternative C.
Buckhorn/Wedge	Same as Alternative C.
Buckmaster/Tidwell Draw	Same as Alternative C.
Copper Globe/Lone Tree	Same as Alternative C.
Front of the Reef	Same as Alternative C.
Mussentuchit/Last Chance	Same as Alternative C.
Sids Mountain/Wikiup	Same as Alternative C.
Surrounding Goblin Valley	Opening SS3083 in Cane Wash (Sids Mountain/Wickiup area) would add 0.7 miles of motor vehicle route where there is currently hiking route at the bottom of the wash as well as allowing motorists to drive up onto Calf Mesa. Motor vehicle use in the bottom of the wash would conflict with hikers, backpackers, and equestrian users. Furthermore, motorized use on Calf Mesa would impair the solitude of recreationists hiking the remote loop formed by Cane Wash, Calf Mesa, and the unnamed drainage east of Cane Wash off Calf Mesa. Calf Mesa is semi-primitive nonmotorized area.

Cumulative Effects to Nonmotorized Recreation

Past, present, and foreseeable actions and trends were previously described in the cumulative actions portion of the Affected Environment. Cumulative effects include varying levels of route density, route-evidence, parking, vehicle-based dispersed camping, vehicles, dust, noise, and intra-group crowding especially in semi-primitive nonmotorized sites, near nonmotorized trails, and on canyon rims. The alternatives would add varying levels of and locations for aircraft low-altitude overflights. The alternatives would also add increased or decreased hiking distance to a point of interest. Finally, the alternatives have varying amounts of open or limited routes in semi-primitive nonmotorized zones. These changes affect solitude and overall availability of non-wilderness open spaces and may result in changed levels of user conflicts. The magnitude of the effects is greatest where there is high nonmotorized use such as near the Little Grand Canyon (Wedge/Buckhorn and Sids Mountain/Wickiup route network geographic areas), the front of the San Rafael Reef, and the Hidden Splendor area (Behind the Reef route network geographic area). Alternatives C and D would contribute more accumulation of effect to

nonmotorized recreationists, nonmotorized recreation sites, and semi-primitive nonmotorized areas than Alternative B, with Alternative D contributing the greatest accumulation of effect especially to low-use backcountry sites.

3.3.5 SOILS

Issue 6: How would the route network alternatives impact soil stability?

Issue 7: How would the route network alternatives impact soil health and erosion potential within the TMA?

The analysis area for soils is the TMA because it is the smallest unit which shows all impacts to soils within the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1).

3.3.5.1 Affected Environment

Soils within the TMA are diverse, ranging from areas composed of sand, which is erodible with wind, to areas composed of mancos shale, which is highly erodible and compactible. OHV use of existing routes has altered soil properties (e.g., compaction). Roads within the sandy soils tend to shift due to wind scours and deposition. Roads within the mancos shale have the potential for erosion via disturbance-created gullies as well as erosion caused by heavy precipitation events. Wet roads can be rutted by OHV use. Cryptobiotic soils, or biological soil crusts, can play important roles in maintaining soil and ecosystem health and are present within the analysis area. A single vehicle pass will reduce nitrogen fixation by cyanobacteria and increase wind and water erosion of surface soils (Davidson et al. 1996).

Evaluators used multiple geospatial datasets (such as geology and vegetation types) as well as specialist knowledge of the area to identify route-specific soil resource issues during the route evaluation process because a complete soil survey doesn't exist for the TMA. Therefore, soil impacts are estimated using number of routes as a comparison across alternatives. This approach overestimates the effects because one route crosses multiple soil types, so routes are counted more than once. See Table 2-1 for the total mileage of route designations under each alternative, and Table 3-11 for total mileages within certain vegetation types, which can be an indicator of soil types since vegetation tends to grow within certain soil types. Within the TMA, 1,349 evaluated routes (64% of the network) cross areas with high erosion potential and 1,844 evaluated routes (87% of the network) cross areas with moderate erosion potential. Additionally, 1,226 evaluated routes (58% of the network) are within 150 feet of cryptobiotic soils. See Table 3 and Table 3.

OHV-Closed designations protect soils and cryptobiotic soils. OHV-Open or OHV-Limited designations perpetuate effects to soils and cryptobiotic soils. Surface disturbances from off-route vehicle travel (e.g., passing or parking, particularly along minimally maintained routes, which tend to be narrower) can remove soil-stabilizing agents, such as vegetative cover, soil crusts, and woody debris, and increase soil compaction and erosion. Travel network implementation activities that may cause soil compaction or erosion include installing new signs, road maintenance consistent with the character and class of the route, and route reclamation.

Compaction from OHV use increases soil bulk density and decreases porosity (Assaeed et al. 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. 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).

Cumulative actions found in the analysis area are listed in Section 3.2.

- Use of travel routes can perpetuate compaction, rutting, contamination, and erosion from disturbed surfaces.
- Livestock grazing results in soil trampling, compaction, and erosion.
- Utilities and water developments result in compaction, contamination, and erosion from disturbed surfaces.
- Recreation leads to compaction, rutting, contamination, and erosion from disturbed surfaces.
- Mineral development result in compaction, rutting, contamination, and erosion from disturbed surfaces.

3.3.5.2 Environmental Effects Analysis

The following assumptions and methodologies were applied in this analysis of potential effects on soils and cryptobiotic soils from the alternative designations:

- Routes identified in the analysis directly cross the identified soil type.
- OHV-Closed designations would eliminate OHV effects to soils and cryptobiotic soils from those routes.
- Maintenance under this TMP will be appropriate to the class of road to ensure navigability for designated routes without changing the character, function, or recreation experience the route provides.

Numbers of routes located in soils with high or moderate erosion potential or in areas with cryptobiotic soils are used as indicators of potential OHV route designation impacts on soil health and stability (see Figure 3-11 – Figure 3-13). The nature of the effects will be the same across alternatives; however, the magnitude and location of the routes will vary. The magnitude can be judged using Figure 3-11, Figure 3-12, Figure 3-13, Table 3, and Table 3. OHV use of travel routes can remove soil-stabilizing agents, such as vegetative cover, soil crusts, and woody debris. TMP implementation activities that could result in compaction or erosion include route maintenance (e.g., surface and ditch blading.), reclamation (e.g., raking), and sign placement (e.g., digging post holes). These effects would occur in very short time frames (estimated to be one to four days' worth of work, though it may be longer for longer routes). TMP implementation activities that could reduce compaction or erosion include sign placement directing OHVs to routes that are less disruptive to erosive and cryptobiotic soils. These effects would occur over longer timeframes.

Figure 3-11: Number of Evaluated Routes Crossing Highly Erosive Soils

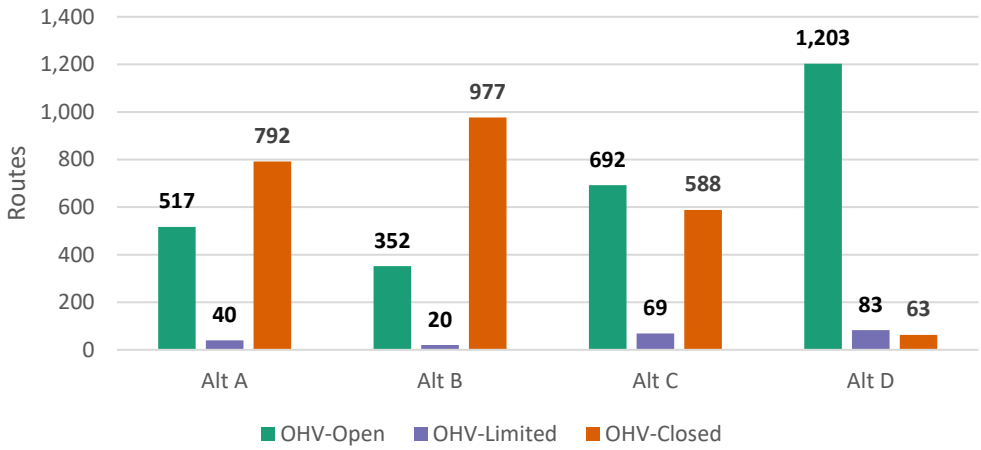


Figure 3-12: Number of Evaluated Routes Crossing Moderately Erosive Soils

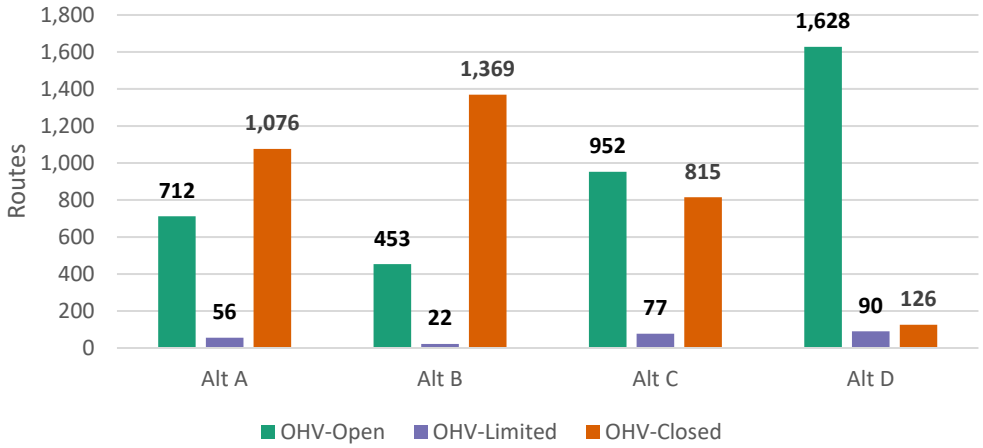


Table 3-28: Number of Evaluated Routes Crossing Highly and Moderately Erosive Soils

		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)
High Erosion Potential	OHV-Open	517	352	-165	692	+175	1203	+686
	OHV-Limited	40	20	-20	69	+29	83	+43
	OHV-Closed	792	977	+185	588	-204	63	-729
Moderate Erosion Potential	OHV-Open	712	453	-259	952	+240	1628	+916
	OHV-Limited	56	22	-34	77	+21	90	+34
	OHV-Closed	1076	1369	+293	815	-261	126	-950

Figure 3-13: Number of Evaluated Routes within 150 Feet of Cryptobiotic Soils

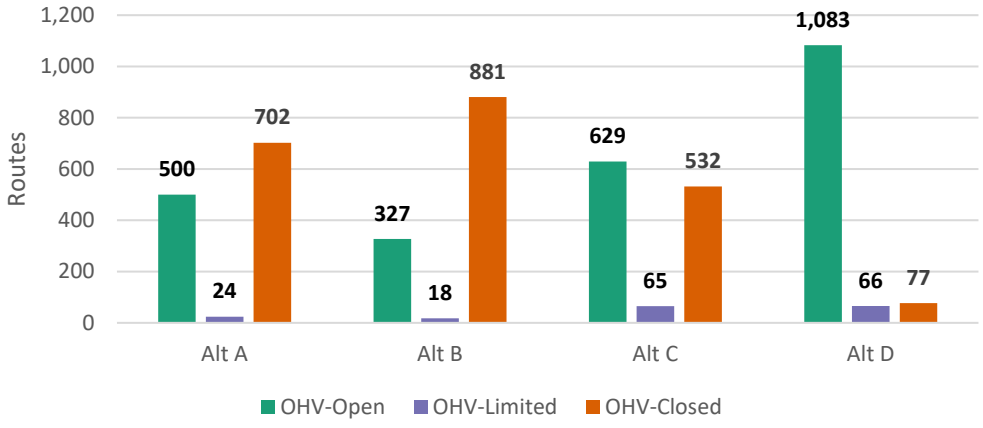


Table 3-29: Number of Evaluated Routes in Cryptobiotic Soils

		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)
Cryptobiotic soil	OHV-Open	500	327	-173	629	+129	1083	+583
	OHV-Limited	24	18	-6	65	+41	66	+42
	OHV-Closed	702	881	+179	532	-170	77	-625

Alternative A (No Action)

Under Alternative A, there would be no route designation changes in the TMA. In areas with high soil erosion potential, 41% (557) of the evaluated routes would remain designated for OHV use (OHV-Open or OHV-Limited). In areas with moderate soil erosion potential, 42% (768) of the evaluated routes would remain designated for OHV use. Additionally, 43% (524) of the evaluated routes would remain designated for OHV use in areas with cryptobiotic soils resulting in soil compaction, erosion, rutting, etc.

Alternative B (Resource Protection Emphasis)

Alternative B would designate 372 evaluated routes for OHV use in highly erosive soils (a 33% reduction from Alternative A), 475 routes in moderately erosive soils (a 38% reduction from Alternative A), and 345 routes in areas with cryptobiotic soils (a 34% reduction from Alternative A). Under Alternative B, the same types of effects on soils and cryptobiotic soils would be expected to occur on those routes designated OHV-Open or OHV-Limited. This alternative would have the overall lowest potential of any alternative for OHV-related impacts on soils and cryptobiotic soils.

Alternative C (Multiple Use Emphasis)

Alternative C would designate 761 evaluated routes for OHV use in highly erosive soils (a 37% increase from Alternative A), 1,029 routes in moderately erosive soils (a 34% increase from Alternative A), and 694 routes in areas with cryptobiotic soils (a 32% increase from Alternative A). Under Alternative C, the same types of effects on soils and cryptobiotic soils would be expected to occur on those routes designated OHV-Open or OHV-Limited. This alternative would have higher potential than Alternatives A and B but lower potential than Alternative D for OHV-related impacts on soils and cryptobiotic soils.

Alternative D (Access Emphasis)

Alternative D would designate 1,286 evaluated routes for OHV use in highly erosive soils (a 131% increase from Alternative A), 1,718 routes in moderately erosive soils (a 124% increase from Alternative A), and 1,149 routes in areas with cryptobiotic soils (a 119% increase from Alternative A). Under Alternative D, the same types of effects on soils and cryptobiotic soils would be expected to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative would have the highest potential of any alternative for OHV-related impacts on soils and cryptobiotic soils.

Cumulative Effects

Cumulative effects from past, present, and reasonably foreseeable projects and activities on soils and cryptobiotic soils includes compaction, erosion, and rutting as described in the affected environment.

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

Alternatives B-D would add route-related impacts where routes are newly designated for OHV use (OHV-Open or OHV-Limited).

3.3.6 SPECIAL STATUS PLANTS (T&E AND SELECT BLM SENSITIVE PLANTS)

Issue 8: How would the travel network alternatives impact Threatened & Endangered (T&E) plant species and select BLM Sensitive plants and their habitat within the TMA?

The analysis area for Special Status Plants (T&E and Select BLM Sensitive Plants) is the entire TMA because it is the smallest unit which shows all impacts to special status species and their habitats within the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural and ecological resources.

3.3.6.1 Threatened and Endangered Plant Species

The T&E plant species which have the potential to occur in the TMA and are listed as Threatened or Endangered under the ESA and their habitats are summarized in Table 3. 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 Biological Assessment developed by Price and Richfield BLM resource staff, the "Special Status Species" sections of the 2008 Price Proposed RMP/EIS (BLM 2008d, pages 3-36 to 3-49) and the 2008 Richfield Proposed RMP/EIS (BLM 2008f, pages 3-49 to 3-69), the 2008 Price RMP Biological Opinion (USFWS 2008a), and the 2008 Richfield RMP Biological Opinion (USFWS 2008b).

Table 3-30: Threatened and Endangered Plants Species and their Habitats

Species	Status	Habitat Information
Barneby reed-mustard (*Schoenocrambe barnebyi* also known as *Hesperidanthus barnebyi*)	Endangered	Barneby reed-mustard is endemic to Wayne County and Emery County. Critical habitat has not been proposed or designated for Barneby reed-mustard. One population (comprised of three sites) of *S. barnebyi* exists in the TMA near Muddy Creek, known as the Sy's Butte/Hidden Splendor Mine population, in the southern portion of the Swell and is characterized by complex geology (Chinle, Moenkopi, Kayenta, and Wingate formations) that forms steep north-facing cliffs and a mix of desert vegetation including desert grassland, salt-desert scrub, and pinyon-juniper woodland. For more details on habitat, threats, and trends, see Utah Reed-Mustards: Clay Reed-Mustard (*Schoenocrambe arigllaceae*) Barneby Reed-Mustard (*Schoenocrambe barnebyi*) Shrubby Reed-Mustard (*Schoenocrambe suffrutescens*) Recovery Plan (USFWS 1994) and Barneby Reed-Mustard (*Schoenocrambe barnebyi*) 5-Year Review (USFWS 2021a).

Species	Status	Habitat Information
Jones cycladenia (*Cycladenia humilis var. jonesii*)	Threatened	Jones cycladenia was listed as threatened on May 5, 1986 (USFWS 1986). The species occurs between 4,000 and 6,660 feet in elevation, typically on steep slopes, and is restricted to gypsiferous (high gypsum content), saline soils of the Wasatch, Cutler, Summerville, and Chinle formations. This soil is easily degraded, highly erodible, and difficult to rehabilitate after disturbances. Jones cycladenia is found in sparsely vegetated plant communities of mixed desert scrub, juniper, or wild buckwheat-Mormon tea. The largest of the four recovery units, the San Rafael Recovery Unit, comprises approximately 40% of the total known population and lies in eastern Emery County and the southeastern portion of the Price Field Office. BLM hired contractors to survey all the known modeled habitat within Emery County, no new populations were found. For details on habitat, threats, and trends see the Recovery Plan for Jones Cycladenia (USFWS 2021d).
Last Chance townsendia (*Townsendia aprica*)	**Threatened**	Last Chance townsendia was listed as threatened on August 21, 1985 (USFWS 1985a). Within the TMA, it can primarily be found south of I-70 from the western boundary of the Swell to the foothills of the Wasatch Plateau, with occurrences increasing with elevation. Monitoring indicates that large fluctuations within plots regularly occur but are the result of abiotic or environmental factors rather than human caused. For more details on habitat, threats, and trends, see Last Chance Townsendia Recovery Plan (USFWS 1993b) and Last Chance Townsendia 5-Year Review (USFWS 2013, USFWS 2019a).
San Rafael cactus (*Pediocactus despainii*)	**Endangered**	San Rafael cactus, listed as endangered on September 16, 1987 (USFWS 1987), can be found throughout much of the TMA. It grows in a wide variety of soils, although it may favor fine-textured, mildly alkaline soils rich in calcium, where it is known from limestone substrates of the Carmel Formation and the Sinbad member of the Moenkopi formation. It has also been found on shale barrens of the Brushy Basin member of the Morrison Formation, the Mancos, Dakota, and Entrada Formations, and in areas with soils composed of primarily alluvium and colluvium from 4,760-6,820 feet in elevation. Seventeen of the known populations, and 8% of the recorded occurrences of this species, occur within the boundaries of the TMA. For more details on habitat, threats, and trends, see the Winkler Cactus (*Pediocactus winkleri*) and San Rafael Cactus (*Pediocactus despainii*) Draft Recovery Plan (USFWS 2015) and the Winkler Cactus (*Pediocactus winkleri*) and San Rafael Cactus (*Pediocactus despainii*) 5-Year Review (USFWS 2019b).

Species	Status	Habitat Information
Ute ladies'-tresses (*Spiranthes diluvialis*)	**Threatened**	Ute ladies'-tresses, listed as threatened on January 17, 1992 (USFWS 1992), has no known populations in the TMA. Habitat includes perennial streams and rivers, in groundwater-fed meadows, and along human-created wetland systems (Fertig et al. 2005). The species is known in Emery and Wayne counties (UNPS 2021, USFWS 2021c). A population lies approximately 20 miles west of the TMA, upstream, in a tributary of the San Rafael River. For more details on habitat, threats, and trends, see Ute Ladies'-Tresses (*Spiranthes diluvialis*) Recovery Plan (USFWS 1995b) and Rangewide Status Review of Ute Ladies'-Tresses (*Spiranthes diluvialis*) (Fertig et al. 2005).
Winkler cactus (*Pediocactus winkleri*)	**Threatened**:	Winkler cactus was listed as threatened on September 21, 1998 (USFWS 1998). As it is currently defined, Winkler cactus is known only from Wayne County and extreme southeastern Sevier County. Winkler cactus is endemic to specific, fine-textured soils derived from the Dakota and Morrison Formations in the lower Fremont River-Notom area, and from the Entrada, Morrison, and Summerville Formations in Capitol Reef National Park. For more details on habitat and threats, see the Winkler cactus (*Pediocactus winkleri*) and San Rafael cactus (*Pediocactus despainii*) Draft Recovery Plan (USFWS 2015).
Wright fishhook cactus (*Sclerocactus wrightiae*)	Endangered	Wright fishhook cactus is endemic to Emery, Sevier and Wayne counties, Utah, and is widespread and common throughout the TMA. It was listed as endangered on October 11, 1979 (USFWS 1979). It prefers shallow, poorly developed soils derived from many geologic substrates, including the Mancos, Carmel, Entrada, Curtis, Summerville, Dakota, and Morrison Formations. Soil physiology is a limiting factor, with at least 3 of the following 4 requirements: 1) close proximity to fine-textured, presumably saline and/or gypsiferous strata; 2) close proximity to a sand-forming geologic stratum that contributes to the substrate; 3) fine- or medium-sized gravels, pebbles, or fossil oyster shells in (and particularly littering) the surface of the soil; and 4) level to gently sloping terrain (USFWS 2022). The Wright Fishhook Cactus (*Sclerocactus wrightiae* Benson) Recovery Plan (USFWS 1985b) notes that cacti are rare or absent where cryptobiotic crusts have been destroyed or are undeveloped. For more details on habitat, threats, and trends, see the Wright Fishhook Cactus (*Sclerocactus wrightiae* L. Benson) 5-Year Review: Summary and Evaluation (USFWS 2008c) and the NRCS plant guide on Wright fishhook cactus (NRCS 2011).

3.3.6.2 Affected Environment

The analysis area is the TMA because it is the smallest unit that shows all impacts to species within the TMA. Analysis of impacts was done by buffering modeled or potential habitat for each species by 300 feet to account for the spread of fugitive dust (USFWS 2021b) and then calculating the total acreage of modeled or potential habitat. Within the analysis area, threats to listed plant species include OHV use, grazing and trampling by livestock, mining and quarrying, competition from invasive noxious weeds, and climate change. Specifically, OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Section H.4 in Appendix H) may result in adverse impacts to BLM sensitive plants and their pollinators including crushing of plants or pollinators, fugitive dust deposition reducing stomatal conductance, increased transpiration rates, increased leaf temperature, decreased photosynthetic rates, decreased reproductive rates (Farmer 1993, Goossens and Buck 2009, USFWS 2010) and with its attendant species competition and habitat alteration. Route networks with open or limited designations can contribute to the effects described above. Closed designations eliminate OHV use effects, thereby benefiting special status plant species. Extreme weather such as drought, extreme heat or cold, or heavy snowfall exacerbate these effects.

3.3.6.3 Environmental Effects Analysis

The nature of the impacts of Alternatives A through D are the same as previously described. Table 3 shows the difference in the magnitude of the impacts between the alternatives. It displays the acres of potential special status plant habitat within 300 feet of routes designated for OHV use (OHV-Open or OHV-Limited) under each alternative. The other variation between the alternatives is which routes are open, as displayed in the alternatives maps (see Map 2 – Map 4). For a description of the Endangered Species Act Section 7 Consultation, see Section 4.1.2.

Table 3-31: Acres of ESA Listed and Select Sensitive Plant Species Potential Habitat within 300 feet of OHV-Open or OHV-Limited Routes by Alternative

Species	Conservation Status	Species-Specific Buffer	Acres of Potential Habitat in TMA	Alternative A Potential Habitat Impacted (Acres)	Alternative B Potential Habitat Impacted (Acres)	Alternative C Potential Habitat Impacted (Acres)	Alternative D Potential Habitat Impacted (Acres)
Barneby reed-mustard	Endangered	300 feet	801,100	58,138	49,912	66,930	78,777
Jones cycladenia	Threatened	300 feet	568,015	38,652	31,162	47,141	56,623
Last Chance townsendia	Threatened	300 feet	769,027	53,093	46,774	61,686	74,446
San Rafael cactus	Endangered	300 feet	1,143,760	81,557	70,506	96,391	115,239
Ute ladies'-tresses	Threatened	300 feet	105,549	5,912	5,139	7,152	8,951
Winkler cactus	Threatened	300 feet	97,214	5,054	3,840	5,502	6,047
Wright fishhook cactus	Endangered	300 feet	455,868	25,791	22,086	30,266	38,271
Maguire Daisy	Sensitive	300 feet	830,522	55,547	47,119	63,114	75,528
Creutzfeldt-flower	Sensitive	300 feet	52,699	3,796	3,730	6,428	8,330
Psoralea Globemallow	Sensitive	300 feet	528,865	38,520	29,187	49,249	59,586

[1] Habitat descriptions come from BLM specialists and NSE 2024.

Alternative A (No Action)

Under Alternative A, the effects described previously and quantified in Table 3 would continue to occur on those routes designated OHV-Open and OHV-Limited.

Alternative B (Resource Protection Emphasis)

Under Alternative B, some routes with known direct resource conflicts for T&E plant species were closed. The Alternative B travel network would reduce acres of impacts compared to Alternative A. The effects described above would occur on those routes designated OHV-Open or OHV-Limited, though at a reduced magnitude and on fewer routes. Alternative B would have the lowest potential of any alternative for OHV use-related impacts to habitat for each listed plant species in the TMA.

Alternative C (Multiple Use Emphasis)

Under Alternative C, some routes with known direct resource conflicts for T&E plants were closed. The Alternative C travel network would increase acres of impacts compared to 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 at an increased magnitude and on more routes.

Alternative D (Access Emphasis)

Under Alternative D, the travel network acreage with direct resource conflicts for T&E plants increases compared to Alternative A. The effects described above would occur on those routes designated OHV-Open or OHV-Limited. Alternative D would have the highest potential of any alternative for OHV use-related impacts to habitat for listed plant species in the TMA.

Cumulative Effects

The past, present and foreseeable trends and activities listed in Section 3.1 that occur within the TMA accumulate crushing of plants or pollinators, fugitive dust deposition reducing stomatal conductance, increased transpiration rates, increased leaf temperature, decreased photosynthetic rates, decreased reproductive rates, and weed spread with its attendant species competition and habitat alteration. Travel routes open to OHV use also provide access for rare plant collectors to poach T&E plants. The incremental effects of the alternatives are described in Table 3, above.

3.3.7 VISUAL RESOURCES

Issue 9: How would the travel network alternatives impact visual resources within the TMA?

The spatial analysis area 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. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural and scenic resources.

3.3.7.1 Affected Environment

Visual resources in the TMA include dramatic features such as the Wedge Overlook, San Rafael Reef, Mexican Mountain, Temple Mountain, and Buckhorn Draw that attract high levels of visitation because "they provide visual evidence of the geologic processes that created the San Rafael Swell" (BLM 2008d). The desert river corridors of Muddy Creek, the Price River, and the San Rafael River offer outstanding scenic characteristics with their array of desert river landscapes such as river oxbows, deep canyons, and lush riparian habitats. The I-70 Scenic ACEC is managed to maintain the scenic qualities of the San Rafael Swell where the interstate bisects the area.

The quality of visual resources is *measured* with visual resource inventory (VRI) classes. See Table 3-32 for VRI classes in the TMA and the miles of evaluated routes in those 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. For more details on the visual resource inventory that covers the TMA, see the BLM's Visual Resource Inventory for Price Field Office and the Visual Resource Inventory for Richfield Field Office, both dated November 2011.

Visual resources in the TMA are *managed* in accordance with the 2008 RMPs. See Map 11 and Table 3-33 for VRM Classes in the TMA and the miles of evaluated routes in those classes. 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 3-34 to 3-36 of the 2008 Price Proposed RMP/EIS (BLM 2008d) and pages 3-47 to 3-48 of the 2008 Richfield Proposed RMP/EIS (BLM 2008f). For more details on visual resource classes and how they are determined, see the BLM's Visual Resource Inventory manual (BLM 1986).

The areas of highest visual quality in the TMA as identified by the Price and Richfield inventories are in newly designated wilderness areas and the I-70, Muddy Creek, San Rafael Canyon (upper and lower portions), San Rafael Reef, and Segers Hole ACECs. VRM II within the TMA extends along the Price River, the San Rafael River, Muddy Creek, in Jurassic National Monument, and through other areas in the heart of the Swell and southwest of Goblin Valley State Park. The rest of the TMA is managed as VRM Class III and Class IV.

Table 3-32: Acres and Miles of Evaluated Routes by VRI Class

VRI Class	BLM-VRI Acres within TMA	Miles within VRI class
VRI Class I	259,377	77
VRI Class II	431,208	958
VRI Class III	312,335	777
VRI Class IV	145,018	349

Table 3-33: Acres and Miles of Evaluated Routes by VRM Class

VRM Class	BLM –VRM Acres within TMA	Miles within VRM class
VRM Class I	320,208	266
VRM Class II	285,357	645
VRM Class III	403,866	965
VRM Class IV	134,271	269

Cumulative actions found in the analysis area are listed in Section 3.2.

- Use of travel routes can perpetuate dust in the viewshed. The existence of travel routes perpetuates form, line, and color contrasts in the viewshed.
- Farmland agricultural practices (see Table 1-4), utilities, and water developments result in dust, form, line, and color contrasts in the viewshed that are rural or industrial in character.
- Mineral development result in form line, and color contrasts in the viewshed that are industrial in character.

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). 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. Finally, eroded hillsides from travel in highly erosive soils and weed spread or introduction can also result in a change in form, line, and color and create contrasts that impair visual quality.

VRM I and II classes are managed for, and VRI I and II areas were found to contain, high quality visual resources despite the presence of the above listed existing routes and other cumulative actions. VRM classes III and IV accounted for the changes in form, line, and color from those existing routes and other cumulative impacts.

3.3.7.2 Environmental Effects Analysis

Figure 3-14 – Figure 3-17, Table 3-34, and Table 3-35 inform the effects analysis for visual resources. They present the miles of routes in VRI and VRM Class I and Class II areas in the TMA. Analysis 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. Specifically, OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Section H.4 in Appendix H) may perpetuate the form, line, color, and dust impacts to visual resources that are already occurring on routes that are currently OHV-Open or OHV-Limited, and would add the dust impacts to routes that are currently managed as OHV-Closed. The application of specified operation and management tools provided in the TMP Implementation Guide—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 designation of each travel route, it is assumed there may be some form of follow-up action on the ground. For routes designated OHV-Closed, some such actions may include the placement of closure signs, reclamation, or installation of barricades, as described in Appendix H. For routes designated for OHV use, maintenance actions may include the use of heavy equipment for route maintenance consistent with the character and class of the route. The effects of these actions on visual resources are expected to be minor and short-term but are included in this analysis. Overall, all alternatives will result in some routes being closed, thereby eliminating OHV-related dust impacts from those routes on the landscape. Any reclaimed routes would reduce the route network footprint on the landscape by decreasing visual contrast to the natural-appearing landscape.

The nature of the effects will be the same across alternatives, however the magnitude and location of the routes will vary. The magnitude can be judged using Figure 3-14 – Figure 3-17, Table 3-34, and Table 3-35. The location of the effects can be judged using Map 11.

Figure 3-14: Miles of Evaluated Routes in VRI Class I Areas

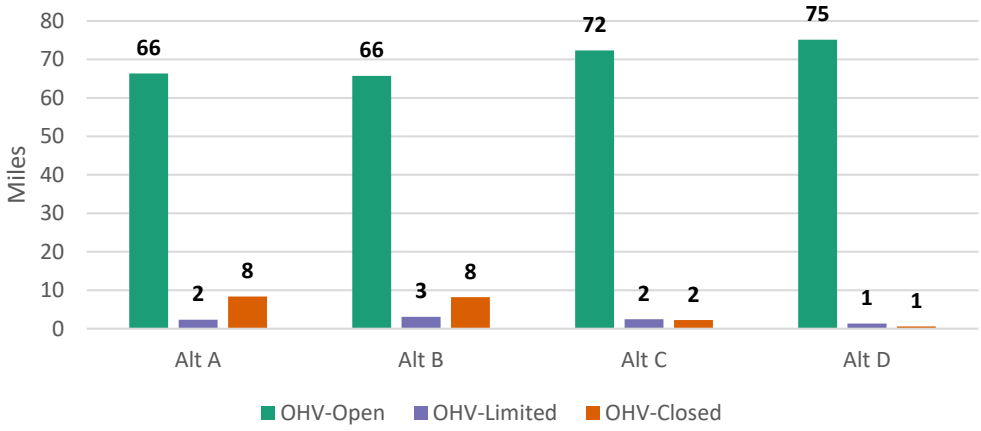


Figure 3-15: Miles of Evaluated Routes in VRI Class II Areas

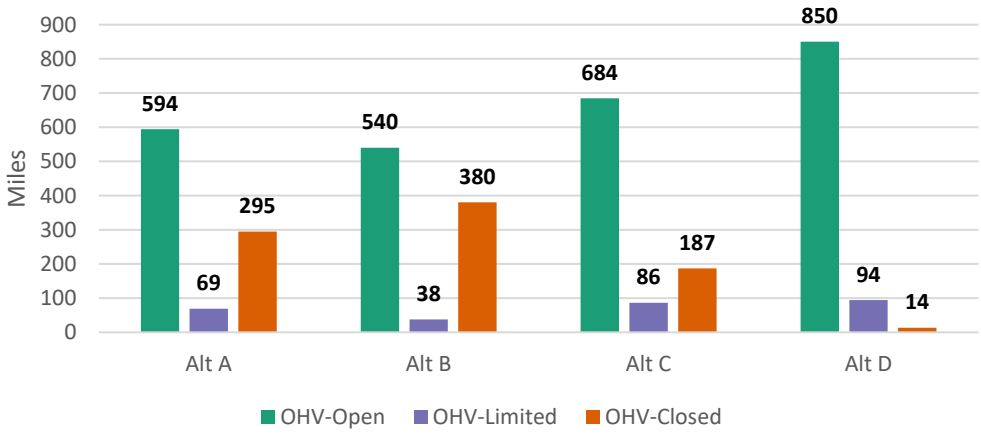


Figure 3-16: Miles of Evaluated Routes in VRM Class I Areas

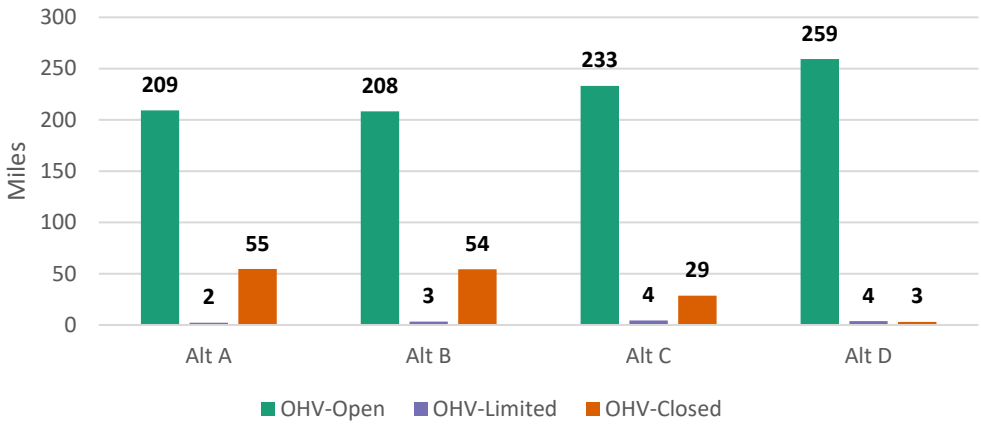


Figure 3-17: Miles of Evaluated Routes in VRM Class II Areas

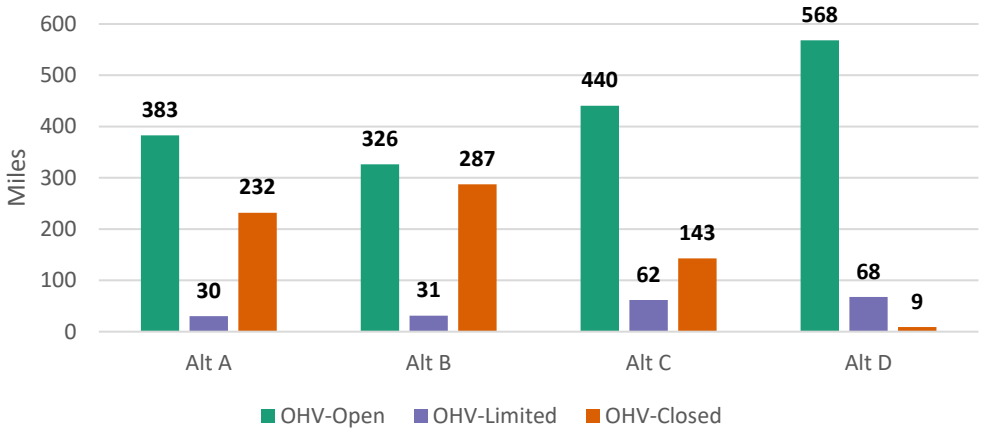


Table 3-34: Miles of Evaluated Routes in Visual Resource Inventory Classes

		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 I	OHV-Open	66	66	-1	72	+6	75	+9
	OHV-Limited	2	3	+1	2	+0	1	-1
	OHV-Closed	8	8	-0	2	-6	1	-8
VRI Class II	OHV-Open	594	540	-54	684	+90	850	+256
	OHV-Limited	69	38	-31	86	+17	94	+25
	OHV-Closed	295	380	+86	187	-107	14	-281

Table 3-35: Miles of Evaluated Routes in Visual Resource Management 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 I	OHV-Open	209	208	-1	233	+24	259	+50
	OHV-Limited	2	3	+1	4	+2	4	+1
	OHV-Closed	55	54	-0	29	-26	3	-52
VRM Class II	OHV-Open	383	326	-57	440	+58	568	+185
	OHV-Limited	30	31	+1	62	+31	68	+37
	OHV-Closed	232	287	+56	143	-89	9	-223

Alternative A (No Action)

Under Alternative A, there would be no route designation changes in the TMA. In VRI Class I areas, 89% (68 miles) of evaluated routes would remain designated for OHV use; and in VRI Class II areas, 69% (663 miles) of evaluated routes would remain designated for OHV use.

In VRM Class I areas, 79% (211 miles) of evaluated routes would remain designated for OHV use; and in VRM Class II areas, 64% (413 miles) of evaluated routes would remain designated for OHV use. Impacts

to the TMA's visual resources (e.g., degradation of visual quality, disruption of natural appearances, etc.) would reflect a continuation of current designations.

Alternative B (Resource Protection Emphasis)

In VRI Class I areas, Alternative B would designate 69 miles for OHV use, a 1% increase from Alternative A; 7 of the 8 miles designated as OHV-Closed would be earmarked for reclamation. In VRI Class II areas, Alternative B would designate 578 miles for OHV use, a 13% reduction from Alternative A; 306 of the 380 OHV-Closed miles would be earmarked for reclamation.

In VRM Class I areas, Alternative B would designate 211 miles for OHV use, a <1% reduction from Alternative A; 44 of the OHV-Closed miles 54 would be earmarked for reclamation. And in VRM Class II areas, Alternative B would designate 357 miles for OHV use, a 14% reduction from Alternative A; 216 of the 287 OHV-Closed miles would be 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 for OHV use. Given the increase in routes that would be closed to OHV use, 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 I areas, Alternative C would designate 74 miles for OHV use, a 9% increase from Alternative A; 2 of the OHV-Closed miles would be earmarked for reclamation. In VRI Class II areas, Alternative C would designate 770 miles for OHV use, a 16% increase from Alternative A; 146 of the 187 OHV-Closed miles would be earmarked for reclamation.

In VRM Class I areas, Alternative C would designate 237 miles for OHV use, a 12% increase from Alternative A; 23 of the 29 OHV-Closed miles would be earmarked for reclamation. And in VRM Class II areas, Alternative C would designate 502 miles for OHV use, a 22% increase from Alternative A; 110 of the 143 OHV-Closed miles would be 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 for OHV use. Despite the miles of routes designated as OHV-Closed, and given the increase in routes that would be designated for OHV use, Alternative C's potential for OHV use-related impacts to the TMA's visual resources would be higher than Alternatives A and B but lower than Alternative D.

Alternative D (Access Emphasis)

In VRI Class I areas, Alternative D would designate 76 miles for OHV use, a 12% increase from Alternative A. In VRI Class II areas, Alternative D would designate 944 miles for OHV use, a 42% increase from Alternative A; 10 of the 13 OHV-Closed miles would be earmarked for reclamation.

In VRM Class I areas, Alternative D would designate 263 miles for OHV use, a 25% increase from Alternative A; 2 of the 3 OHV-Closed miles would be earmarked for reclamation. And in VRM Class II areas, Alternative D would designate 636 miles for OHV use, a 54% increase from Alternative A; 8 of the 9 OHV-Closed miles would be 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 for OHV use. Despite the miles of routes that would be designated as OHV-Closed, and given the increase in routes that would be designated for OHV use, Alternative D's potential for OHV use-related impacts to the TMA's visual resources would be the highest of any alternative.

Cumulative Effects

Cumulative activities contribute changes to form, line, color, and character of the landscape as previously discussed in the Affected Environment (Section 3.3.7.1). Alternatives A-D contribute the effects listed previously in Environmental Effects Analysis. All evaluated routes were determined to exist regardless of a previous designation, so to some extent every evaluated route already impacts visual resources in the TMA. To a different degree, each action alternative would reduce overall impacts to visual resources when a closed route is reclaimed.

3.3.8 WATER RESOURCES

Issue 10: How would the travel network alternatives impact water quality, hydrology, and riparian areas within the TMA?

The impact analysis area for water quality, riparian areas, and wetlands includes twenty HUC-10 watersheds encompassing the TMA. This covers approximately 2,846,706 acres. This boundary was chosen because it reflects the hydrological system within the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural resources.

3.3.8.1 Affected Environment

The watershed analysis area contains perennial streams, intermittent and ephemeral drainages, and wetlands. Their hydrologic functions include moving water, sediment, and nutrients. In the analysis area, spring runoff from snowpack in areas of higher elevation and brief, intense late-summer storms control the hydrologic conditions. Existing routes have intersected, channeled, and/or rerouted these perennial streams, intermittent and ephemeral drainages, and wetlands resulting in rills and gullies. Travel routes serve as water conduits that direct contaminants and sediment into stream systems and riparian areas during runoff events (Miniat et al. 2019, Ouren et al. 2007). Travel routes parallel to or within the active channel can reduce channel meanders which naturally reduce flood energy. They can also cause geomorphic changes to bank angle, bank stability, channel width, sinuosity, flood velocities, width/depth ratios, and floodplain connectivity. In some cases, routes may cause artificial flow channels at or near route/stream intersections. Travel routes in areas of erosive soils that are proximate to, or crossing drainages result in higher amounts of sediment (Ouren et al. 2007) (see Section 3.3.5). Sediment and deposits from the intersections, channels, and reroutes carried by the stormwater and runoff can impair water quality in waterways (e.g., transport of saline-laden soil, increase turbidity). Contaminants may include 1,3 butadiene, benzene and ethylbenzene, xylenes, and toluene (Ouren et al. 2007). The stormwater can also carry pollutants from OHVs including heavy metals from brakes, engine wear, and hydrocarbons from lubricating fluids. Table 3-36 lists the perennial streams within the TMA (USGS 2021). Figure 3-18 shows the number of perennial stream crossings by crossing type. The nine bridge crossings in the TMA (4 are on BLM-managed lands) have less impact upon water resources and aquatic life than other kinds of crossings because OHV usage is not coming into direct contact with the water, though higher levels of traffic may occur across bridges.

Muddy Creek[34], the Price River, and the San Rafael River are considered impaired by the Utah Division of Water Quality (UDWQ) and do not meet state water quality standards (UDWQ 2004) for total dissolved solids[35] (TDS). The San Rafael River, which is undergoing active restoration[36], also has

[34] Muddy Creek is known to have a little to no flow through most of the year (USGS Water Data, 2024).
[35] TDS are "all inorganic substances contained in water that can pass through a 2-micron filter" (UW 2008).
[36] See the Restoration and Monitoring Plan for Native Fish and Riparian Vegetation on the San Rafael River, Utah (San Rafael River Restoration Plan) (USU 2013) for details on the San Rafael River and its restoration.

elevated salinity (USU 2013). A Total Maximum Daily Load (TMDL) has been developed by UDWQ to address the impairment. The TMDL states the primary TDS contributors are agricultural irrigation practices, surface runoff, and natural geological loadings (UDWQ 2004).

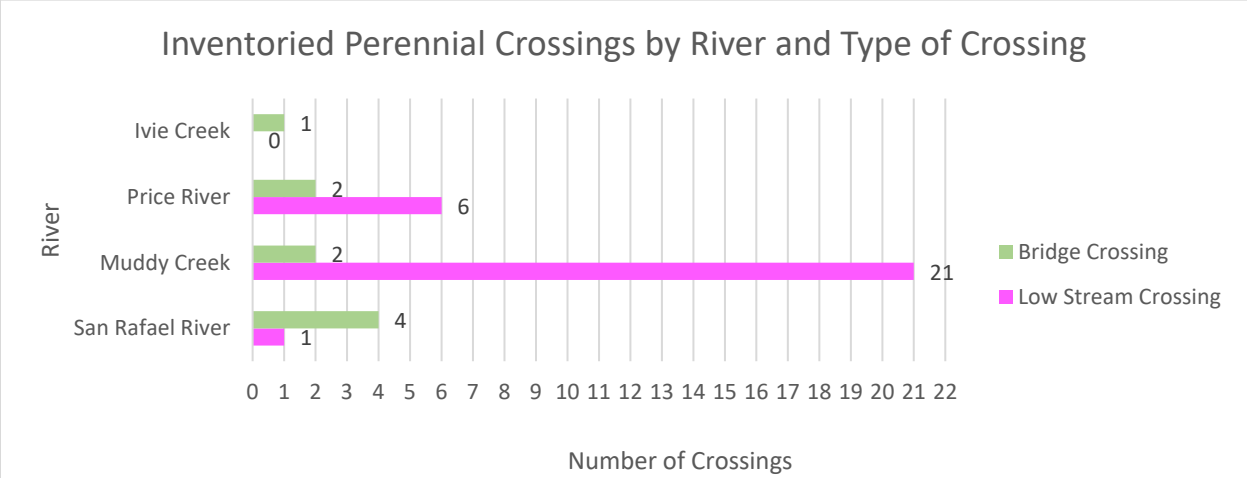
Table 3-36: Perennial Streams

Perennial[1] Stream	Total in Analysis Area (miles)	Total in TMA (miles)
Green River[2]	0	0
San Rafael River	113	71
Price River	151	55
Muddy Creek	117	75
Ivie Creek	22	11
Quitchipah Creek	18	4
Salt Wash	15	3

1 Data used for calculations acquired form National Hydrography data – NHD

2 The analysis area ends at the confluence to the Green River.

Figure 3-18: Inventoried Perennial Crossings



1 Quitchupah Creek and Salt Wash have no crossings on them.

2 All bridge crossings will be open in all alternatives.

3 One bridge crossing over the Price River is outside the proposed TMA but within the Analysis area (Hwy 6 over Price River).

4 4 of the 9 bridges are located on BLM managed land.

Wetlands and riparian areas are scattered throughout the analysis area, but most in the TMA are along the San Rafael River, Price River, and Muddy Creek. Wetlands and riparian areas are natural buffers between uplands and adjacent water bodies. They act as natural filters of nonpoint source pollutants, including sediment, nutrients, pathogens, and metals, to waterbodies, such as rivers, streams, lakes and coastal waters (EPA 2024). Impacts to riparian areas are indicated by declining riparian zone vegetation health, diversity, and density. Therefore, wetland and riparian areas are used by the BLM as watershed condition and land health indicators. Specifically, BLM monitors wetland and riparian areas using Assessment, Inventory, and Monitoring (AIM) Strategy and Proper Functioning Condition (PFC) tools. Approximately 23,534 acres of riparian areas exist on BLM-managed lands within the TMA, and 79 miles of evaluated routes are in 100 meters of riparian areas. Stormwater can deliver sediment and contaminants to riparian and wetland areas, resulting in decreases in riparian and wetland health. Redirection of surface water or compaction from existing roads can result in soil desiccation and riparian vegetation dusting.

Cumulative actions found in the analysis area are listed in Section 3.2.

- Use of travel routes can perpetuate runoff from impervious route surfaces, redirection of water, sedimentation, and contaminants.
- Livestock grazing results in wetland and riparian vegetation trampling, soil compaction, and sedimentation.
- Farmland agricultural practices (see Table 1-4), utilities, and water developments result in sedimentation, salinity, and redirection of surface water.
- Wildlife habitat management results in water-redirecting activities designed to improve water quality and vegetation health, diversity, and vigor.
- Recreation leads to sedimentation, and contamination.
- Mineral development result in sedimentation, contaminants, and redirection of water.

The analysis area for water quality, riparian areas, and wetlands covers approximately 2,846,706 acres including developed cities, towns, and farmlands, while the proposed network alternatives are on 1,149,016 acres (40% of the analysis area) which are relatively undeveloped. The other 60% of the analysis area contains most of the above-mentioned cumulative actions.

3.3.8.2 Environmental Effects Analysis

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

- Routes identified in the analysis either directly cross a riparian area, intermittent, or perennial stream, or are located within 100 meters of riparian areas.
- OHV-Closed designations in and near riparian areas and streams would eliminate OHV effects to water resources from those closed routes.
- Maintenance under this TMP will be appropriate to the class of road to ensure navigability for designated routes without changing the character, function, or recreation experience the route provides.
- Routes not armored, culverted, or bridged at stream crossings can cause greater impacts per use than routes that are armored, culverted, or bridged, though those routes tend to have lower use levels.

Evaluated routes in the TMA cross perennial streams at 33 locations and intermittent streams[37] at 2,305 locations. All bridge crossings will be open in all the alternatives.

Table 3-39 shows the number of perennial stream low water crossings in each alternative.

Figure 3-19, Figure 3-20, and Table 3-37 show the number of crossing points on perennial or intermittent streams by alternative and by route designation.

[37] The EPA (EPA 2008) definition of intermittent stream is a stream where portions flow continuously only at certain times of the year, for example when it receives water from a spring, ground-water source or from a surface source, such as melting snow (i.e. seasonal). At low flow there may be dry segments alternating with flowing segments. The EPA definition of ephemeral stream is a stream or portion of a stream which flows briefly in direct response to precipitation in the immediate vicinity, and whose channel is at all times above the groundwater reservoir. The BLM used the National Hydrography Dataset for the route inventory for its impact calculations. The National Hydrography Dataset identifies Little Wild Horse Canyon, Buckhorn Wash, and Bell Canyon as intermittent streams. Per BLM specialists' knowledge of these areas those streams match the EPA's definition of ephemeral. Therefore, the number of intermittent crossings is overestimated and most useful as a comparison between alternatives.

Figure 3-21 and Table 3-38 show the miles of evaluated routes within 100 meters of riparian areas by alternative and by route designation.

Figure 3-22 shows the number of stream crossings and type open on the Price River by Alternative.

Figure 3-23 shows the number of stream crossings and type open on Muddy Creek by Alternative.

Figure 3-24 shows the number of stream crossings and type open on the San Rafael River by Alternative.

Table 3-39 shows the number of OHV-Open low water crossings for Price River, Muddy Creek and San Rafael River by Alternative.

Under Alternative D, 15 of the 21 crossings within Muddy Creek are OHV-Limited to single-track vehicles (Figure 3-23).

The nature of the effects will be the same across alternatives, however the magnitude and location of the routes will vary. The magnitude can be judged using Figure 3-19 through Figure 3-24 and Table 3-37 through Table 3-39. The location of the effects can be judged using Map 12.

Specifically, OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Section H.4 in Appendix H) can remove soil-stabilizing agents, such as vegetative cover, soil crusts, and woody debris. TMP implementation activities that could result in compaction or increased sediment or contaminant load include route maintenance (e.g., surface and ditch blading.), reclamation (e.g., raking), and sign placement (e.g., digging post holes). These effects would occur in very short time frames (estimated to be one to four days' worth of work, though it may be longer for longer routes). TMP implementation activities that could reduce compaction, sediment, or contaminant load include sign placement directing OHVs to routes that are less disruptive to waterways, and reclamation. These effects would occur over longer timeframes.

Best management practices (BMPs) recommended by the TMDL for Muddy Creek and the Price and San Rafael Rivers include closing routes that are eroded and limiting OHV use to non-sensitive areas away from streams. Alternatives A-D would have varying amounts of routes proximate to streams and riparian areas closed to OHV use. Therefore, all alternatives would implement to differing levels the recommended BMPs for reducing TDS loading in Muddy Creek, the Price River, and the San Rafael River. This in turn may improve the stream's observed/expected bioassessment (a comparison of the observed aquatic macroinvertebrates in the stream to the expected aquatic macroinvertebrates).

Figure 3-19: Number of Evaluated Crossing Points on Perennial Streams (excluding highway crossings)

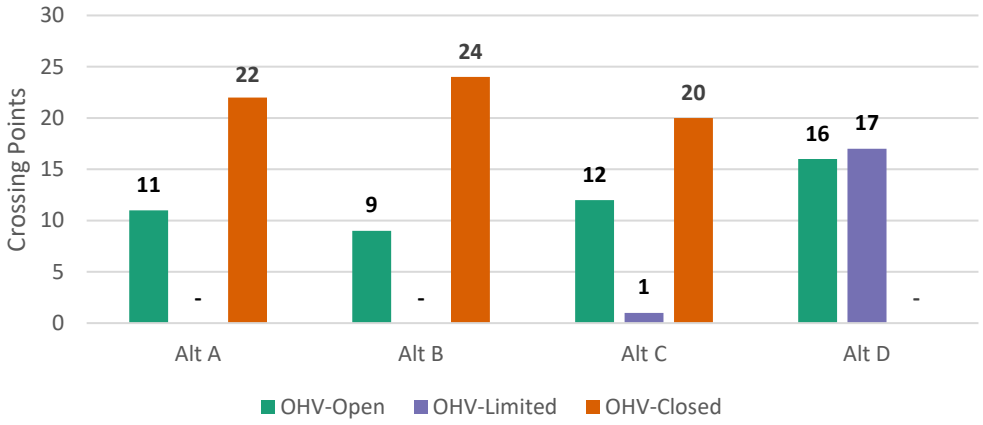


Figure 3-20: Number of Evaluated Crossing Points on Intermittent Streams

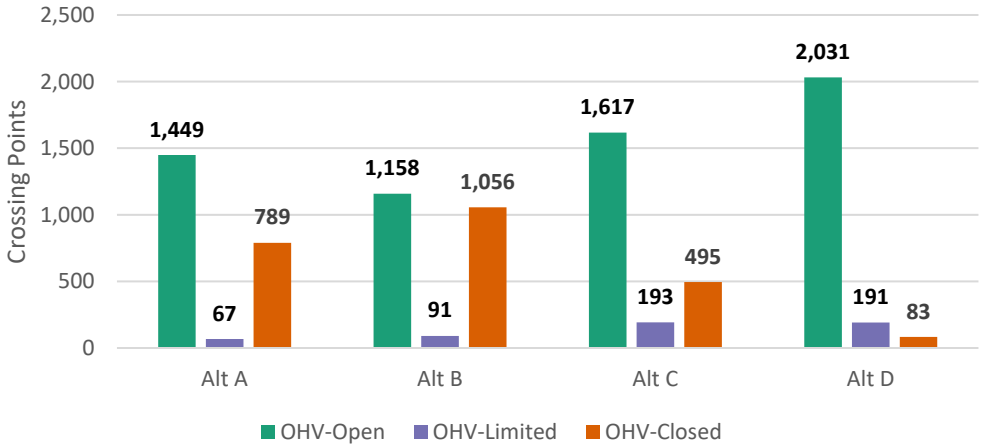


Figure 3-21: Miles of Evaluated Routes in or within 100 Meters of Riparian Areas

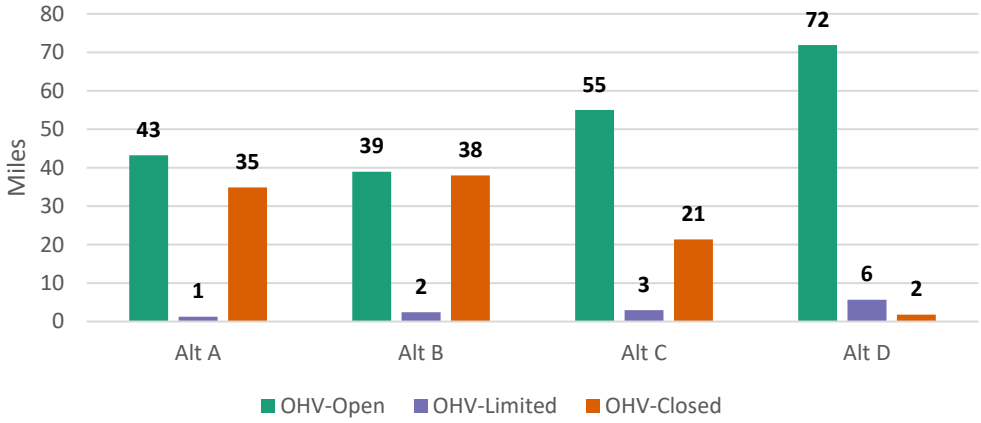


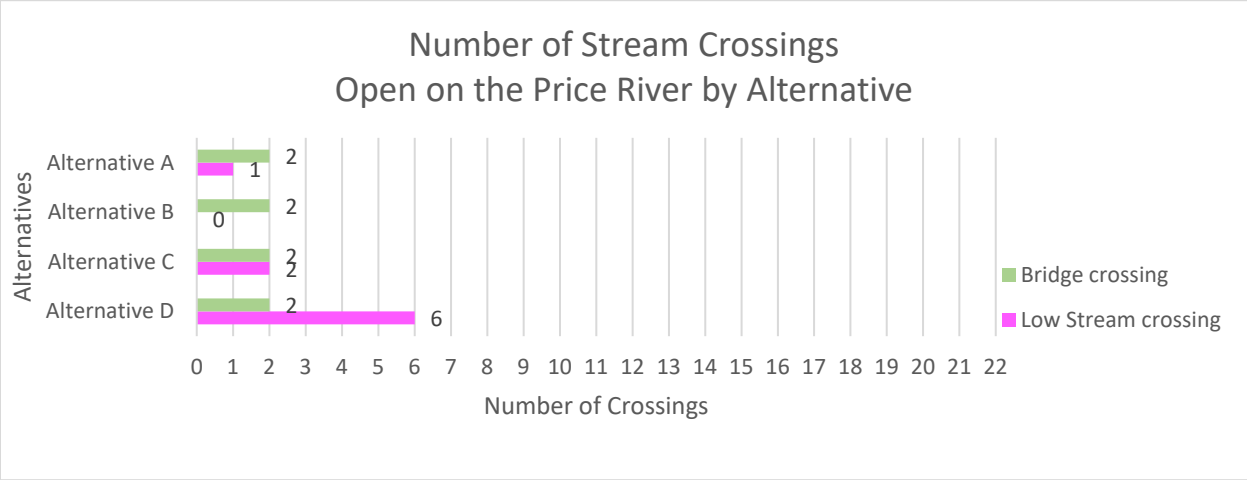
Table 3-37: Number of Crossing Points on Perennial or Intermittent Streams

		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 Crossings	OHV-Open	11	9	-2	12	+1	16	+5
	OHV-Limited	0	0	-	1	+1	17	+17
	OHV- Closed	22	24	+2	20	-2	0	-22
Intermittent Stream Crossings	OHV-Open	1449	1158	-291	1617	+168	2031	+582
	OHV-Limited	67	91	+24	193	+126	191	+124
	OHV- Closed	789	1056	+267	495	-294	83	-706

Table 3-38: Miles of Evaluated Routes within 100 Meters of Riparian Areas

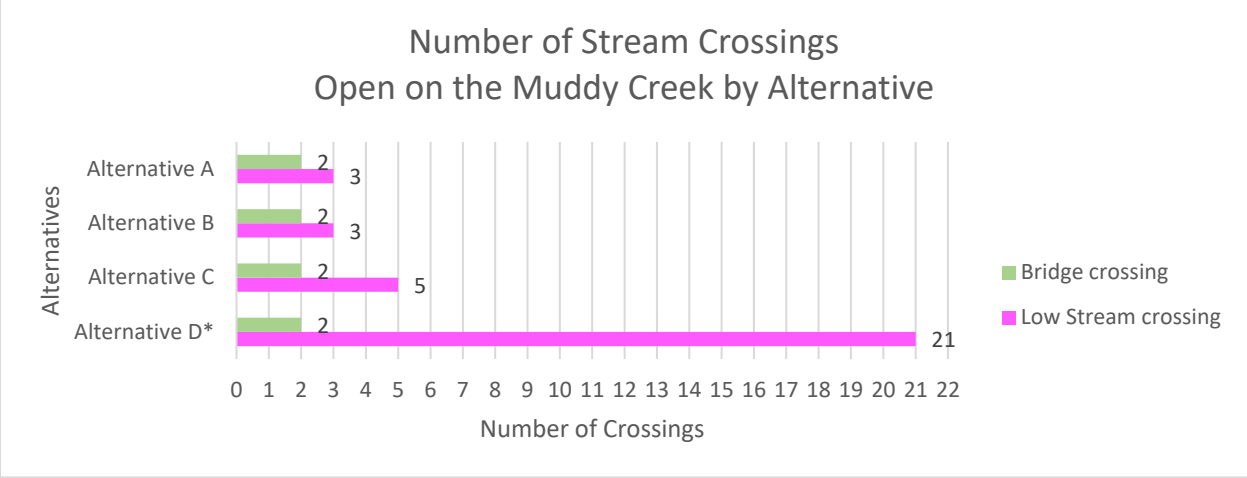
		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Riparian	OHV-Open	43	39	-4	55	+12	72	+29
	OHV-Limited	1	2	+1	3	+2	6	+4
	OHV- Closed	35	38	+3	21	-14	2	-33

Figure 3-22: Number of Stream Crossings Open on the Price River by Alternative



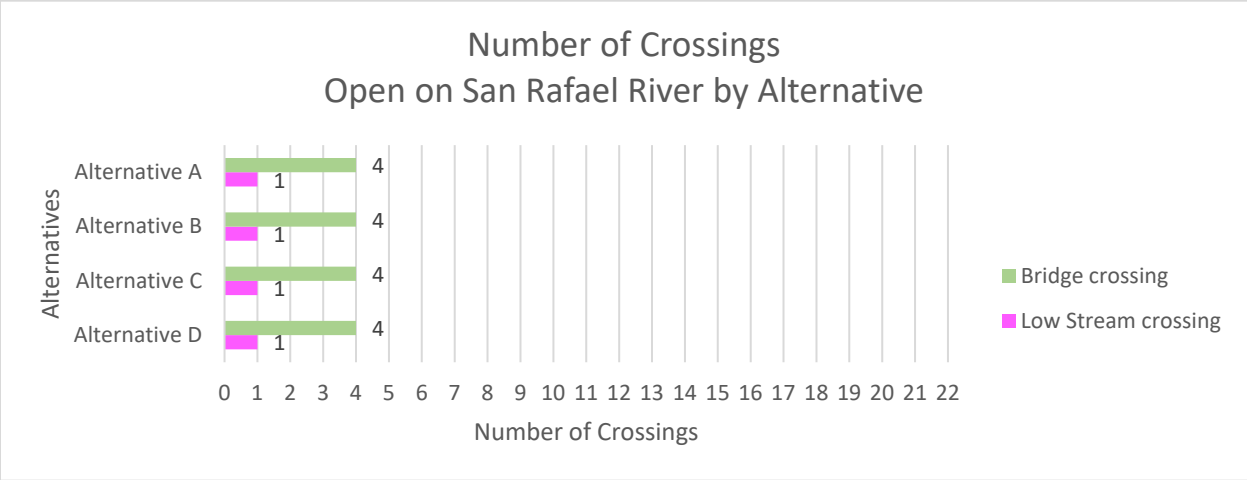
1 Alternative C- 1 of the 2 crossing is limited to motorized single-track route and Alternative D- two crossing are limited to motorized single-track route.

Figure 3-23: Number of Stream Crossings Open on the Muddy Creek by Alternative



1 Alternative D - 15 crossings are limited to motorized single-track route and 1 crossing is located on Private land (County Road 917)

Figure 3-24: Number of Crossings Open on the San Rafael River by Alternative



1 Fuller Bottom Road Crossing is on State Managed Land; therefore, BLM has no authorization on the opening or closing of crossing.

Table 3-39: Number of OHV-Open Low Water Crossings for Price River, Muddy Creek, and San Rafael River by Alternatives

	Alt. A	Percentage of All Low Water Perennial Crossings (28)	Alt. B	Percentage of All Low Water Perennial Crossings (28)	Alt. C	Percentage of All Low Water Perennial Crossings (28)	Alt D	Percentage of All Low Water Perennial Crossings (28)
Price River	1	4%	0	0%	2	7%	6	21%
Muddy Creek	3	11%	3	11%	5	18%	21	75%
San Rafael River	1	4%	1	4%	1	4%	1	4%

Alternative A (No Action)

Under Alternative A, there would be no route designation changes in the TMA. Of the evaluated routes crossing perennial streams in the TMA, 39% (7 routes) are designated for OHV use. Of the evaluated routes crossing intermittent streams, 59% (360 routes) are designated for OHV use. Of the evaluated routes within 100 meters of riparian areas in the TMA, 64% (51 miles) are designated for OHV use. The OHV and associated human use (e.g., 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 and hydrology from ongoing OHV use (e.g., erosion, sedimentation and salination, loss of important streamside and riparian vegetative cover, etc.) would reflect continuation of current designations.

Alternative B (Resource Protection Emphasis)

Under Alternative B, the following would be designated for OHV use: 5 evaluated routes crossing perennial streams (a 2-route reduction from Alternative A), and 236 routes crossing intermittent streams (a 34% reduction compared to Alternative A). Of the evaluated routes in or proximate to riparian areas, Alternative B would designate 41 miles for OHV use, a 19% reduction from Alternative A. 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 quality and hydrology within the TMA because it has the least amount of perennial or intermittent crossings and amount of route miles within 100 meters of riparian areas.

Alternative C (Multiple Use Emphasis)

Under Alternative C, the following would be designated for OHV use: 12 evaluated routes crossing perennial streams (a 5-route increase from Alternative A), and 415 routes crossing intermittent streams (a 15% increase compared to Alternative A). Of the evaluated routes in or proximate to riparian areas, Alternative C would designate 59 miles for OHV use, a 16% increase from Alternative A. 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.

Alternative D (Access Emphasis)

Under Alternative D, the following would be designated for OHV use: all 18 evaluated routes crossing perennial streams (an 11-route increase from Alternative A), and 566 routes crossing intermittent streams (a 57% increase compared to Alternative A). Of the evaluated routes in or proximate to riparian areas, Alternative D would designate 78 miles for OHV use, a 53% increase from Alternative A. 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 the highest potential of any alternative for ongoing OHV-related impacts to water quality and hydrology within the TMA because it has the highest number of perennial or intermittent crossings and route miles within 100 meters of riparian areas.

Cumulative Effects

Cumulative activities contribute effects as previously discussed in the Affected Environment (Section 3.3.8.1). These soil-displacing, soil-compacting, and water-redirecting actions leading to sedimentation, head cutting, and delivery of contaminants to streams and riparian areas resulting in water quality impairment; and decreases in riparian and wetland health. Alternatives A-D contribute the effects listed previously in Environmental Effects Analysis.

3.3.9 WEEDS

Issue 11: How would the travel network alternatives impact the introduction and spread of noxious and invasive weeds?

The analysis area for invasive/noxious weeds is the TMA, because it is the smallest unit which shows all impacts to soils, native vegetation and invasive/ noxious weeds within the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1).

3.3.9.1 Affected Environment

Weeds in the TMA are defined by the Utah Noxious Weed List (Utah Administrative Code 2020), and the Emery County and Sevier County weed control boards. The Boards have both identified Russian olive (*Elaeagnus angustifolia*) as noxious. Additional invasive plants and noxious weeds in the TMA include Canada thistle (*Cirsium arvense*), cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomeratus*), musk thistle (*Carduus nutans*), puncture vine (*Tribulus terrestris*), Russian knapweed (*Acroptilon repens*), and Russian thistle (*Salsola tragus*). The TMA contains small, isolated patches of noxious weeds and widespread invasive species (mainly located along routes and trails). Extensive tamarisk (*Tamarix ramosissima*) and Russian olive infestations exist along the San Rafael River in the TMA, resulting in vegetation communities far removed from their natural riparian vegetation state. San Rafael River restoration efforts have removed extensive tamarisk stands from the TMA, but re-sprouts and secondary weeds remain a concern. For more details on invasive plants and noxious weeds in the TMA, see pages 3-22 to 3-24 of the 2008 Price Proposed RMP/EIS (BLM 2008d) and pages 3-33 to 3-36 of the 2008 Richfield Proposed RMP/EIS (BLM 2008f).

The presence of noxious weeds and invasive species is often related to soil disturbances and loss of native species in those systems. Waterways in the TMA also provide corridors for weed establishment and spread. 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 et al. 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).

Evaluators used multiple geospatial datasets (such as known weed locations and vegetation types) as well as specialist knowledge of the area to identify route-specific weed issues during the route evaluation process because a complete weed geospatial dataset doesn't exist for the TMA. Therefore, soil impacts are estimated using number of routes as a comparison across alternatives. This approach overestimates the effects because one route crosses multiple soil types, so routes are counted more than once. See Table 2-1 for the total mileage of route designations under each alternative, and Table 3-11 for total mileages within certain vegetation types, which can be an indicator of weeds because some types of vegetation are more susceptible to weed invasions. Table 3, below, shows the number of evaluated routes in areas with noxious weeds or invasive vegetation. Of the 2,123 evaluated routes in the TMA, 891 (42% of the network) are in or within ¼ mile of areas with noxious weeds and 1,027 (48% of the network) are in or within ¼ mile of invasive vegetation.

OHV-Closed designations prevent weed introduction or spread from OHVs. OHV-Open or OHV-Limited designations perpetuate weed introduction or spread from OHVs. Route use and surface disturbances from off-route vehicle travel (e.g., passing or parking, particularly along minimally maintained routes, which tend to be narrower) can create additional areas for weeds to establish. Travel network implementation activities that may cause surface disturbance areas where weeds could establish include installing new signs, road maintenance consistent with the character and class of the route, and route reclamation. Routes also provide access for authorized monitoring and treatment of invasive plants and noxious weeds.

Cumulative actions found in the analysis area are listed in Section 3.2. All cumulative actions have the potential to introduce or spread weeds, and some actions include surface disturbance which is susceptible to weed invasion.

3.3.9.2 Environmental Effects Analysis

The following assumptions and methodologies were applied in this analysis of potential effects on weeds from the alternative designations:

- Routes identified in the analysis directly cross known weed infestations.
- 131 miles of routes within the TMA are paved.
- OHV-Closed designations would eliminate OHVs contribution to weed introduction and spread on those routes.
- Maintenance under this TMP will be appropriate to the class of road to ensure navigability for designated routes without changing the character, function, or recreation experience the route provides.

Numbers of routes in areas of noxious weeds and invasive plants is used as indicators of potential OHV route designation impacts on the TMA's weeds (see Figure 3-25, Figure 3-26, and Table 3). The nature of the effects will be the same across alternatives, however the magnitude and location of the routes will vary. The magnitude can be judged using Figure 3-25, Figure 3-26, and Table 3. The location of the effects can be judged using Map 2 through Map 5. OHV use of travel routes can introduce or spread

weeds. TMP implementation activities that could introduce or spread weeds include route maintenance (e.g., surface and ditch blading.), reclamation (e.g., raking), and sign placement (e.g., digging post holes). These effects would occur in very short time frames (estimated to be one to four days' worth of work, though it may be longer for longer routes). TMP implementation activities that could reduce weed spread and introduction include sign placement directing OHVs away from weeds. These effects would occur over longer timeframes.

Figure 3-25: Number of Evaluated Routes within ¼ Mile of Noxious Weeds

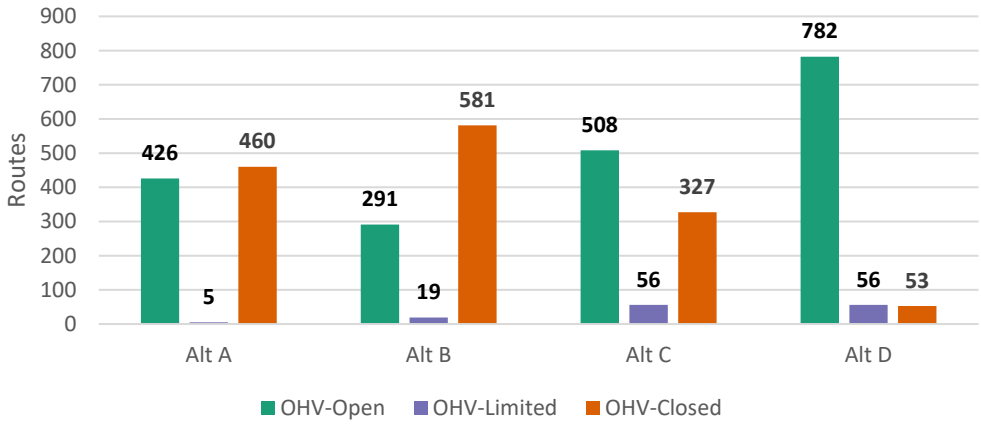


Figure 3-26: Number of Evaluated Routes within ¼ Mile of Invasive Vegetation

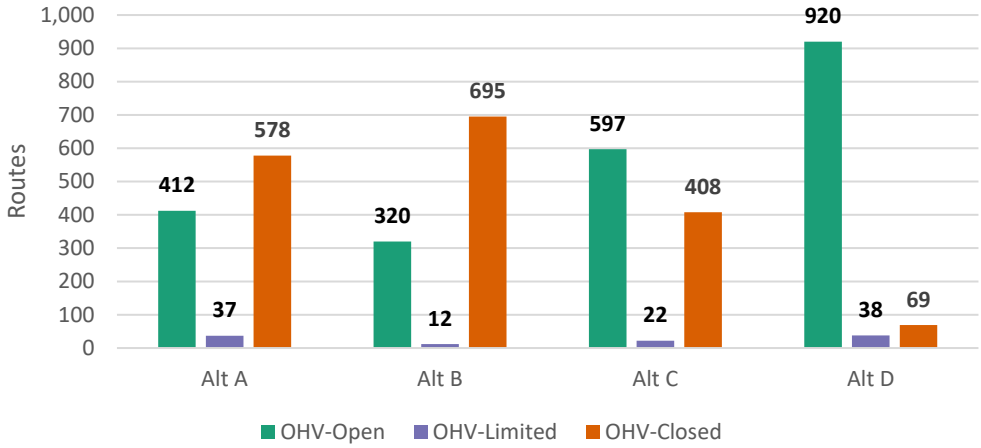


Table 3-40: Number of Evaluated Routes in Areas with Noxious Weeds or Invasive Vegetation

		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)
Noxious weeds	OHV-Open	426	291	-135	508	+82	782	+356
	OHV-Limited	5	19	+14	56	+51	56	+51
	OHV-Closed	460	581	+121	327	-133	53	-407
Invasive vegetation	OHV-Open	412	320	-92	597	+185	920	+508
	OHV-Limited	37	12	-25	22	-15	38	+1
	OHV-Closed	578	695	+117	408	-170	69	-509

Alternative A (No Action)

Under Alternative A, there would be no route designation changes in the TMA. In areas of noxious weeds, 48% of the evaluated routes (431 routes) would remain designated for OHV use under this alternative, and in areas of invasive vegetation, 44% (449 routes) would remain designated for OHV use. Spread of invasive plants and noxious weeds from ongoing OHV use would reflect continuation of current designations.

Alternative B (Resource Protection Emphasis)

Alternative B would reduce the number of evaluated routes designated for OHV use in areas of noxious weeds by 28% (-121 routes) and in areas of invasive vegetation by 26% (-117 routes). Under Alternative B, the same types of effects on weeds from OHV use noted above would be expected to occur on those routes designated OHV-Open or OHV-Limited; however, this alternative would have the overall lowest potential of any alternative for OHV-related weed and invasive species spread.

Alternative C (Multiple Use Emphasis)

Alternative C would increase the number of evaluated routes designated for OHV use in areas of noxious weeds by 31% (+133 routes) and in areas of invasive vegetation by 38% (+170 routes). Under Alternative C, the same types of effects on weeds from OHV use noted above would be expected to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative would have higher potential than Alternatives A and B but lower potential than Alternative D for OHV-related weed and invasive species spread.

Alternative D (Access Emphasis)

Alternative D would increase the number of evaluated routes designated for OHV use in areas of noxious weeds by 94% (+407 routes) and in areas of invasive vegetation by 113% (+509 routes). Under Alternative D, the same types of effects on weeds from OHV use noted above would be expected to occur on those routes designated OHV-Open or OHV-Limited. Overall, this alternative would have the highest potential of any alternative for OHV-related weed and invasive species spread.

Cumulative Effects

Cumulative effects from past, present, and reasonably foreseeable projects and activities on weed spread and introduction includes OHV use of routes and implementation as described in the affected environment.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV use would reflect a continuation of current conditions, and an overall incremental change to weeds within the cumulative effects analysis area is not anticipated.

Alternatives B-D would add route-related impacts where routes are newly designated for OHV use (OHV-Open or OHV-Limited).

3.3.10 WILDLIFE: SPECIAL STATUS FISH (T&E AND BLM SENSITIVE SPECIES)

Issue 12: How would the travel network alternatives impact T&E and BLM Sensitive fish species and habitat within the TMA?

The analysis area for T&E and BLM sensitive fish species[38] is the HUC 10 watershed boundaries within the TMA because it is the smallest unit which shows all impacts to special status species and their habitats within the TMA The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural, wildlife, and ecological resources.

3.3.10.1 ESA Listed Fish Species

T&E fish species found within the TMA include Bonytail (*Gilia elegans*), Colorado Pikeminnow (*Ptychochelilus lucius*), Razorback Sucker (*Xyrauchen texanus)* and Humpback Chub (*Gila cypha*). Details on habitat, threats, and trends for the fish discussed in Table 3 can be found in the Biological Opinion for BLM Resource Management Plan (RMP), Price Field Office (Price RMP Biological Opinion) (USFWS 2008a); the "Special Status Species" and "Fish and Wildlife" sections of the Price Proposed RMP/EIS (BLM 2008d, pages 3-36 to 3-59), and NatureServe Explorer (NSE 2024). Additional habitat, threat, and trend information sources are listed under each species.

Table 3-41: Threatened and Endangered Fish Species and their Habitats

Species	Status	Habitat
Bonytail (*Gila elegans*)	Endangered	The Bonytail was listed as endangered on April 23, 1980 (USFWS 1980). There are no currently self-sustaining populations of Bonytail in the upper Colorado River Basin. Bonytail occupy the Price River and San Rafael River through stocking efforts at release sites in the TMA. When water is present, Bonytail will inhabit the entire stretch of the Price River within the TMA, and a short segment of the lower San Rafael River below the Hatt's Ranch Dam on the eastern edge of the TMA. Bonytail migrate in and out of both river systems from the Green River seasonally for various life stages (USU 2013, USU 2020). Bonytails were being released in the Colorado and Green Rivers and dispersed into both tributaries resulting in direct release sites in both tributaries within the TMA, which may have used these rivers historically. There is no Designated Critical Habitat in the TMA. For more details on habitat, threats, and trends, see page viii of Bonytail (*Gila elegans*) Recovery Goals: Amendment and Supplement to the Bonytail Recovery Plan (USFWS 2002a).

[38] See Section 4.1.2 for information regarding the Section 7 consultation process.

Species	Status	Habitat
Colorado Pikeminnow (*Ptychocheilus lucius*)	Endangered	The Colorado Pikeminnow was federally listed as an endangered species in 1967 (USFWS 1967), before being fully protected by the ESA on January 4, 1974. Colorado Pikeminnow have potential to inhabit the entire stretch of the Price River within the TMA when water is present in the system and a short segment of the lower San Rafael River below the Hatt's Ranch Diversion Dam on the eastern edge of the TMA. Colorado Pikeminnow have migrated in and out of both river systems from the Green River seasonally for various life stages (USU 2013, USU 2020). There is no Designated Critical Habitat in the TMA. 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).
Razorback Sucker (*Xyrauchen texanus*)	Endangered	The Razorback Sucker was designated as endangered on October 23, 1991 (USFWS 1991). The species can inhabit the entire stretch of the Price River within the TMA when water is present in the system and a short segment of the lower San Rafael River below the Hatt's Ranch Diversion Dam on the eastern edge of the TMA. Razorback Sucker migrate in and out of both rivers systems for various life stages (USU 2013, USU 2020). There is no Designated Critical Habitat in the TMA. For more details on habitat, threats, and trends see the Species Status Assessment for the Razorback Sucker *Xyrauchen texanus* (USFWS 2018).
Humpback Chub (*Gila cypha*)	Threatened	The Humpback Chub is a federally listed fish that on January 22, 2020, was downlisted to threatened (USFWS 2020b). The species can inhabit the entire stretch of the Price River within the TMA when there is water and a short segment of the San Rafael River below the Hatt's Ranch Diversion Damon the eastern edge of the TMA. There is no Designated Critical Habitat in the TMA.

3.3.10.2 BLM Sensitive Fish Species

Sensitive fish species found within the TMA include Bluehead Sucker (*Catostomus discobolus*), Flannelmouth Sucker (*Catostomus latipinnis*), and Roundtail Chub (*Gila robusta*). Habitat for these species is in Table 3. For details on habitat, threats, and trends for these BLM Sensitive fish species, see the Range-wide Conservation Agreement and Strategy for Roundtail Chub (*Gila Robusta*), Bluehead Sucker (*Catostomus discobolus*), and Flannelmouth Sucker (*Catostomus latipi*) (UDWR 2006).

Table 3-42: BLM Sensitive Fish Species and their Habitats

Species	Status	Habitat

Species	Status	Habitat
Bluehead Sucker (*Catostomus discobolus*)	BLM sensitive	The Bluehead Sucker occurs in Ivie Creek, Muddy Creek, the Price River, Quitchupah Creek, and the San Rafael River within the TMA. Populations of Bluehead Suckers in the TMA are self-sustaining, but impacts to streambeds, riparian zones, and sediment loading are reducing the ability for Bluehead Suckers to persist within the TMA. The bluehead sucker occurs in low numbers in Muddy Creek largely depending on immigration from downstream sources during years of above-average flow.
Flannelmouth Sucker (*Catostomus latipinnis*)	BLM sensitive	The Flannelmouth Sucker occurs in Ivie Creek, Muddy Creek, the Price River, Quitchupah Creek, and the San Rafael River. In the Price and San Rafael River within the TMA Flannelmouth Sucker are self-sustaining. Fish continue to persist even in between drying periods on both river systems. Immigration from the Green River continues to contribute to the populations in both rivers and continue their presence within the TMA. The Flannelmouth Sucker occurs in low numbers in Muddy Creek depending largely on immigration from downstream sources during years of above-average flow.
Roundtail Chub (*Gila robusta*)	BLM sensitive	Roundtail Chub only occur in the San Rafael River where they are self-sustaining in the upper portions above the Hatt's Ranch Dam. Roundtail Chub have been observed to occupy canyon bound waters with deep pools and eddies, similar to what is available in the San Rafael Swell. Roundtail Chub have been extirpated from the Price River.

3.3.10.3 Affected Environment

The analysis area is the perennial waters in the TMA, which include Ivie Creek, Muddy Creek, the Price River, Quitchupah Creek, Salt Wash, and the San Rafael River. There are a variety of water crossings within the TMA through these perennial streams (see Section 3.3.8 Water Resources). Low water crossings have the most negative impacts to fishes in stream within the TMA. For the number and type of low water crossings in the analysis area, see Section 3.3.8.2. Human activity such as public route use, sign installation, route maintenance, roadside parking, and passing results in fish and fish habitat impacts. Use of travel routes in this TMA alters the physical or chemical habitat, and may cause mortality from impacting spawning habitat, spawning activity, and vehicle strikes at crossings. OHV use, maintenance activities, parking, and passing in or near streams can increase erosion, sedimentation, salinity, streambed compaction, and contaminant delivery into habitat for special status fishes. Upland travel routes can also be a source and a conduit for OHV-related contaminants and sediment. OHV use during wet periods can result in surface rutting or head-cutting, particularly in washes or streams. Erosion and head-cutting can lead to channel incision and subsequent lowering of the water table, ultimately causing streams to lose connectivity to 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. Deposition and aggradation within critical side-channel and backwater habitat can lead to the degradation or eventual loss of important nursery habitats. Colonization of newly deposited sediment increases invasive woody species (e.g., tamarisk, Russian olive) ultimately furthering the impact on important riparian, backwater, and side-channel habitats. In some cases, important gravel

and cobble substrates may be buried in finer sediments resulting to streambed compaction. Route networks with open or limited designations can perpetuate OHV use-related effects.

3.3.10.4 Environmental Effects Analysis

The nature of the impacts of Alternatives A through D are the same as are currently occurring. Open and Limited designations perpetuate OHV effects. Closed designations eliminate the OHV effects. Alternative B has fewer open roads with associated noise and habitat impacts. Alternatives C and D have respectively more roads with associated impacts to fish and habitats from erosion and water crossings. The effects will occur for the lifetime of the route designations, assumed to be long term. Short term effects would be the maintenance that occurs on the closed routes. Table 3 shows the difference in the magnitude of the impacts between the alternatives through acres of habitat in the TMA within 100 meters of evaluated routes as an impact indicator. The other variation between the alternatives is which routes are open, as displayed in the alternative maps (see Map 2 – Map 5 in Appendix B). Habitat areas are determined from the best available data for each species, including data from USFWS, UDWR, USGS, and BLM.

Table 3-43: Acres of Special Status Fish Habitat within 100-Meter Buffer of OHV-Open or OHV-Limited Routes by Alternative

Species	Conservation Status	Acres of Habitat in TMA	Alternative A Area of Impact (Acres)	Alternative B Area of Impact (Acres)	Alternative C Area of Impact (Acres)	Alternative D Area of Impact (Acres)
ESA Listed Fish Species						
Colorado Pikeminnow	Endangered	11,831	1,039	345	1,878	2,623
Bonytail	Endangered	848	115	90	126	130
Razorback Sucker	Endangered	848	115	90	126	130
Humpback Chub	Threatened	-	-	-	-	-
BLM Sensitive Fish Species						
Flannelmouth Sucker	BLM Sensitive	7,221	398	200	533	890
Bluehead Sucker	BLM Sensitive	7,100	398	200	533	890
Roundtail Chub	BLM Sensitive	6,814	378	187	519	877

Alternative A (No Action)

Under Alternative A, the effects described previously and quantified in Table 3 would continue to occur on those routes designated OHV-Open. Under Alternative A, perennial stream effects would continue in designated OHV-Open routes. Low water crossings would continue to impact favorable habitat for fishes in all the perennial streams in the TMA. Sedimentation, salinity, riparian habitat degradation and streambed compaction would continue to occur and impact 115 acres of habitat available to sensitive species.

Alternative B (Resource Protection Emphasis)

Under Alternative B, routes with low water crossings known to have direct resource conflicts for fish species were closed to the extent possible. The Alternative B travel network would reduce acres of impacts compared to Alternative A. Low water crossings on the Price and San Rafael River would be reduced. The effects described above would occur on those routes designated OHV-Open or OHV-Limited, though at a reduced magnitude and on fewer routes. Alternative B would have the lowest potential of any alternative for OHV use-related impacts to habitat for each special status wildlife species in the TMA.

Alternative C (Multiple Use Emphasis)

Under Alternative C, some routes with known direct resource conflicts for fish species were closed. The Alternative C travel network would increase acres of impacts compared to 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 at an increased magnitude and on more routes.

Alternative D (Access Emphasis)

Under Alternative D, the travel network acreage increases compared to Alternative A. The effects described above would occur on those routes designated OHV-Open or OHV-Limited. Alternative D would have the highest potential of any alternative for OHV use-related impacts to habitat for fish species in the TMA.

Cumulative Effects

The past, present and foreseeable trends and activities listed in Section 3.2 that occur within the analysis area accumulate OHV-related effects to fish species including erosion, sedimentation, head cutting, and delivery of contaminants such as saline soil sediments into waterways, riparian and wetlands areas, and other surface waters. Redirection of surface water or compaction can result in soil desiccation and riparian vegetation dusting or destruction. These impacts result in water quality impairment, decreases in riparian and wetland health, and degradation of fish habitat. The incremental effects of the alternatives are described in Table 3, above.

3.3.11 WILDLIFE: SPECIAL STATUS TERRESTRIAL SPECIES (T&E AND BLM SENSITIVE SPECIES)

Issue 13: How would the route network alternatives impact federally listed, candidate, and select BLM Sensitive wildlife species and their habitat within the TMA?

The analysis area for Wildlife: Special Status Species (T&E and Select BLM Sensitive Species) is the entire TMA because it is the smallest unit which shows all impacts to special status species and their habitats within the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural, wildlife, and ecological resources.

3.3.11.1 Affected Environment

Threatened and Endangered Animal Species

The animal species which have the potential to occur in the TMA and are listed as Threatened or Endangered under the ESA and their habitats are summarized below. 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 a Biological Resource Evaluation developed by Price and Richfield BLM resource staff, the "Special Status Species" sections of the 2008 Price Proposed RMP/EIS (BLM 2008d, pages 3-36 to 3-49) and the 2008 Richfield Proposed RMP/EIS (BLM 2008f, pages 3-49 to 3-69), the 2008 Price RMP Biological Opinion (USFWS 2008a), and the 2008 Richfield RMP Biological Opinion (USFWS 2008b).

Table 3-44: Threatened and Endangered Animal Species and Their Habitats

Species	Status	Affected Environment

Species	Status	Affected Environment
Mexican Spotted Owl (*Strix occidentalis lucida*)	**Threatened**	The analysis area for Mexican spotted owl is all high-value modeled habitat within the TMA[39]. The Mexican Spotted Owl was listed as threatened on March 16, 1993 (USFWS 1993a). 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). 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 sandstone 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 most of the time spent foraging occurs below the rim (USFWS 2012). No critical habitat is designated in the TMA (USFWS 2004). Three critical habitat units, CP-13, CP-14, and CP-15, totaling 2.43 million acres, are within 6 miles, 7 miles, and 30 miles respectively of the TMA's southern and eastern borders. Within the TMA, approximately 133,165 acres, or 12% of the TMA, is modeled (Wiley 1997 MSO model) as suitable foraging or breeding habitat. Of those 133,165 acres of modeled habitat, roughly 66% (87,931 acres) is within designated wilderness. Though modeled habitat is prevalent throughout the TMA, there are no known detections of Mexican Spotted Owls. However, there has been one deceased owl found near the San Rafael Reef Wilderness in 1993. A 1993 survey recorded call responses from four owl species—Flammulated, Owl, Great Horned Owl, Western Screech, and Northern Saw-whet Owl—but no Mexican Spotted Owls (USFS 1993). Since then, surveys have been performed within the high use recreation areas within the TMA and yielded one occurrence of a Great Horned Owl Therefore, for this analysis, all modeled habitat is assumed to be suitable and occupied.

[39] The BLM coordinated this analysis area with the USFWS.

Species	Status	Affected Environment
Southwestern Willow Flycatcher (*Empidonax trailii extimus*)	**Endangered**	The analysis area for southwestern willow flycatcher is USFWS defined habitat within the TMA[40]. 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 (USFWS 1995a). It is known to nest in various exotic species in the southwest, such as tamarisk and Russian olive. In general, its distribution follows suitable riparian habitat within 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 (Ellis et al. 2009). No critical habitat is designated within the TMA. The nearest critical habitat is approximately 100 miles from the TMA to the southwest on the Paria River and approximately 100 miles from the TMA to the southeast on the San Juan River. However, there is USFWS suitable habitat near Goblin Valley State Park.
Yellow-billed Cuckoo (*Coccyzus americanus*)	**Threatened**	The analysis area for yellow billed cuckoo is a 100-meter buffer around mapped riparian areas within the TMA[41]. The Western Distinct Population Segment of the Yellow-billed Cuckoo was listed as threatened on October 3, 2014 (USFWS 2014). Though their current distribution in Utah is poorly understood, they appear to be an extremely rare breeder in lowland riparian habitats statewide. No designated critical habitat and no known populations exist within the TMA. The closest critical habitat is on the Green River, approximately 30 miles from the TMA. Suitable habitat within the TMA is limited by dry conditions, narrowness of existing riparian zones, and grazing. There is a possibility of yellow-billed cuckoos to utilize the riparian areas within the TMA as migration corridors.

[40] The BLM coordinated this analysis area with the USFWS.
[41] The BLM coordinated this analysis area with the USFWS.

Species	Status	Affected Environment
Monarch Butterfly (*Danaus plexippus*)	**Candidate**	The analysis area for monarch butterfly is a 100-meter buffer around mapped riparian areas within the TMA[42]. Monarchs rely on milkweed in the for their reproductive success. There are two distinct populations of monarchs in the United States that are split geographically by the Rocky Mountains and have variation in reproductive behavior, wing morphology, flight performance, and disease/parasite resistance (USFWS 2020a). The western population of monarch butterflies and milkweed have been sighted in and around the TMA, though information on the abundance of both monarchs and milkweeds within the TMA is sparse. There are eight species of milkweed that have the potential to occur in the TMA (with one found exclusively within the San Rafael Swell) (UPP 2021), though only four are considered 'desirable' for monarch reproduction (USDA 2014a, 2014b, 2014c, 2014d, 2014e, 2011, 2006). The habitat requirements for each of the eight milkweed species that may occur within the TMA vary widely, from persistently moist soils, to consistently dry. Besides the presence of milkweed for reproduction, the habitat needs of the monarch butterfly are somewhat ambiguous. Monarchs in the western U.S. tend to be associated with rivers and other riparian habitat (Jepsen et al. 2015), which may be especially true in the TMA as vegetation tends be sparse in the drier areas. Additionally, the preferred conditions for two of the four 'desirable' milkweed species includes moist soils (*Asclepias speciosa* and *Asclepias incarnata*) (USDA 2011, 2006).

Select BLM Sensitive Species

The analysis area for select BLM sensitive species is all potential habitat within the TMA because it is the smallest unit that shows all impacts to species within the TMA. Analysis of impacts was done by buffering potential habitat for each species then calculating the total acreage of potential habitat. Buffer distances differed by species and are listed in Table 3. The TMA contains habitat for the following select BLM Sensitive animals: burrowing owl, ferruginous hawk, golden eagle, kit fox, and white-tailed prairie dog. These species were selected for detailed analysis due to their potentially increased sensitivity to OHV use within their habitats.

Public visitation and route use levels within the TMA vary by season. High-visitation months coincide with the spring reproductive seasons. Human activity such as public route use, sign installation, route maintenance, roadside parking, and passing results in mortality, injury, habitat destruction, habitat alteration, and habitat fragmentation (Brooks and Lair 2005, Ouren et al. 2007, Trombulak and Frissell 2000) from collisions with OHVs and destruction of eggs, nests, and burrows by unwitting individuals. Inner-ear bleeding can occur in small mammals exposed to OHV-generated noise (Ouren et al. 2007). Travel routes that go through or are adjacent to nesting, burrowing, or riparian habitat areas are of particular concern. Human activity 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

[42] The BLM coordinated this analysis area with the U.S. FWS.

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 extended, like those resulting from high traffic volumes on a busy holiday. 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). Non-native species spread can reduce native vegetative cover and change the physical and chemical (e.g., 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)) resulting in decreased 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). 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). Extreme weather such as drought, extreme heat or cold, or heavy snowfall exacerbate these effects.

Table 3-45: BLM Sensitive Wildlife Species

Species	Habitat[43]
Birds	
Burrowing Owl (*Athene cunicularia*)	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. This species has known occurrences within the TMA. Within this TMA Burrowing Owls will be closely tied to white-tailed prairie dogs since they predominantly utilize old prairie dog burrows for nesting.
Ferruginous Hawk (*Buteo regalis*)	This species is known to inhabit grasslands, agricultural areas, shrub lands, and the periphery of pinyon-juniper forests, breeding in semiarid open country, typically near prairie dog colonies. Multiple occurrences exist within and around the TMA in Carbon, Emery, and Wayne counties. Additionally, desert shrub and desert grassland vegetation habitat types are often used by this species. USGS (2019) Gap Analysis shows suitable habitat throughout the TMA.
Golden Eagle (*Aquila chrysaetos*)	This species is known to inhabit open and semi-open country especially in hilly or mountainous regions in areas with sufficient mammalian prey base. There are known golden eagle nests recorded within the TMA and UDWR (1997) Gap analysis shows high value habitat across the TMA.
Mammals	
Kit fox (*Vulpes macrotis*)	This species is found in scattered areas throughout Utah and associated with sparsely vegetated arid habitat, primarily greasewood, shadscale, and sagebrush-dominated habitat. Species has been observed across the TMA.

[43] Unless otherwise stated, habitat descriptions come from BLM specialists and NSE 2024.

Species	Habitat[43]
White-tailed prairie dog (*Cynomys leucurus*)	This species is found in much of Wyoming and western Colorado, extending into eastern Utah and a small portion of southern Montana. They require relatively deep, well-drained soils, for development of burrows and inhabit areas with flat to gently rolling slopes in grasslands and high desert scrub. White-tailed prairie dogs can be commonly observed within the TMA, potential habitat is extensive throughout the TMA, and the 2008 Price RMP has designated crucial habitat within the TMA. Prairie dogs are susceptible to mortality events with vehicles as they tend to dig burrows close to roadways.

Further information about these species can be found in the UDWR Wildlife Action Plan 2015-2025 (UDWR 2015), NatureServe Explorer (NSE 2024), and BLM Instruction Memorandum No. UT IM-2019-005. For more details on species-specific travel-related effects, see the 2008 Price Proposed RMP/EIS (BLM 2008d), the 2008 Price Biological Opinion (USFWS 2008a), the 2008 Richfield Proposed RMP/EIS (BLM 2008f), the 2008 Richfield Biological Opinion (USFWS 2008b), the Utah Wildlife Action Plan 2015-2025 (UDWR 2015), the Mexican Spotted Owl Recovery Plan (USFWS 2012), and NatureServe Explorer (NSE 2024).

3.3.11.2 Environmental Effects Analysis

The nature of the impacts of Alternatives A through D are the same as currently occurring. OHV-Open and OHV-Limited designations perpetuate the OHV effects. Closed designations eliminate the OHV effects. Table 3 through Table 3 summarize the effects specific to each BLM sensitive wildlife species present in the TMA. Alternative B has fewer open roads with associated noise and habitat impacts. Alternatives C and D have respectively more roads with associated impacts to wildlife and habitats from noise and route existence. The effects will occur for the lifetime of the route designations, assumed to be long term. Short-term effects would be the maintenance that occurs on the closed routes.

Table 3 and Table 3 show the difference in the magnitude of the impacts between the alternatives. The other variation between the alternatives is which routes are open, as displayed in the alternatives maps (see Map 2 through Map 5 in Appendix B). Habitat areas are determined from the best available data for each species, including data from USFWS, UDWR, USGS, and BLM.

Table 3-46: Acres of ESA Listed Wildlife Potential Habitat Within Species-Specific Buffers of OHV-Open and OHV-Limited Routes by Alternative

Species	Conservation Status	Buffer Distance	Acres of Potential Habitat in TMA	Alternative A Area of Impact (Acres)	Alternative B Area of Impact (Acres)	Alternative C Area of Impact (Acres)	Alternative D Area of Impact (Acres)
T&E Species							
Mexican Spotted Owl*	Threatened	0.5 mile	748,999	296,124	268,438	337,050	376,803
Southwestern Willow Flycatcher	Endangered	0.25 mile	12,418	2,590	2,252	2,398	2,563
Yellow-billed Cuckoo	Threatened	0.25 mile	1,313,353	303,450	262,140	349,844	406,316
Monarch butterfly	Candidate	100 meters	1,313,353	102,514	87,137	121,481	146,451

Note: * Denotes a peer reviewed model was utilized.

Table 3-47: Acres of BLM Select Sensitive Wildlife Potential Habitat Within Species-Specific Buffers of OHV-Open or OHV-Limited Routes by Alternative

Species	Buffer Distance	Acres of Potential Habitat in TMA	Alternative A Area of Impact (Acres)	Alternative B Area of Impact (Acres)	Alternative C Area of Impact (Acres)	Alternative D Area of Impact (Acres)
Birds						
Burrowing Owl	0.25 mile	1,313,353	361,578	315,307	414,962	477,310
Ferruginous Hawk	0.5 mile	716,836	382,590	340,003	424,092	458,206
Golden Eagle	1 mile	1,313,353	633,445	566,352.3	700,277	774,047
Mammals						
Kit fox	40 feet	596,516	28,345	18,292	26,337	29,892
White-tailed prairie dog	660 feet	1,313,353	195,751	167,878	229,290	271,333

Alternative A (No Action)

Under Alternative A, the effects described previously and quantified in Table 3 and Table 3 would continue to occur on those routes designated OHV-Open.

Alternative B (Resource Protection Emphasis)

Under Alternative B, some routes with known direct resource conflicts for T&E and special status wildlife species were closed. The Alternative B travel network would reduce acres of impacts compared to Alternative A. The effects described above would occur on those routes designated OHV-Open or OHV-Limited, though at a reduced magnitude and on fewer routes. Alternative B would have the lowest potential of any alternative for OHV use-related impacts to habitat for each special status wildlife species in the TMA.

Alternative C (Multiple Use Emphasis)

Under Alternative C, some routes with known direct resource conflicts for T&E and special status wildlife were closed. The Alternative C travel network would increase acres of impacts compared to 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 at an increased magnitude and on more routes.

Alternative D (Access Emphasis)

Under Alternative D, the travel network acreage increases compared to Alternative A. The effects described above would occur on those routes designated OHV-Open or OHV-Limited. Alternative D would have the highest potential of any alternative for OHV use-related impacts to habitat for special status terrestrial wildlife species in the TMA.

Cumulative Effects

The past, present and foreseeable trends and activities listed in Section 3.1 that occur within the TMA accumulate human activity-related effects to T&E and select BLM sensitive wildlife species including disturbance or displacement; loss of prey species; reduced reproductive success; alterations in species richness and community composition; burrowing, brooding, and foraging habitat; mortality; and habitat fragmentation. The establishment and spread of invasive species and noxious weeds associated with those activities also compete with these T&E and special status species and their habitats. The incremental effects of the alternatives are described in Table 3 and Table 3 above.

4 CONSULTATION AND COORDINATION

4.1 CONSULTATION

4.1.1 NATIONAL HISTORIC PRESERVATION ACT (NHPA) SECTION 106

The BLM conducted 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 further documented in Appendix E.

4.1.1.1 Tribal Consultation

Tribal consultation was initiated through the NHPA Section 106 consultation process, described at 36 CFR § 800 and directed by the Travel PA.

Tribal consultation for this plan is ongoing but will be completed prior to a Decision being reached.

4.1.1.2 Other Consulting Parties

The NHPA and the Travel PA directs the BLM to invite parties who may have a demonstrated interest in the undertaking to participate in consultation. Confirmation of other consulting parties is ongoing.

4.1.2 ENDANGERED SPECIES ACT SECTION 7

The BLM has coordinated with the U.S. FWS to determine analysis areas for listed species. Coordination and communication with the USFWS is ongoing. Consultation will be completed before a Decision is reached.

4.2 PUBLIC INVOLVEMENT

The BLM held a public scoping period for this plan. See Section 1.6 and this plan's Scoping Report on this plan's ePlanning page for a summary of public scoping.

In accordance with the Settlement Agreement requirements, the BLM released the preliminary alternatives, the scoping report, the baseline monitoring report, and the preliminary route reports to the public on February 22, 2024.

The public comment period on the Draft EA will provide the public an opportunity to review the proposed alternatives and environmental analysis. In accordance with 40 CFR § 1503.4, public comments will be considered and used to update information in the EA, as appropriate, including alternatives.

4.2.1 COOPERATOR INPUT

An Emery County public lands administrator and a Sevier County commissioner participated in the route evaluation process described in Section 2.1. Cooperating Agencies involved with this plan included Emery County, Sevier County, the Utah Trust Lands Administration (TLA), and the State of Utah Public Lands Policy Coordinating Office (PLPCO).

The BLM released the preliminary alternatives, the scoping report, the baseline monitoring report, and the preliminary route reports to the cooperating agencies on February 8, 2024. Designations on roads that cross BLM office boundaries were coordinated with the adjacent offices.

4.3 List of Preparers

4.3.1 Bureau of Land Management

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

Name	Title
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Blake Baker	Outdoor Recreation Planner, Price Field Office
Sarah Baldwin	Wildlife Biologist, Price Field Office
Taylor Benson	Geologist, Price Field Office
Jason Carlile	Rangeland Management Specialist, Price Field Office
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Joe Chigbrow	Wildlife Biologist, Richfield Field Office
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Mark Dean	Hydrologist, Richfield Field Office
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Emily Lessner	Physical Scientist (Paleontology), Canyon Country & Green River District Office
Sam Marolt	Geologist, Richfield Field Office
Jaydon Mead	Outdoor Recreation Planner, Price Field Office
Holly Mitchell	Hydrologist, Green River District
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Bill Stevens	Outdoor Recreation Planner, Moab Field Office
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4.3.2 ADVANCED RESOURCE SOLUTIONS, INC. (ARS)

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

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

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APPENDIX A ISSUES ANALYZED IN BRIEF

The following issues are analyzed in brief because they do not relate to how the proposed action or alternatives respond to the purpose and need or they have no potential for significant impacts.

A.1 AIB-1 (AIR QUALITY)

How would the route network alternatives impact air quality in the TMA?

The analysis area is Emery and Sevier counties because the TMA overlaps those counties. The temporal scope of analysis is 20 years (see Section 3.1.1). The counties are designated as unclassified for all National Ambient Air Quality Standards (NAAQS) pollutants. It is assumed that unclassified counties without reported design values have air pollutant concentrations below the NAAQS and good air quality since air monitoring is usually needed only when concentrations exceed 80% of the NAAQS (40 CFR § 58.14 (c)(1)). The Air Quality Index (AQI) is an indicator of overall air quality as it accounts for all criteria air pollutants in a county and is one way to quickly evaluate how clean or polluted the air is. The EPA calculates a daily AQI based on local air monitoring data. The terms "good," "moderate," and "unhealthy" help to interpret the AQI. When the AQI value is in the good range, pollutant concentrations are well below the NAAQS and air pollution poses little or no risk. Moderate AQI values occur when pollution is below but near the NAAQS and voluntary emission reduction measures are encouraged. The AQI is considered unhealthy when the NAAQS are exceeded, and major pollution sources are often required to implement mandatory emission reduction measures. Counties without AQI data (such as Emery and Sevier counties) usually have fewer air pollutant sources and are assumed to have good air quality. A summary for other counties with reported AQI data in the PFO and RFO is reported in Table Appx - 1. The AQI for these counties is considered representative of air quality in Emery and Sevier counties.

Table Appx - 1: AQI Summary Statistics for the Years 2020-2022.

		# of Days When AQI was…			% of Days Rated…		
County	**# Days with AQI**	**Good**	**Moderate**	**Unhealthy**	**Good**	**Moderate**	**Unhealthy**
Carbon	968	835	131	2	86.3%	13.5%	0.2%
Garfield	895	763	130	2	85.3%	14.5%	0.2%
Wayne	566	521	44	1	92.0%	7.8%	0.2%

Source: BLM 2023b

On-route travel has the potential to create emissions of air pollutants from maintenance of routes, vehicle exhaust, and wind erosion. Since many of the routes are unpaved the primary pollutant would be particulate matter (PM_{10} and $PM_{2.5}$). Vehicle exhaust would also produce emissions of nitrogen oxides, sulfur dioxide, and carbon monoxide.

An overall increase in visitors in the area is expected as that has been the trend in recent decades (United States Census Bureau 2023). Emissions of air pollutants are linearly related to vehicle usage which is a function of the number of visitors and vehicle miles traveled. However, changes to the number of visitors in the TMA is unrelated to the action being considered by the BLM, because all alternatives deal with designating existing routes for OHV use. In addition, none of the alternatives would authorize the construction of routes, authorize use of a route that has not already been subject to ongoing use even if such use was unauthorized, add or remove access to major area destinations, authorize events, create or remove an attraction that would draw new visitors, or authorize an action (such as construction) that would involve worker access. Therefore, changes to designation of existing routes (OHV-Open, OHV-Limited, OHV-Closed) is unlikely to change the amount of vehicle miles traveled as visitors are

anticipated to continue to use routes that are open. Route closure could displace vehicle miles traveled by influencing where recreationists decide to recreate (inside or outside of the TMA). However, the BLM does not have data on where recreationists would decide to travel if certain routes were closed. With the number of visitors and vehicle miles traveled anticipated to remain the same between alternatives, emissions would also remain the same.

Dust plumes created by vehicles traveling on unpaved routes may be visible at distances from the routes, thereby affecting views from adjacent public lands. Airborne dust will eventually deposit on vegetation and other objects, but this usually happens within a short distance from routes. As described above, the dust emissions are already occurring and the TMP will not change the affected environment for visibility or deposition.

Based on the existing air quality conditions in the area and the anticipated level of impact as described a detailed emissions inventory and a detailed analysis are not needed. Analyzing emissions would not help make a reasoned choice between alternatives (BLM Handbook H1790-1 section 6.4.1) and would not concentrate on the issues that are truly significant to the action in question (40 CFR § 1500.1(b)) since there would be no emission differences between the alternatives.

A.2 AIB-2 (GREENHOUSE GAS AND CLIMATE CHANGE)

How would greenhouse gas emissions from the route network alternatives contribute to climate change?

Global cumulative greenhouse gas (GHG) emissions contribute to climate change. On-route travel and maintenance have the potential to result in emissions of GHGs from vehicle exhaust. An overall increase in visitors in the area is expected as that has been the trend in recent decades (United States Census Bureau 2023). Emissions of GHGs are linearly related to vehicle usage which is a function of the number of visitors and vehicle miles traveled. However, changes to the number of visitors in the recreation area is unrelated to the action being considered by the BLM, because all alternatives deal with designating existing routes for OHV use. In addition, none of the alternatives would authorize the construction of routes, authorize use of a route that has not already been subject to ongoing use even if such use was unauthorized, add or remove access to major area destinations, authorize events, create or remove an attraction that would draw new visitors, or authorize an action (such as construction) that would involve worker access. Therefore, changes to designation of existing routes (OHV-Open, OHV-Limited or OHV-Closed) is unlikely to change the amount of vehicle miles traveled as visitors are anticipated to continue to use routes that are open. Route closure could displace vehicle miles traveled by influencing where recreationists decide to recreation (inside or outside the TMA). However, the BLM does not have data on where recreationists would decide to travel if certain routes were closed. Since the number of visitors and vehicle miles traveled would be anticipated to remain the same between alternatives, emissions would also remain the same. Based on existing GHG emissions in the area and the anticipated level of impact as described, a detailed emissions inventory and a detailed analysis are not needed. Analyzing GHG emissions would not help make a reasoned choice between alternatives (BLM Handbook H1790-1 Section 6.4.1) and would not concentrate on the issues that are truly significant to the action in question (40 CFR § 1500.1(b) since there would be no emission differences between the alternatives.

A.3 AIB-3 (ACECS)

How would the route network alternatives impact the relevant and important values of ACECs outside of wilderness areas?

The TMA contains all or portions of nine ACECs identified in the 2008 Price RMP: portions of Uranium Mining Districts ACEC, Heritage Sites ACEC, and Rock Art Sites ACEC; and all of Cleveland-Lloyd Dinosaur Quarry ACEC, I-70 Scenic ACEC, Muddy Creek ACEC, San Rafael Canyon ACEC, San Rafael Reef ACEC, and Segers Hole ACEC (see Map 10). The temporal scope of analysis is 20 years (see Section 3.1.1).

- Relevant and important values for the ACECs include scenic quality, cultural and historic values, unique vegetation, and paleontological resources.
- Potential impacts to paleontological resources are analyzed in brief in Section A.8 of Appendix A.
- Potential impacts to cultural and historic resources are analyzed in detail in Section 3.3.1, Cultural Resources.
- Potential impacts to scenic quality are analyzed in detail in Section 3.3.7, Visual Resources.
- Unique and relict vegetation communities are found within the San Rafael Reef ACEC. OHV use within the ACEC is limited to designated routes. The San Rafael Reef ACEC is overlapped by the San Rafael Reef Wilderness Area, where motorized and mechanized travel is excluded. Because of this overlap, routes cannot be designated for OHV use throughout the majority of the ACEC.

While the Old Woman ACEC, within the RFO, falls adjacent to the TMA, the ACEC sets atop an isolated mesa and physical obstructions prevent any route from accessing the area. With this, no impacts are expected. Though not analyzed in a dedicated ACEC section, the proximity of routes to ACECs was recorded and considered by the IDT during route evaluation.

A.4 AIB-4 (SAN RAFAEL SWELL RECREATION AREA)

How would the route network alternatives impact the public purposes of the San Rafael Swell Recreation Area?

The TMA contains all but 6,700 acres of the 216,995-acre San Rafael Swell Recreation Area (Recreation Area), designated in 2019 by the Dingell Act "to provide for the protection, conservation, and enhancement of the recreational, cultural, natural, scenic, wildlife, ecological, historical, and educational resources of the Recreation Area" (Dingell Act, sec. 1221(b)), and that is the analysis area. The temporal scope of analysis is 20 years (see Section 3.1.1).

The Dingell Act calls for the administration of the recreation area in a manner which conserves, protects, and enhances those purposes and allows only other uses which are consistent with them. Grazing of livestock is allowed if established before the date of the Act subject to reasonable regulations needed to comply with the applicable law and the Recreation Area's purposes. Finally, the Recreation Area will be managed in a way that educates the public about the Cold War and historic uranium mines subject to public health and safety protection measures.

Dingell Act, sec. 1222(c) calls for the development of comprehensive management plan (Management Plan) for the Recreation Area. It also states in Section 1222(d) that motorized vehicles, except those being used for authorized purposes, shall be permitted only on routes designated in the Management Plan for use by motorized vehicles. The Recreation Area Management Plan is forthcoming, and if the resulting plan requires any adjustment to route designations made in this TMP, BLM will do so, as appropriate, once the Management Plan is complete.

There are 616 miles of evaluated travel routes within this newly established recreation area that provide access to the recreational, cultural, natural, scenic, wildlife, ecological, historical, and educational resources of the Recreation Area that the Dingell Act requires the BLM to conserve, protect, and enhance (sec. 1221(b)). Per Section 1221(d), motor vehicles are to be permitted only on designated routes and no new permanent or temporary motor vehicle routes are to be constructed. Existing roads may be maintained, repaired, and rerouted as needed to protect public safety, maintain accessibility, and protect resources. Only routes which physically exist on the ground (open or closed) were evaluated for this plan; since new route construction or reroutes are not proposed under any alternative, the adopted travel plan will conform with this section of the Dingell Act.

Potential impacts to cultural and historical resources are analyzed in detail in Section 3.3.1.

Potential impacts to natural and ecological resources are analyzed in brief (sensitive plant species, AIB-14) and in detail in Section 3.3.3 (native vegetation), Section 3.3.5 (soils), Section 3.3.6 (special status plants), Section 3.3.8 (water resources), and Section 3.3.9 (weeds).

Potential impacts to visual resources are analyzed in detail in Section 3.3.7.

Potential impacts to wildlife are analyzed in brief (sensitive wildlife species, big game and upland game, AIB-18 and AIB-19) and in detail in Section 3.3.10 (special status fish), and Section 3.3.11 (other special status species).

A.5 AIB-5 (WILDERNESS)

How would the route network alternatives impact wilderness character in designated wilderness areas within the TMA?

The TMA contains the following Wilderness Areas:

- Big Wild Horse Mesa
- Cold Wash
- Devils Canyon
- Eagle Canyon
- Horse Valley
- Little Ocean Draw
- Little Wild Horse Canyon
- Lower Last Chance
- Mexican Mountain
- Middle Wild Horse Mesa
- Muddy Creek
- Reds Canyon,
- San Rafael Reef
- Sids Mountain

These Wilderness Area designations total roughly 427,000 acres (37% of the TMA), and they are the analysis area. The temporal scope of analysis is 20 years (see Section 3.1.1). Under the Dingell Act, Congress designated these areas for inclusion in the National Wilderness Preservation System and directed that the BLM manage them in accordance with the Wilderness Act of 1964. Motorized and mechanized travel is a prohibited use under Section 4(c) of the Wilderness Act; therefore, approximately 294 miles of inventoried routes within wilderness areas were not evaluated because they are closed by Federal statute and cannot be designated under any route network alternative contemplated in the TMP

process. BLM Manual 6340 specifies that any permanent roads within designated wilderness must be associated with a valid existing right, or explicitly identified in the legislation designating that particular wilderness. No routes were identified within these designated wilderness areas that meet the definition of a "permanent road" under BLM wilderness policy (BLM 2012c).

In most cases, Congress chose to draw the boundaries of the wilderness areas within the TMA immediately adjacent to existing routes. In some cases, the wilderness boundary has been drawn around an existing road, creating what are often referred to as "cherry-stem" routes. Per Dingell Act, sec. 1232(e)(2): "The fact that non-wilderness activities or uses can be seen or heard from areas within a wilderness area shall not preclude the conduct of those activities or uses outside the boundary of the wilderness area." Congress also stated at § 1232(e)(1) that it "does not intend for the designation of the wilderness areas to create protective perimeters or buffer zones." This TMP will conform with the Dingell Act's requirements.

Continued OHV use on routes adjacent to wilderness areas within the TMA is likely to create localized and transient impacts to wilderness character for short distances depending on local topography. Temporary auditory and visual impacts to wilderness character can be expected from the passage of OHVs on designated routes. The sights and sounds of motor vehicles adjacent to wilderness may temporarily disturb visitors' experience of outstanding opportunities for solitude or primitive recreation. However, in most circumstances, visitors can venture further into the wilderness out of visual and auditory range of vehicle routes.

OHV use may also impact the undeveloped and natural qualities of wilderness character through user-created route widening or braiding (to avoid travel hazards) that may encroach beyond a wilderness boundary. OHV use near a wilderness boundary may also introduce noxious weeds, impacting the natural quality of wilderness. The passage of vehicles may also impact the natural quality by disturbing or causing injury to vegetation or wildlife. Unauthorized vehicle incursions or dispersed camping in wilderness may also occur from time to time creating new surface disturbances that impact the undeveloped and natural qualities. Other potential human impacts in wilderness can occur near travel routes from human waste, litter and trash dumping, hazardous fluid leaks, woodcutting, target shooting, vandalism, wildfires, etc., resulting in impacts to naturalness and supplemental values such as cultural sites, scenery, wildlife, geology, paleontology, or scientific values.

In remote arid desert regions like the TMA, OHV routes adjacent to wilderness areas also provide crucial access for realizing the public purposes of wilderness, including recreational, scenic, scientific, education, conservation, and historic uses. The travel network within the TMA provides important public access to wilderness trailheads, range improvements, and river put-ins or take-outs for supporting (e.g., transporting gear) backpacking, climbing, canyoneering, equestrian riding, river running or other non-motorized activities. The same can be said for authorized livestock grazing or scientific research within wilderness.

With TMP implementation actions and partnership assistance, BLM will continuously monitor OHV use adjacent to wilderness areas within the TMA and reclaim, mitigate, and minimize impacts on wilderness character to the greatest extent practicable. Reclamation of unauthorized OHV use or other unauthorized human-caused surface disturbances in wilderness includes minimum-tool practices such as trash removal, erosion control, mulching, revegetation, signing, and weed eradication. Management actions within wilderness require the preparation of minimum requirements analysis and possibly additional NEPA, as necessary.

Some routes within the TMA have alignment anomalies that appear to show a parallel or cherry-stem route encroaching into a wilderness boundary. These anomalies are the result of inaccuracies in legacy GIS data used to create the legislative wilderness maps. Per the authority granted under the Dingell Act (sec. 1231(b)), the BLM is currently working on a deliberative process of documenting necessary clerical adjustments to GIS data to correct identified wilderness boundary misalignments. The reader should

disregard isolated locations where it may appear that a proposed vehicle route encroaches upon or passes within wilderness boundaries as currently depicted.

A.6 AIB-6 (ENVIRONMENTAL JUSTICE)

How would the route network alternatives impact environmental justice populations?

The analysis area is Carbon and Emery counties because those are the counties most affected by recreation in the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). A review of the recently published BLM FO-level environmental justice reports (BLM 2024) indicates that low-income populations are present in Carbon and Emery counties. The alternatives are not anticipated to impact the number of visitors and vehicle miles traveled within the TMA. Changes to the number of visitors to the recreation area are not directly or indirectly tied to the action being considered by the BLM, because all alternatives deal with designating OHV use on existing routes. In addition, none of the alternatives would authorize the construction of routes, authorize use of a route that has not already been subject to ongoing use even if such use was unauthorized, add or remove access to major area destinations, authorize events, create or remove an attraction that would draw new visitors, or authorize an action (such as construction) that would involve worker access. Therefore, changes to designation of existing routes (open, limited, or closed) is unlikely to affect poverty or minority populations. For this reason, BLM is not carrying this resource forward for detailed analysis. Additionally, there are no past, present or reasonably foreseeable future actions in the planning area, considered cumulatively with the travel plan alternatives, that would have a disproportionately adverse impact on identified environmental justice populations.

A.7 AIB-7 (LIVESTOCK GRAZING)

How would the route network alternatives impact livestock grazing operations within the TMA?

The analysis area is the entire TMA and its 2,161 miles of evaluated routes overlap 61 livestock grazing allotments covering approximately 1,910,977 acres of BLM, TLA and private lands within and outside the TMA (see Map 14). The temporal scope of analysis is 20 years (see Section 3.1.1). A list of affected grazing allotments, acreage, and percent of allotment in the TMA are shown in Table Appx - 2. A total of 811 evaluated routes (38% of the network's routes) provides key access to corrals, fences, gates, mineral supplement locations, tanks/troughs, ponds, springs, wells, watering access, or water haul sites. These routes are utilized by grazing permittees and BLM range staff for compliance checks, monitoring, range improvement inspections, and range improvement project maintenance. Many other routes throughout the TMA are used by permittees to check livestock and by BLM range specialists to conduct compliance inspections. Traffic related to livestock grazing may include semi-trucks, vehicles, horseback, herding along roadways, etc. For overall details on livestock grazing in the TMA, see pages 3-66 to 3-72 of the 2008 Price Proposed RMP/EIS (BLM 2008d) and pages 3-91 to 3-93 of the 2008 Richfield Proposed RMP/EIS (BLM 2008f). For more details on the specific allotments in the TMA, see the reports available through the BLM's Rangeland Administration System (RAS) at https://reports.blm.gov/reports/ras/.

Specifically, OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Section H.4 in Appendix H) may result in could result in conflicts between recreation users and livestock operators (e.g., vandalism to facilities, open gates, OHV collisions with livestock, disturbance, and displacement of livestock from OHV and recreation use, etc.), particularly during seasons with more public OHV use (spring, summer, and fall). The majority of grazing allotments within the TMA are late fall, winter, and early spring use, which reduces the potential occurrence of conflict to a short period in the late fall and early spring. Heavy OHV traffic can directly interfere with cattle truck or water truck access to the allotments or livestock (blocking routes or access gates/corrals for instance). Other potential indirect effects include lost time and revenue associated with repairs or replacement of vandalized range improvements or facilities, displacement of livestock from opened gates and subsequent retrieval, livestock mortality, etc.

Closing or limiting OHV use on a particular route can minimize or eliminate conflicts between the permittee and OHV by removing or reducing the OHV traffic on the route. Closure of a route to OHV use would not close the route to authorized uses such as permittee access to a range facility where the grazing permit authorizes access. BLM authorizations for access to TLA lands for authorized range/livestock management purposes are not impacted by OHV designations resulting from this plan.

TMP implementation activities that could affect livestock grazing include route maintenance (surface and ditch grading and drainage structure replacement or installation, etc.), and sign installations (digging post holes). Sign installation would direct recreation users to their destinations and inform users of allowable uses for a particular route.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV use would reflect a continuation of current conditions, and overall incremental change to rangeland and grazing impacts within the analysis area is not anticipated.

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. Each action alternative would impact rangeland and grazing operations to differing degrees based on the miles of route designated as closed or limited versus open for public OHV use. Opportunity for conflicts among permittees and public OHV users would vary across Alternatives B-D; however, separation between peak seasons of use between the two user groups reduces impacts. Additionally, BLM proposes to manage the selected network through the TMP Implementation Guide (Appendix H), which would clarify the route network and provide structured management and operation through activities including signing, reclamation, and adaptive management protocols. These implementation actions would further reduce the overall impacts to rangeland and grazing operations.

This issue does not warrant further analysis because route designations would not impact permittees or BLM from accessing facilities or locations necessary for rangeland and grazing operations. Under the action alternatives, opportunity for conflicts among permittees and public OHV users would be reduced due to season of peak use and management under the TMP Implementation Guide. There are no past, present, or reasonably foreseeable future actions that would change this conclusion.

Table Appx - 2: Grazing Allotments within TMA

Allotment Number	Allotment Name	GIS Acres	% of Allotment in TMA
00023	Big Pond	42,389	100
35004	Black Dragon	54,891	100
34011	Box Flat	26,234	97
55005	Buckhorn	47,156	49
34013	Buckmaster	55,934	37
34016	Calf Canyon	7,561	79
00600	Cathedral	136,551	4
44022	Chimney Rock Flat	46,641	29
34025	Cleveland Summer	40,857	27
25009	Coal Wash	20,715	100
34029	Coon Spring	11,319	28
00602	Deer Peak	10,053	100
34037	Dripping Spring	19,659	100
25017	Dry Wash	9,550	100
35023	Fuller Bottom	13,253	97
35025	Globe Link	7,810	100

Allotment Number	Allotment Name	GIS Acres	% of Allotment in TMA
35026	Hambrick Bottoms	20,704	<1
35027	Head Of Sinbad	14,829	100
15099	Hondo	13,704	100
14136	Huff Bench	5,253	10
34055	Humbug	43,034	92
24056	Icelander	49,564	27
35031	Iron Wash	148,892	63
35033	Jeffery Well	84,914	18
24059	Johnson Huff Hollow	11,441	10
00605	Last Chance	21,376	100
35039	Little Holes	10,477	<5
35041	Lone Tree	121,014	99
24069	Lucky Lemon Flat	10,886	100
00607	M & O	25,575	57
35042	McCarty Canyon	6,069	100
35043	McKay Flat	52,915	100
35044	Mesquite Wash	2,503	100
35045	Mexican Bend	13,789	100
35046	Miller Canyon	3,351	96
35047	Molen Pasture	1,799	100
35048	Molen Tanks	5,350	100
24076	Mounds	23,077	71
00608	Mussentuchit	59,075	100
35051	North Ferron	8,191	100
35054	North Sid & Charley	11,929	100
35055	North Sids Mountain	3,502	100
35056	North Sinbad	42,631	100
25060	Oil Well Flat	42,890	100
35067	Red Canyon	41,318	100
00611	Rock Springs	103,655	97
25073	Saddle Horse Canyon	11,986	100
14134	Sage Flat	5,779	100
25074	Saleratus	25,378	17
15075	Salt Wash	45,055	66
25079	Sorensen	8,296	100
15082	So. Sid And Charley	23,820	100
15080	South Ferron	4,129	100
15083	South Sids Mountain	9,097	100
14110	Summerville	33,272	41
25087	Taylor Flat	43,073	100
05089	Temple Mountain	17,272	100
04114	Victor	9,697	34

Allotment Number	Allotment Name	GIS Acres	% of Allotment in TMA
00613	Wild Horse	94,774	54
00612	Willow Springs	8,034	100
15096	Wood Hollow	17,033	100
Total		**1,910,977**	

A.8 AIB-8 (PALEONTOLOGICAL RESOURCES)

How would the route network alternatives impact paleontological resources within the TMA?

The analysis area is the TMA, because that is the smallest unit containing all the impacts anticipated from the TMP. The temporal scope of analysis is 20 years (see Section 3.1.1). Paleontological resources are defined by the Paleontological Resources Preservation Act of 2009 (PRPA) as the fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth (16 United States Code [U.S.C.] 470aaa[1][c]). PRPA directs the BLM to 'preserve, manage, and protect paleontological resources' (43 CFR § 49.1(a) and 49.30(b)). Collection of vertebrate and other paleontological resources is limited to those holding BLM-issued permits (43 CFR § 49.100(a)), whereas recreational (casual) collection is allowed for common invertebrate and plant paleontological resources (43 CFR § 49.805(a)). Petrified wood, as defined at 30 U.S.C 611, is managed as a mineral resource (P.L. 87.713) and individuals may collect limited quantities of petrified wood (43 CFR Subpart 3620).

Based on a review of published geological maps, the TMA comprises over 50 unique geologic units that were deposited from approximately 360 million years ago during the Carboniferous to the recent, many with high potential for containing paleontological resources. Therefore, a full list of potentially affected geological units is not included in this analysis. Instead, the Potential Fossil Yield Classification (PFYC) system is used, a tool used to assess resource impacts and mitigation needs by providing estimates of the potential for paleontological resources within a geologic unit (BLM PIM 2022-009). The PFYC system is based on numeric classes of 1–5 and unknown (U). A geologic unit identified as PFYC 1 has very low likelihood of containing paleontological resources, whereas a geological unit identified as PFYC 5 is a geologic unit that has a very high likelihood to contain and predictably produces scientifically significant paleontological resources. A class U assignment indicates that there is not enough information available for a formal class assignment. Until additional information is available, and a provisional or formal assignment made, these units should be considered to have paleontological potential. Areas of moderate to very high and unknown PFYC class (3-5, U) should be assessed prior to authorizing land use action. The geologic units on BLM-administered (Federal) lands within the TMA range in PFYC from 1-5 with over three-quarters of the acreage classified as PFYC 3-5 or U and 50% of the acreage classified as PFYC 4-5 or U (See Table Appx - 3 and Map 15). Non-BLM-administered lands within the TMA follow a similar overall trend in percentage of the individual PFYC units but have fewer overall acres.

Table Appx - 3: Acreage within the TMA by Potential Fossil Yield Classification Value and Land Ownership

PFYC	Total Acres	Federal Acres (% of Federal Acres)[1]	State Acres (% of State Acres)	Private Acres (% of Private Acres)
1	2	2 (0%)	0 (0%)	0 (0%)
2	259,330	219,553 (19%)	37,085 (24%)	2,693 (27%)
3	402,481	353,398 (31%)	45,039 (29%)	4,044 (40%)
4	439,416	38,9194 (34%)	4,9134 (32%)	1,088 (11%)
5	142,707	127,335 (11%)	15,065 (10%)	306 (3%)
U	70,474	59,589 (5%)	9,015 (6%)	1,870 (19%)

Totals	1,314,409	1,149,071	155,338	10,001
1 – There are errors in the acreages in this table due to PFYC geospatial data errors such as overlapping classes. The numbers presented do not represent actual impacts, but are useful for comparing impacts across alternatives.				

Systematic paleontological resource surveys have not been conducted for most of the authorized TMA routes. According to previously recorded confidential paleontological locality data managed by the Utah Geological Survey the TMA contains approximately 535 recorded paleontological localities with typical fossils including invertebrates, turtles, dinosaurs, crocodylians, phytosaurs, dinosaur footprints and eggshell, and small mammals from at least 18 different geological units that span from the Carboniferous to possibly the Neogene (Table Appx - 4).

Table Appx - 4: Approximate Numbers of Paleontological Localities Within the TMA by Geological Age

Geological Age	Number of Localities
Neogene	1
Cretaceous	239
Jurassic	215
Triassic/Jurassic	1
Triassic	63
Permian/Triassic	9
Permian	6
Pennsylvanian	1
Total	**535**

Source: Utah Geological Survey confidential locality database. No systematic surveys conducted for this assessment. The best data available were used and they illustrate the lowest number of paleontological localities possible within the TMA.

Long-term use, monitoring, and maintenance of the OHV network within the TMA could impact paleontological resources. Specifically, OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Section H.4 in Appendix H) may result in crushing or other damage to exposed or shallowly buried paleontological resources on or near the routes. Since these actions could increase rates of erosion (see Section 3.3.5), the erosion may also expose buried paleontological resources or cause degradation of already exposed paleontological resources more quickly than would be typical without these actions. OHV access to areas with known paleontological resources or high potential to contain them increases opportunities to view paleontological resources in the field, as well as the authorized removal of paleontological resources by the public through casual collection and paleontologists through permitted survey and surface collection. Documentation of new paleontological localities and individual fossils benefits our understanding of the past life and environments. Fossils collected and curated into a public, federally approved repository provides long term educational, research, and museum experiences for the public. Yet, it also increases the potential for vandalism and unauthorized removal of paleontological resources.

Impact causing actions and impact types are anticipated to be the same for all alternatives, yet the Alternatives vary in intensity of potential impact (Table Appx - 5). Miles of OHV-Open, OHV-Limited, and OHV-Closed routes by alternative that cross PFYC values are provided in Table Appx - 5. The approximate number of paleontological localities within 500 feet of a route by alternative are provided in Table Appx - 6. This distance was used in the analysis to summarize those localities with immediate proximity to the routes. Users may walk from the routes and access additional areas by foot, increasing the distance to 0.25 miles from the routes approximately doubles the number of localities that could be impacted. These impacts would not be direct impacts from OHV use or route maintenance. The more areas accessible by routes increases the potential for both authorized and unauthorized impacts to paleontological resources in these areas and the TMA. Under all alternatives if implementation is

proposed that would include ground disturbance, additional site-specific NEPA may be required before the activity could occur. If paleontological resources are encountered during minimal ground disturbing associated with maintenance activities, the activity would stop, and the BLM would be notified. Following BLM practice, the public would continue to be informed about paleontological resource management which includes casual collection of reasonable amounts of common invertebrate and plants (non-vertebrates), leaving vertebrate and scientifically important non-vertebrate fossils in place and reporting possible paleontological resource discoveries to the BLM.

Table Appx - 5: Miles Crossed by Routes on BLM-Administered Lands by Potential Fossil Yield Classification Value and Alternative

Type by Alternative	PFYC 2	PFYC 3	PFYC 4	PFYC 5	PFYC U
Alternative (Alt) A OHV-Open	371	385	314	160	100
Alternative (Alt) A OHV-Closed	150	245	154	149	33
Alternative (Alt) A OHV-Limited	33	30	13	4	20
Alt B OHV-Open	317	313	266	140	87
Alt B to Alt A OHV-Open	-54	-72	-48	-20	-13
Alt B OHV-Closed	224	311	190	164	60
Alt B to Alt A OHV-Closed	75	66	36	15	27
Alt B OHV-Limited	11	37	25	9	6
Alt B to Alt A OHV-Limited	-21	7	12	5	-14
Alt C OHV-Open	418	418	355	220	115
Alt C to Alt A OHV-Open	47	33	41	59	15
Alt C OHV-Closed	99	158	84	81	32
Alt C to Alt A OHV-Closed	-60	-87	-70	-68	-1
Alt C OHV-Limited	36	85	42	13	5
Alt C to Alt A OHV-Limited	4	55	29	9	-14
Alt D OHV-Open	506	537	436	299	139
Alt D to Alt A OHV-Open	135	153	122	139	39
Alt D OHV-Closed	10	20	6	5	11
Alt D to Alt A OHV-Closed	139	-225	-148	-144	-22
Alt D OHV-Limited	37	103	39	9	3
Alt D to Alt A OHV-Limited	4	73	26	5	-17

Note: None of the routes cross geological units classified as PFYC 1 therefore that value was excluded from this table. Only 1.2 miles of the routes are non-BLM, these are split between State of Utah (0.9 miles) and Private (0.3 miles) and these miles are not included in the table.

Table Appx - 6: Approximate Numbers of Paleontological Localities within 500 Feet of a Route Type by Alternative

Type	Alt A	Alt B	Alt C	Alt D
OHV-Open	125	78	114	155
OHV-Closed	35	78	48	2
OHV-Limited	4	8	2	7
Totals	**164**	**164**	**164**	**164**

Note: Localities are only included once per Alternative. If localities are within 500 feet of more than one type of route they were placed in the Open (or Limited) instead of Closed as access is still possible from one of the routes. Also see Table PALEO 2 for information on data source.

The cumulative impact scenario described in Section 3.2 provides a quantitative overview of cumulative actions. The risk of impacts on paleontological resources from the cumulative scenarios would depend on the locations of proposed disturbance relative to PFYC class. When the route designation decision is combined with these other actions the cumulative impacts to paleontological resources are anticipated to be minimal due to the requirements for resource assessments and mitigation combined with the low acreage that could be impacted by ground disturbing activities or increases in human use of areas under most scenarios.

A.9 AIB-9 (GREATER SAGE-GROUSE)

How would the route network alternatives impact Greater sage-grouse and their habitats, including general habitat management area (GHMA) and priority habitat management area (PHMA)?

The analysis area for Greater Sage-Grouse and their habitats is the TMA, with a 3.1-mile boundary buffer, because this is the 2015 Utah Greater Sage-Grouse Approved Resource Management Plan Amendment (BLM 2015c) suggested distance for roads around active leks. The temporal scope of analysis is 20 years (see Section 3.1.1). The closest known lek is located approximately 6 miles from the nearest route, so no impacts to the lek would occur.

The population within this lek is part of the Parker Mountain-Emery biological significant population and is within a PHMA area that contains a total of 1,122,490 acres. Approximately 10,000 acres of the USFWS defined population range, and approximately 22 acres of the PHMA overlap with the TMA. There are 0.53 miles of routes within the PHMA and population that are currently designated OHV-Limited seasonally under the 2008 Richfield RMP's travel plan. Specifically, OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Section H.4 in Appendix H) may result in human presence and OHV noise impacts to individual grouse such as displacement from habitats during the length of the noise or presence. However, route network alternatives are not expected to change impacts lekking grouse because there are no known leks within 3.1 miles.

A.10 AIB-10 (SOCIOECONOMICS)

What are the socioeconomic impacts of the route network alternatives?

The analysis area is Carbon and Emery counties because those are the counties most affected by recreation in the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). Any impacts to the socioeconomics of the planning area (Carbon and Emery counties) would come from changes in recreation visitation to the TMA and resultant changes in expenditures by visitors to the TMA. As discussed in the recreation analysis in Section 3.3.4, PFO expects little if any change in recreation visitation from the various alternatives. Nonetheless, it is useful to describe the current contribution of visitation to the TMA to the economy of the planning area. Additionally, we can compare that impact to the overall impact of both recreation spending on BLM lands in the PFO and the overall impact of recreation and tourism to these two counties.

A common tool used by economists to estimate economic contributions is the Impact for Analysis (IMPLAN) model (IMPLAN 2024). IMPLAN takes spending inputs, in this case spending by recreationists in a variety of sectors (lodging, restaurants, groceries, etc.) to estimate economic output. Assumptions for the following models are:

- The socioeconomics planning area consists of Carbon and Emery counties, as most spending by visitors to the TMA are likely occur in these two counties.

- All models use latest available IMPLAN data (2022).
- Segment data (e.g., local vs nonlocal, day use vs overnight, camping vs lodging, etc.) provided by PFO recreation staff.
- Spending profiles for each segment based on USFS National Visitation Use Monitoring data for Manti-LaSal National Forest, with hotel rates adjusted for 2022 county-specific data (University of Utah 2024).
- Total PFO visitation data for FY23 from the BLM Recreation Management Information System (RMIS).
- PFO recreation staff estimate visitation to the TMA at 372,000 visitor days, which is not expected to vary by alternative.
- All output in 2022 dollars
- IMPLAN estimates are strictly linear. For example, increasing the estimate of recreation visitation by ten per cent will increase all outputs by the same ten per cent (see Model 3, Table Appx - 9, below).

Model 1 (Table Appx - 7) shows the estimated economic contribution of recreation visitation to all BLM lands managed by PFO. Model 2 (Table Appx - 8) shows the estimated economic contribution of recreation visitation to the TMA. The economic contribution of recreation in the TMA accounts for 64 per cent of the total employment in the PFO. This is not surprising, given that PFO estimates that the great majority of recreation in PFO occurs within the TMA. University of Utah 2024 estimates that overall recreation and tourism spending in the planning area accounts for 1,192 total jobs, most of which are direct employment. The 46.2 total employment estimate for the TMA represents 3.9 per cent of the Gardner estimate for the economic contribution of *all* recreation and tourism spending in Carbon and Emery counties, and not just BLM. Although Gardner uses IMPLAN, BLM does not have access to the specific spending profiles which they used. Nonetheless, BLM feels the results are comparable.

Table Appx - 7: Model 1: Overall Economic Impact of Recreation Visitation to PFO, FY23

Visitor Days: 576,995 (RMIS 2023)

	Employment	Labor Income	Value Added	Output
Direct Effect	58.8	$1,902,748	$2,639,482	$4,492,715
Indirect Effect	7.6	$328,076	$544,046	$1,303,089
Induced Effect	5.3	$231,522	$478,999	$842,678
Total Effect	71.7	$2,462,347	$3,662,527	$6,638,481

Note: Economic impact results are divided into three main categories (Direct, Indirect, and Induced). Direct impacts are those caused by the specified activity (e.g., the purchase of restaurant meals). Indirect impacts are supply chain impacts from the direct impacts (e.g., purchases of food by restaurants from suppliers). Induced impacts are the economy-wide ripple effects (e.g., the local businesses supported by direct employee spending).

Table Appx - 8: Model 2: Economic Impact of Recreation Visitation to TMA, FY23 – All Alternatives

Visitor Days: 372,000 (PFO recreation staff estimate)

	Employment	Labor Income	Value Added	Output
Direct Effect	37.9	$1,226,739	$1,701,726	$2,896,514
Indirect Effect	4.9	$211,517	$350,757	$840,127
Induced Effect	3.4	$49,267	$308,820	$543,291
Total Effect	46.2	$1,587,523	$2,361,303	$4,279, 959

In summary, because visitation would not change across the alternatives, the current economic contribution based on current visitation (see Table Appx - 7 and Table Appx - 8) will remain unchanged across alternatives. The estimates above are just that—estimates—which could be affected by a wide range of local, regional and even national events (e.g., changes in travel costs). IMPLAN estimates are strictly linear, meaning that a doubling of recreation visitation would produce a doubling of the estimated economic contributions discussed above. To aid those readers who may feel that BLM estimates are too large or too small, Model 3 (Table Appx - 9) provides the marginal economic contribution per 10,000 visitor days to the TMA.

Table Appx - 9: Model 3: Economic Impact of Recreation Visitation to TMA Per 10,000 Visitor Days

	Employment	Labor Income	Value Added	Output
Direct Effect	1.0	$32,977	$45,745	$77,864
Indirect Effect	0.1	$5,686	$9,429	$22,584
Induced Effect	0.1	$4,013	$8,302	$14,605
Total Effect	1.2	$42,675	$63,476	$115,053

Non-Market Values

In addition to the economic impacts described above, it is important to also consider non-market values associated with BLM activities. The term nonmarket values refers to the benefits individuals attribute to experiences of the environment or uses of natural and cultural resources that do not involve market transactions and therefore lack prices. Examples include the benefits received from wildlife viewing, hiking in a wilderness, or hunting for recreation. Nevertheless, such values are important to consider because they help tell the entire economic story. Estimates of nonmarket values supplement estimates of income generated from commodity uses to provide a more complete picture of the economic implications of proposed resource management decisions. Unlike gasoline or employee wages, these values either do not have a market or do have a market but are difficult to quantify. Nevertheless, such values are important to consider because they help tell the entire economic "story." This is especially important regarding recreation activities on BLM which are typically "free" to the user, but still have value even if not expressed in monetary terms. Despite the difficulties associated with measurement of these values, it is well-accepted that the natural, recreational, and cultural resources of an area, and the open space the area may provide, have value, even if difficult to quantify in dollars.

Nonmarket use values have been studied extensively for a wide variety of recreation "goods." (Examples of a range of typical nonmarket use values—consumer surplus values—for recreation activities can be found in a recent Oregon State University report (Rosenberger 2016). That report summarizes the findings from 421 studies (totaling 3,192 different value estimates) covering the U.S. and Canada from 1958–2016 and separates the studies by region. This data is revealing, in that it indicates that visitors may be getting great value for their recreation activities in the socioeconomic study area and may be more willing as a result to visit here and continue to contribute their spending to the local economy.

On the basis of the above analysis, BLM believes there would be only minimal impacts to the planning area's economy under any alternative, and detailed analysis is not required. There are no past, present or reasonably foreseeable actions that would alter this conclusion

A.11 AIB-11 (MUNICIPAL WATERSHED/DRINKING WATER)

How would the route network alternatives impact municipal watershed/drinking water source protection zones?

The TMA is the analysis area because that is the smallest unit that shows all the impacts to municipal watersheds and drinking water source protection zones. The temporal scope of analysis is 20 years (see

Section 3.1.1). The Utah Division of Drinking Water (DDW) has defined Drinking Water Source Protection (DWSP) zones for surface water sources used by public drinking water systems in Utah. These water sources have been divided into different zones of protection outlined in Table Appx - 10.

Table Appx - 10: Descriptions of DDW Defined DWSP Zones

Zone	Definition/Descriptions
Zone 1	Zone 1 is the closest to the source to be used by public drinking water systems. (A) Streams, rivers and canals: zone 1 encompasses the area on both sides of the source, 1/2 mile on each side measured laterally from the high-water mark of the source (bank full), and from 100 feet downstream of the POD to 15 miles upstream, or to the limits of the watershed or to the state line, whichever comes first. If a natural stream or river is diverted into an uncovered canal or aqueduct for the purpose of delivering water to a system or a water treatment facility, that entire canal will be considered to be part of zone 1, and the 15-mile measurement upstream will apply to the stream or river contributing water to the system from the diversion. (B) Reservoirs or lakes: zone 1 is considered to be the area 1/2 mile from the high-water mark of the source. Any stream or river contributing to the lake/reservoir will be included in zone 1 for a distance of 15 miles upstream, and 1/2 mile laterally on both sides of the source. If a reservoir is diverted into an uncovered canal or aqueduct for the purpose of delivering water to a system or a water treatment facility, that entire canal will be considered to be part of zone 1, and the 15-mile measurement upstream will apply to the reservoir and tributaries contributing water to the system.
Zone 2	Zone 2 is defined as the area from the end of zone 1, and an additional 50 miles upstream (or to the limits of the watershed or to the state line, whichever comes first), and 1000 feet on each side measured from the high-water mark of the source.
Zone 3	Zone 3 is defined as the area from the end of zone 2 to the limits of the watershed or to the state line, whichever comes first, and 500 feet on each side measured from the high-water mark of the source.
Zone 4 [1]	Zone 4 is defined as the remainder of the area of the watershed (up to the state line, if applicable) contributing to the source that does not fall within the boundaries of zones 1 through 3.

[1] Zone 4 is not considered in this analysis because it represents upland areas distant from water sources used by drinking water systems.
Source: DDW 2024

The northern portion of the TMA (north of I-70) overlaps with what DDW has mapped as the Green River Intake for the City of Green River. There are no mapped municipal watersheds located in the southern portion of the TMA (south of I-70). The Green River Intake has a boundary that extends from the Green River City water facility north to the Utah/Wyoming boarder and east to the Utah/Colorado boarder. Due to the size of the area, the Hydrological Unit Code (HUC) 10 watershed level was used to analyze the Green River Intake Drinking Water Source Protection zone. Within the northern TMA boundary there are six HUC 10 watersheds: Cole Creek – Price River, Grassy Trail Creek, Little Park Wash-Price River, Cottonwood Wash – Price River, Deep Seep Wash, Upper San Rafael River. Table Appx - 11 shows the square miles of Surface Protection Zones found within the HUC 10 watersheds.

Table Appx - 11: Square Miles of Surface Protection Zones in HUC 10 Watersheds that Intersect with Northern Portion of the TMA (North of I-70)

	Cole Creek - Price River	Grassy Trail Creek	Little Park Wash - Price River	Cotton Wood Wash - Price River	Deep Seep Wash	Upper San Rafael River	Totals square miles
Zone 4	398	467	444	195	303	2	1,810
Zone 3	27	15	0	72	18	0	131
Zone 2	0	16	61	67	0.00	0	143
Zone 1	0	14	0	0	0.00	0	14

Table Appx - 12 shows the miles of route intersecting with Surface Water Protection Zone 2 and 3. Zone 1 is not considered because it is not present within the TMA boundary where the effects would be occurring.

Table Appx - 12: Miles of Routes Intersecting with Surface Water Protection Zone 2 and Zone 3 in the Northern Portion of the TMA (North of I-70)

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A	Routes	Change from Alt A	Routes	Change from Alt A
Zone 2	OHV-Open	31	89	+58	150	+119	175	+144
	OHV-Closed	46	92	+46	32	-15	7	-40
Zone 3	OHV-Open	7	47	+40	65	+58	73	+66
	OHV-Closed	6	26	+21	8	+3	0.2	-6

The OHV-Open and OHV-Limited designations in the route network alternatives may result in soil-displacing, soil-compacting, and water-redirecting activities (e.g., route use by OHV recreationists) that leads to surface erosion, head cutting, and possible delivery of sediment to waterways.

However, because the route network alternatives only consider existing routes and are already disturbed surfaces, they do not represent new or additional sources of sediment delivery. Of the routes in the northern portion of the TMA, 28.8% intersect DWSP Zone 2 and 7.4% intersect Zone 3 (see Table Appx - 13). The nature and extent of the effects disclosed above indicate that detailed analysis is not required.

Table Appx - 13: Square Miles and Percent of Surface Protection Zones in TMA

Zone	Square Miles in TMA	Percent out of Six HUC-10s
4	319	17%
3	10	7%
2	41	29%
1	0	0%

Past, present, and reasonably foreseeable actions, plans, projects, or activities impacting municipal watershed/drinking water source protection zones within the analysis area include such as grazing, Olsen Reservoir, Price River restoration project, mineral development (e.g., oil and gas development), state owned land development, municipality development. These projects and OHV-related activities as well as reasonably foreseeable projects, ongoing seasonal snowmelt runoff, and monsoon events on disturbed areas in the analysis area may deliver sediment.

A.12 AIB-12 (MIGRATORY BIRDS)

How would the route network alternatives impact migratory birds, including raptors?

The analysis area for migratory birds is the TMA because migratory bird habitat for breeding, nesting, migrating, and wintering can be found throughout the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural, wildlife, and ecological resources. Per the 2008 Price RMP, the highest value breeding migratory bird and raptor habitat exists along the Price River, San Rafael River, and Muddy Creek. Various migratory birds (including raptors, waterfowl, songbirds, neotropical migrants, and special status birds) utilize habitat throughout the TMA. In the context of this EA, a "migratory bird" is one protected under the Migratory Bird Treaty Act (MBTA). Some MBTA species are covered in the "Special Status Wildlife" section (3.3.11) in this EA:

Golden Eagle, Ferruginous Hawk, Burrowing Owl. In Utah, especially in the more arid areas such as the San Rafael Swell, lowland riparian habitat is especially important for migratory bird species. Approximately 23,534 acres of riparian areas occur within the TMA (see Section 3.3.8). As part of addressing the MBTA, the USFWS have developed listings of Birds of Conservation Concern, which are high conservation priority MBTA species that are not already protected by the ESA. Based on the USFWS's Information for Planning and Consultation (IPaC) system, migratory birds in the TMA include:

- Black Rosy-finch (*Leucosticte atrata*)
- Bald Eagle (*Haliaeetus leucocephalus)*
- California Gull (*Larus californicus)*
- Clark's Grebe (*Aechmophorus clarkia*)
- Clarks Nutcracker (*Nucifraga columbiana)*
- Evening Grosbeak (*Coccothraustes vespertinus)*
- Golden Eagle (*Aquila chrysaetos*)
- Lesser Yellowlegs (*Tringa flavipes)*
- Olive-sided Flycatcher (*Contopus cooperi*)
- Pinyon Jay (*Gymnorhinus cyanocephalus*)
- Western Grebe (*Aechmophorus occidentalis)*

Table Appx - 14 summarizes the habitat specific to BLM sensitive migratory bird species present in the TMA.

Table Appx - 14: Migratory Bird Species Analyzed in Brief

Species	Habitat
American Three-toed Woodpecker (*Picoides dorsalis*)	In Utah, this woodpecker nests and winters in coniferous forests, generally above 8,000 ft (2,400 m) in elevation. The TMA contains potential habitat according to a USGS Conterminous United States (CONUS) habitat model.
Bald Eagle (*Haliaeetus lecocephalus*)	While breeding is not common within the TMA, bald eagles will utilize locations during the winter in the TMA. A USGS CONUS habitat model shows the potential for Bald Eagles to be within the TMA.
Lewis's Woodpecker (*Melanerpes lewis*)	Inhabits burned-over Douglas-fir, mixed conifer, pinyon-juniper, riparian, and oak woodlands, but is also found in the fringes of pine and juniper stands, and deciduous forests, especially riparian cottonwoods. Breeding habitat consists of open, park-like ponderosa pine forests. Areas with a good under-story of grasses and shrubs to support insect prey populations are preferred. The TMA contains potential habitat from a USGS CONUS habitat model, but the species is sited irregularly and appears to not utilize the potential habitat within the TMA.
American Goshawk (*Accipiter gentilis*)	Prefers mature mountain forest and riparian zone habitats. Nests are constructed in trees in mature forests; often nests previously used by Northern Goshawks or other bird species are re-used. The TMA contains potential habitat according to a USGS CONUS habitat model, though the species is not consistently found-in the TMA.
Short-eared Owl (*Asio flammeus*)	Found in grasslands, shrublands, and other open habitats. The species is nomadic, often choosing a new breeding site each year, depending on local rodent densities. In winter, some birds migrate south, though many remain in the vicinity of their breeding grounds as year-round residents. The TMA contains habitat potential for Short-eared Owl use during winter months according to a USGS CONUS habitat model.
Pinyon Jay (*Gymnorhinus cyanocephalus*)	This species is a Pinyon-juniper woodland dependent that relies on pinyon pine nuts as a primary food source. There is potential habitat within the TMA, but no official habitat model is currently available.

For more detailed information on migratory birds, and their habitats, see the "Wildlife" section of the 2008 Price Proposed RMP/EIS (BLM 2008d, pages 3-51 to 3-59), the "Fish and Wildlife" section of the 2008 Richfield Proposed RMP/EIS (BLM 2008f, pages 3-70 to 3-77), and NatureServe Explorer (NSE 2024).

Within the analysis area, public visitation and route use levels vary by season. High-visitation months coincide with the spring season during nesting and fledging. Human activity such as public route use, sign installation, route maintenance, roadside parking, and passing results in migratory birds and raptor habitat avoidance and abandonment, daily movement interference, increased physical stress that can result in decreased health, parturition, and increased vehicle collisions resulting in injury or mortality (Ouren et al. 2007, Ortega 2012), and 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. Noise from OHV use also disturbs migratory birds in their habitats (Naidoo and Burton 2020). Route use in riparian areas is of particular concern for most big game and upland game birds because of the importance of those habitats to the species. These adverse effects are expected long-term and short-term impacts that may result from designation of the TMP. Reasonably expected beneficial long-term and short-term impacts include directing OHV traffic away from high-value migratory bird habitat, and rehabilitation of closed routes, resulting in reclamation of habitat as described in Appendix H.

The nature of the impacts of Alternatives A through D are the same as previously described. Table Appx - 15 shows the difference in the magnitude of the impacts between the alternatives by calculating the acres of habitat within the species-specific buffer of an OHV-Open or OHV-Limited route for each alternative. Impacts to riparian areas, which are particularly important for migratory birds, are analyzed in Section 3.3.8.

Table Appx - 15: Acres of Migratory Bird Potential Habitat Within Species-Specific Buffers of OHV-Open and OHV-Limited Routes by Alternative

Species	Species-Specific Buffer	Acres of Potential Habitat in TMA	Alternative A Area of Impact (Acres)	Alternative B Area of Impact (Acres)	Alternative C Area of Impact (Acres)	Alternative D Area of Impact (Acres)
Migratory Birds	-	1,313,353	1,430	1,198	1,705	2,111
American Three-toed Woodpecker	100 meters	1,922	229	171	278	360
Burrowing Owl	.25 mile	842,564	260,468	230,182	298,594	344,014
Ferruginous Hawk	.5 mile	608,326	319,738	285,759	355,032	383,447
Golden Eagle	.5 mile	1,229,229	592,213	530,370	654,649	723,051
Lewis's Woodpecker	100 meters	1,939	229	171	279	361
American Goshawk	.5 mile	485,800	261,791	235,150	286,370	313,635
Short-eared Owl	.25 mile	1,238,875	336,529	295,622	388,641	446,909

The past, present and foreseeable trends and activities listed in Section 3.2 that occur within the TMA and along the Price River, San Rafael River, and Muddy Creek accumulate human activity-related effects to migratory birds and raptors including disrupted or displaced breeding; changes in nesting behavior that result in reduced reproductive success; spatial and temporal changes in foraging activities that result in decreased fitness; altered species richness and community composition; and alteration to nesting, burrowing, brooding, foraging habitat, and mortality. The contribution of the alternatives to the cumulative effects is described in Table Appx - 15.

Migratory birds and raptors are not analyzed further because only routes which physically exist on the ground (open or closed) were evaluated for this plan, because the alternatives would not redistribute recreation from the high use areas to the low use areas, and because none of the alternatives would

authorize the construction of routes, authorize use of a route that has not already been subject to ongoing use even if such use was unauthorized, add or remove access to major area destinations, authorize events, create or remove an attraction that would draw new visitors, or authorize an action (such as construction) that would involve worker access.

A.13 AIB-13 (PUBLIC HEALTH AND SAFETY)

How would the route network alternatives impact public safety within the TMA and emergency services within and adjacent to the TMA?

The analysis area for public safety and emergency services is the TMA for 20 years because that is the area and timeframe influenced by the route network alternatives. Emergency vehicles are excluded from the 43 CFR § 8340.0-5 definition of OHVs so emergency service access within the analysis area would not vary across alternatives. In addition, the Dingell Act allows for necessary maintenance or repairs to existing roads designated for the use of motorized vehicles, including necessary repairs to keep existing roads free of debris or other safety.

OHV use and the attendant dangers to human health and safety from OHV operation would only occur on any routes designated as OHV-Open or OHV-Limited under each alternative (see Map 2 through Map 5 and Section 2.2). According to the United States Consumer Product Safety Commission (CPSC) the dangers to public health and safety from OHV[44] use include vehicle collisions, overturns, and occupant ejection. Collisions can occur with other vehicles, stationary objects, or living beings and can occur simultaneously with an overturn (Topping 2021). Collisions and overturns are often preceding events that lead to ejection, the danger most frequently associated with fatality (Topping 2021).

Overturns occur because of steep terrain, changes in surface terrain, sharp turns, or operating at high speeds (Topping 2021). Vehicle collisions can occur due to driver error, vehicle malfunctions, hazardous road conditions, or a combination of issues (NHTSA 2008). Hazardous road conditions are influenced by route conditions (sharp curves, steep inclines, width, and terrain), route use levels or conditions (e.g., vehicle type limitations), and environmental conditions (e.g., weather) (NHTSA 2008). The Implementation Guide (Appendix H) includes measures to reduce hazardous road conditions such as signs to direct and inform traffic on the route and maintenance of the routes appropriate to the route classification.

The latest CPSC report showed 2,156 OHV fatalities nationwide from 2016-2018 (Topping 2021). Less than one percent of the reported fatalities occurred in Utah (Topping 2021), though the number of fatalities that occurred in the TMA is unknown. As described in the cumulative recreation paragraph (Section 3.2.5) and the Recreation analysis (Section 3.3.4), while recreation use is expected to increase with population growth, the primary recreation areas are not expected to change across alternatives. Therefore, impacts to public health and safety and emergency access are not analyzed in detail.

A.14 AIB-14 (SENSITIVE PLANT SPECIES)

How would the route network alternatives impact BLM Sensitive plant species?

The analysis area is the TMA because it is the smallest unit that shows all impacts to species within the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and

[44] The United States Consumer Product Safety Commission identifies a definition for OHV that differs slightly from 43 CFR§ 8340.0-5. A link to the latest report and OHV definition can be found here: OHV Report 2021 (cpsc.gov).

enhancement of its natural and ecological resources. Analysis of impacts was done by buffering potential habitat for each species by 300 feet to account for the spread of fugitive dust (USFWS 2021b), and then calculating the total acreage of Sensitive plant species in the analysis area include Bolander's camissonia (*Camissonia bolanderi*), Entrada rushpink, aka rushpink skeletonplant (*Lygodesmia grandiflora* var *entrada*), Jones indigo bush aka Jones' dalea (*Psorothamnus polydenius* var *jonesii*), Mussentuchit gilia (*Aliciella tenuis*), Pinnate spring-parsley (*Cymopterus beckii*), Smith's wild buckwheat (*Eriogonum corymbosum* var. *smithii*), Thompson's talinum aka Cedar Mountain flameflower (*Phemeranthus thompsonii*), and Utah spurge, aka paria spurge (*Euphorbia nephradenia*). Habitat for these species is described in Table Appx - 16.

Table Appx - 16: BLM Sensitive Plant Species Analyzed in Brief

Species	Habitat[1]
Bolander's camissonia (*Camissonia bolanderi*)	Bolander's camissonia is a Utah endemic annual which occurs on the Moenkopi formation occurs throughout the TMA.
Entrada rushpink, rushpink skeletonplant (*Lygodesmia grandiflora* var *entrada*)	Entrada rushpink is endemic to Emery, Grand, and San Juan counties, and has been recorded east of the San Rafael Reef. It typically occurs on the Entrada formation in mixed desert shrub communities and pinyon-juniper woodlands.
Jones indigo bush, Jones' dalea (*Psorothamnus polydenius* var *jonesii*)	Jones indigo bush is endemic to Emery and Grand counties. The species occurs on Blue Gate and Tununk members of Mancos Shale and, less commonly, on sandy terrace gravels, at 4,200 to 4,900 feet in elevation. It is associated with shadscale, mat-saltbush, Mormon tea, and galleta vegetation communities. There are sparse occurrences within the TMA, though the species has been described as locally common in an area east of the TMA boundary (NatureServe).
Mussentuchit gilia (*Aliciella tenuis*)	Mussentuchit gilia is endemic to Emery, Wayne, and Sevier counties. Most populations occur along a roughly 30-mile span of the rugged, exposed "reef" on the west side of the San Rafael Swell and many of the known populations of Mussentuchit gilia are located within protected areas (Capitol Reef Nation Park & Muddy Creek wilderness). Due to the rough terrain associated with its habitat, there are limited roads near or within habitat.
Pinnate spring-parsley (*Cymopterus beckii*)	Pinnate spring-parsley is found in two disjunct areas of southeastern Utah and one small area in Navajo County, Arizona. It is common in Utah but rare in Arizona. Typical habitat includes shady or partially shaded crevices, ledges, and cliff bases on Navajo Sandstone in pinyon-juniper, mountain brush, and occasionally ponderosa pine-manzanita conifer-oak, and Douglas fir communities. The steep and rugged habitat of this species is not conducive to roads and there are no roads within known habitat.
Smith's wild buckwheat (*Eriogonum corymbosum var. smithii*)	Smith's wild buckwheat, or Flat Top buckwheat, is an endemic species found in a very narrow range along the borders of Emery and Wayne counties. Habitat for Smith's wild buckwheat consists of deep sand dunes and mixed grassland and shrub oak communities (Boufford 1993). Within the TMA, occurrences have been documented around Gilson Butte and Little Gilson Butte (SEiNet). There are few routes within proximity to the known population of Smith's wild buckwheat within the TMA.
Thompson's talinum, Cedar Mountain flameflower (*Phemeranthus thompsonii*)	The Cedar Mountain flameflower, or Thompson's talinum, is found primarily along the top of Cedar Mountain in slick rock dominated areas. Within the known habitat there are few roads, and the few designated routes within habitat are primarily on rocky, low dust substrates.
Utah spurge, paria spurge (*Euphorbia nephradenia*)	Utah spurge is a Colorado Plateau endemic, occurring in Emery, Garfield, Kane, and Wayne counties along the east edge of the San Rafael Reef, in dark clay hills, sand, and stabilized dunes. It is associated with mat-saltbush, blackbrush, Mormon tea, and mixed sandy desert shrub and grassland vegetation communities. This species is an annual, and

Species	Habitat[1]
	dependent on precipitation levels, which causes population fluctuations.

Within the analysis area, threats to BLM sensitive plant species include OHV use, grazing and trampling by livestock, mining and quarrying, competition from invasive and noxious weeds, and climate change, though none of these threats are considered severe for the species discussed in this section. Specifically, OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Section H.4 in Appendix H) may result in adverse impacts to BLM sensitive plants and their pollinators include crushing of plants or pollinators, fugitive dust deposition reducing stomatal conductance, increased transpiration rates, increased leaf temperature, decreased photosynthetic rates, decreased reproductive rates (Farmer 1993, Goossens and Buck 2009, USFWS 2010) and with its attendant species competition and habitat alteration. Extreme weather such as drought, extreme heat or cold, or heavy snowfall exacerbate these effects. Route networks with open or limited designations can contribute to the effects described above. Closed designations eliminate OHV use effects, thereby benefiting special status plant species.

The nature of the impacts of Alternatives A through D are the same as previously described. Table Appx - 17 shows the difference in the magnitude of the impacts between the alternatives by calculating the acres of habitat within the species-specific buffer of an OHV-Open or OHV-Limited route for each alternative.

Table Appx - 17: Acres of BLM Sensitive Plant Potential Habitat within 300 Feet of OHV-Open or OHV-Limited Routes by Alternative

Species	Acres of Potential Habitat in TMA	Alternative A Area of Impact (Acres)	Alternative B Area of Impact (Acres)	Alternative C Area of Impact (Acres)	Alternative D Area of Impact (Acres)
Bolander's camissonia	25,347	22,536	18,399	25,642	29,525
Entrada rushpink	34,385	2,140	1,716	2,469	2,695
Jones indigo bush	354,316	28,990	26,489	34,577	41,256
Mussentuchit gilia	649,682	41,338	33,741	47,871	58,201
Pinnate spring parsley	31,815	1,045	1,042	1,202	1,267
Thompson's talinum	1,489	11	18	18	90
Utah spurge	60,232	5,386	4,757	6,349	6,994

The past, present and foreseeable trends and activities listed in Section 3.2 that occur within the TMA include crushing of plants or pollinators, fugitive dust deposition reducing stomatal conductance, increased transpiration rates, increased leaf temperature, decreased photosynthetic rates, and decreased reproductive rates to sensitive plants, their pollinators, and their habitats. The contribution of the alternatives to the cumulative effects is described in Table Appx - 17.

Sensitive plants and their habitats are not analyzed further because only routes which physically exist on the ground (open or closed) were evaluated for this plan, because the alternatives would not redistribute recreation from the high use areas to the low use areas, and because none of the alternatives would authorize the construction of routes, authorize use of a route that has not already been subject to ongoing use even if such use was unauthorized, add or remove access to major area destinations, authorize events, create or remove an attraction that would draw new visitors, or authorize an action (such as construction) that would involve worker access.

A.15 AIB-15 (MINERALS)

How would the route network alternatives impact mineral exploration, development, and operations in the TMA?

The TMA is chosen as the geographic scope because it includes all the mineral sites that use the evaluated routes. The temporal scope of analysis is 20 years (see Section 3.1.1).

Within the TMA, there are 382 mining claims and four locatable mineral active Plans of Operation. The TMA also contains 11 mineral material sites (i.e., sand, gravel, clay, and stone) and 27 oil and gas leases, plus one parcel under consideration for lease. Mineral site development traffic may consist of haul trucks, semi-trucks, drill rigs, heavy equipment, or work crew vehicles. For more details on oil/gas and mineral development in the Price and Richfield Field Offices in general, see pages 3-78 to 3-84 of the 2008 Price Proposed RMP/EIS (BLM 2008d) and pages 3-107 to 3-117 of the 2008 Richfield Proposed RMP/EIS.

Access to permitted or leased mineral development sites in the TMA is included in each mineral site's Plan of Operations, Notice, or Application for Permit to Drill, and is not changed by any OHV designations resulting from this plan. If a mining claimant requires access to develop their claim, BLM will work with the claimant to authorize access consistent with applicable law.

The potential effects of public OHV access on mineral development activities are those related to conflicts with recreation users including equipment or facility vandalism, theft, disruption of operations, or operation safety concerns. Designating evaluated routes as OHV-Open or OHV-Limited can provide public access to these mineral sites. Designating routes as OHV-Closed prevents OHV access altogether, though non-OHV access may still occur. However, according to 43 CFR § 3809.420(b)(13), "during all operations, the operator would maintain his or her structures, equipment, and other facilities in a safe and orderly manner. Hazardous sites or conditions resulting from operations would be marked by signs, fenced, or otherwise identified to alert the public in accordance with applicable Federal and state laws and regulations."

Routes that currently exist for authorized mineral uses would not be reclaimed even if designated as OHV-Closed so long as the authorization remains in place. Operators may include OHV-Closed routes for access in their Plan of Operations, Notice, or Application for Permit to Drill, and could be responsible for reclaiming those routes.

In conclusion, route designation decisions would not preclude access for mineral lease or permit holders and other authorized users. None of the proposed alternatives would result in the loss or gain of authorized access to mineral development leases or sites. Even routes that are designated OHV-Closed would remain available for authorized use, as authorized. Route designation decisions could impact public access to mineral sites. However, maintenance and public safety regulatory requirements would reduce opportunities for conflicts with recreation users. There are no other anticipated relationships with other resources. Therefore, no additional analysis is needed.

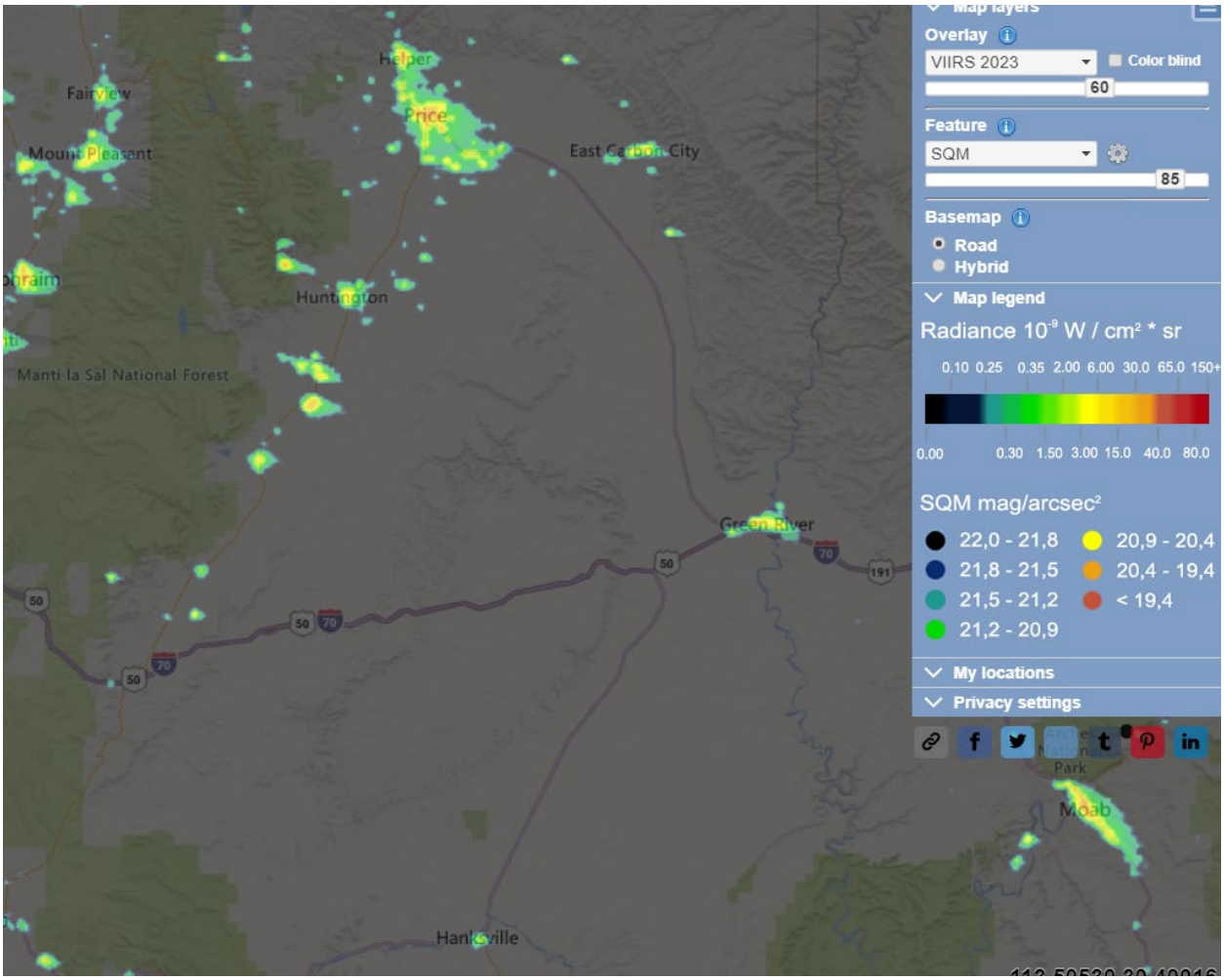
A.16 AIB-16 (DARK NIGHT SKIES)

How would the route network alternatives impact the quality of dark night skies?

The analysis area is the TMA because that is the smallest unit showing all the effects expected from the TMP. The temporal scope of analysis is 20 years (see Section 3.1.1). Dark night skies contribute to the remote experience that many people seek when they visit public lands. Light pollution diminishes the aesthetic values of the night sky by making it difficult to see fainter stars or other faint celestial objects (BLM 2023a). Optimal night skies are free of scattered light or skyglow, which is generated by anthropogenic light from development, transportation, or industrial operations. The scattering of artificial light in the atmosphere increases night sky luminance and erodes the visual appearance of stars and planets.

The communities of Price, Huntington, Castle Dale, Ferron, Emery, Hanksville, and Green River introduce only modest amounts of light pollution and minimally contribute to sky glow within the TMA (see Figure Appx - 1). Goblin Valley State Park was visited by the NPS Dark Sky Team in 2015 and determined to have exceptionally dark night skies. Capitol Reef National Park was designated as an International Dark Sky Park in 2015. Based on the 2023 data from http://www.lightpollutionmap.info, the San Rafael Swell TMA has sky quality meter (SQM) values[45] between 21.8-22.0 which places it solidly within Bortle Class 1, the highest quality of dark night skies possible (Bortle 2006). Bortle Class 1 areas are described as Excellent Night Sky sites where portions of the Milky Way cast obvious shadows, many constellations are difficult to distinguish within the heavy background of visible stars, sources of zodiacal light, airglow, and globular clusters are readily visible to the naked eye, and both Jupiter and Venus are bright enough to affect night adaptation.

Figure Appx - 1: 2023 Light Pollution Map of San Rafael Swell



[45] Sky quality meter (SQM) ratings measure the luminance of the night sky on a scale between the numbers of 16.00-22.00. Lower numbers indicate brighter skies such as in urbanized areas and higher numbers indicate darker skies such as in remote, uninhabited areas. SQM values for any point on Earth can be determined from http://www.lightpollutionmap.info.

Potential impacts to dark night sky viewing experiences from the proposed alternatives would include temporary, transient, low-angle disturbances near the horizon from vehicle headlights or taillights while traveling after dark. Headlights can sometimes create temporary skyglow when reflecting off canyon walls. These impacts can be expected to occur most frequently early in the evenings when vehicles are traveling to and from trailheads or dispersed camping locations. Temporary and localized impacts to night sky viewing may also occur from occupied dispersed campsites accessed via the travel network. Later evenings and early morning hours when visitors are normally asleep would likely see much fewer impacts from vehicle lights and dispersed camping. Due to the temporary and transient nature of the anticipated impacts, cumulative effects to dark night skies would not result from vehicle travel or associated dispersed camping within the TMA. Motor vehicle lighting requirements are established under the Federal Motor Vehicle Safety Standards by the National Highway Traffic Safety Administration, and therefore, are outside the purview of BLM's authority to influence. Motor vehicle regulation and registration are under the jurisdiction of the Utah Division of Motor Vehicles.

A.17 AIB-17 (NATURAL SOUNDSCAPES)

How would the route network alternatives impact natural soundscapes?

The analysis area is the TMA because it overlaps rural areas in Emery and Sevier counties. The temporal scope of analysis is 20 years (see Section 3.1.1). In rural areas, ambient sound levels are typically 30 to 40 A-weighted decibels (dBA) (EPA 1974). As a basis for comparison, the sound levels of a normal conversation between two people standing 5 feet apart is 60 dBA. Highway traffic noise typically ranges from 70 to 80 dBA at a distance of 50 feet from the highway (US DOT 2003). Decibels (dB) are the units of measure used to represent sound pressure levels, and dBA is the unit of measure of sound pressure levels using the A-weighted network which is a good correlation to a human's subject reaction to noise. The EPA has identified a 24-hour average exposure level of 70 dBA as the level of environmental noise which will prevent any measurable hearing loss over a lifetime. Likewise, levels of 55 dBA outdoors and 45 dBA indoors are identified as preventing activity interference and annoyance. 55 dBA is generally recognized as a level below which no public health or safety risks to the general population would be anticipated to occur. OHVs generate, on average, between 75 and 97 dBA at a distance of 50 feet. Decibel output can vary widely between different types of OHVs depending on types of engines, size, and throttle position. For example, a small 2-stroke gasoline engine on an accelerating motorcycle can emit much higher levels of noise than a 4-stroke gasoline motorcycle or passenger car engine many times larger. UTVs or side-by-sides are often louder than much larger SUVs or trucks. Likewise, diesel trucks can often be much louder than similarly sized gasoline powered vehicles (California Department of Parks and Recreation 2005).

In general, OHV activity, and therefore, noise levels on the open routes within the TMA would be expected to increase over time with anticipated increases in visitation. However, this increase would likely be attributable to a general population increase, as seen in recent years (Unites States Census Bureau 2023), and not directly tied to the BLM's decision. Average noise levels in the TMA would be anticipated to remain the same as current levels in any proposed alternative. Although it is possible that route closures could lead to an increase in noise levels near routes that remain open, noise levels near routes that are designated as closed would likely decrease. When added together, sounds from sources with similar magnitudes would produce a sound 3dBA greater than a single source due to logarithmic scaling. A 10 dBA increase above background levels is generally accepted as sufficient to cause noise pollution (EPA 1974). Depending on the magnitude of increased activity on the open routes in the TMA, this could eventually produce temporary and localized increases of 10 dBA or greater above background levels due to passing vehicles. However, at the time of this analysis, there are no available data to quantify the magnitude of an increase or decrease in noise related to any of the alternatives, as the BLM is not required to monitor traffic noise levels within the TMA.

A.18 AIB-18 (BIG GAME AND UPLAND GAME)

How would the route network alternatives impact big game and upland game species?

The analysis area for big game and upland game birds is the San Rafael North and San Rafael South desert bighorn sheep hunting units (see Map 16) because they encompass the boundaries of all other big game and upland game species within the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural, wildlife, and ecological resources.

Table Appx - 18 summarizes the habitats specific to each big game and upland game bird species present in the TMA.

Table Appx - 18: Summary of Big Game and Upland Game habitats

Species	Habitat Description
Big Game	
Desert bighorn sheep (*Ovis canadensis nelsoni*)	Within the TMA, the majority of occupied desert bighorn sheep habitat is within designated wilderness areas, where no OHV use occurs and no routes are proposed to be designated.
Mule deer (*Odocoileus hemionus*)	Mule deer are a native species found throughout the TMA and the state of Utah. They are more populous in shrublands and areas of rough, broken terrain with abundant browse and cover (BLM 2008d). Mule deer habitat within the TMA is primarily year-round use.
Pronghorn (*Antilocapra americana*)	The topography of most occupied habitat for pronghorn is characterized by large expanses of open, rolling, or flat terrain. Pronghorn primarily inhabit grasslands and shrub steppe biomes with succulent forb vegetation and available water (UDWR 2017). RMP designated year-long crucial habitat for pronghorn is found within the TMA.
Rocky Mountain Elk *(Cervus canadensis nelsoni)*	Within the TMA, small sections of winter habitat exist along the western and southwestern boundary (UDWR 2023a).
Upland Game	
Chukar *(Alectoris chukar)*	Chukar preferred habitats include areas with steep, rocky, semi-arid slopes often alongside vegetation such as rabbitbrush and sagebrush.
Wild Turkey *(Melegris gallopavo)*	Suitable habitat for the Wild Turkey varies but is typically forested with abundant grasses and forbs and often near water (UDWR 2023b). There is limited amount of Wild Turkey habitat within the TMA.

For more detailed information on big game and upland game and their habitats, see the "Wildlife" section of the 2008 Price Proposed RMP/EIS (BLM 2008d, pages 3-51 to 3-59), the "Fish and Wildlife" section of the 2008 Richfield Proposed RMP/EIS (BLM 2008f, pages 3-70 to 3-77), the Utah Wild Turkey Management Plan (UDWR 2023b), the Utah Upland Game Management Plan (UDWR 2022b), the Utah Statewide Elk Management Plan (UDWR 2022a), the Utah Pronghorn Statewide Management Plan (UDWR 2017), the Utah Mule Deer Statewide Management Plan (UDWR 2019b), the Utah Bighorn Sheep Management Plan (UDWR 2018), and NatureServe Explorer (NSE 2024).

Public visitation and route use levels within the TMA vary by season. High-visitation months coincide with the spring fawning, lambing, and calving, and nesting and fledging. Human activity such as public route use, sign installation, route maintenance, roadside parking, and passing results in big game and upland game birds habitat avoidance and abandonment, daily movement interference, 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). Human activities can also cause disturbance of

upland game birds, interfering with courtship, nesting, brood-rearing, or fledging activities. Big game and upland game birds avoid mountain biking and motorized vehicles (Naidoo and Burton 2020). Route use in riparian areas is of particular concern for big game and upland game birds because of the importance of those habitats to the species. Extreme weather such as drought, extreme heat or cold, or heavy snowfall can exacerbate these effects. Route networks with open or limited designations can perpetuate OHV use-related effects. Closed designations eliminate the OHV effects.

The nature of the impacts of Alternatives A through D are the same as previously described. Table Appx - 19 shows the difference in the magnitude of the impacts between the alternatives by calculating the miles of OHV-Open or OHV-Limited routes for each alternative within the habitats. Riparian areas, which are particularly important for most wildlife species, are analyzed in Section 3.3.8.

Table Appx - 19: Miles of OHV-Open and OHV-Limited Routes by Alternative within Potential Big Game and Upland Game Birds Habitat

Species	Acres of Potential Habitat in TMA	Alternative A (miles)	Alternative B (miles)	Alternative C (miles)	Alternative D (miles)
Big Game					
Desert bighorn sheep	476,377	426	355	471	584
Mule deer	42,717	76	37	62	70
Pronghorn	96,412	145	136	210	267
Rocky Mountain elk	15,767	24	23	35	54
Upland Game					
Chukar	29,688	37	14	36	51
Wild Turkey	6,021	9	6	11	15

The past, present and foreseeable trends and activities listed in Section 3.2 that occur in the San Rafael North and San Rafael South desert bighorn sheep hunting units accumulate human activity-related effects to big game and upland game birds including disrupted or displaced breeding times and habitats; changes in nesting behavior that result in reduced reproductive success; spatial and temporal changes in foraging activities that result in decreased fitness; altered species richness and community composition; and mortality. The contribution of the alternatives to the cumulative effects is described in Table Appx - 19.

Big game and upland game are not analyzed further because only routes which physically exist on the ground (open or closed) were evaluated for this plan, because the alternatives would not redistribute recreation from the high use areas to the low use areas, and because none of the alternatives would authorize the construction of routes, authorize use of a route that has not already been subject to ongoing use even if such use was unauthorized, add or remove access to major area destinations, authorize events, create or remove an attraction that would draw new visitors, or authorize an action (such as construction) that would involve worker access.

A.19 AIB-19 (SENSITIVE WILDLIFE SPECIES)

How would the route network alternatives impact BLM Sensitive wildlife species?

The analysis area for BLM Sensitive wildlife species is the TMA because it is the smallest unit that shows all impacts to species within the TMA and most of the species have small home ranges. The temporal scope of analysis is 20 years (see Section 3.1.1). The analysis area includes the San Rafael Swell Recreation Area in which the Dingell Act calls for the protection, conservation, and enhancement of its natural, wildlife, and ecological resources.

Table Appx - 20 summarizes the effects specific to each BLM sensitive wildlife species present in the TMA.

Table Appx - 20: BLM Sensitive Wildlife Species Habitats

Species	Habitat
Amphibians	
Great Plains toad (*Anaxyrus cognatus*)	In Utah, the Great Plains toad is found in floodplains or agriculture habitats where moisture is present. In cold winter months, the Great Plains toad burrows underground and becomes inactive. The TMA contains potential habitat, though occurrences of the Great Plains toad are limited.
Invertebrates	
Western bumble bee (*Bombus occidentalis*)	Potential habitat within the TMA is not abundant (Janousek and Graves 2021), and there is little documentation of western bumblebees within the TMA (USFWS Bee Tool).
Mammals	
Bats	All five BLM sensitive bat species (Big free-tailed bat (*Nyctinomops macrotis*), Fringed myotis (*Myotis thysanodes*), Spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Corynorhinus townsendii*), and Western red bat (*Lasiurus blossevillii*)) are nocturnal insectivores that roost in caves, rock crevices, trees, and mines, and hibernate to some degree during the winter (UDWR 2019a). Individuals forage for insects over desert scrub, sagebrush steppe, montane meadows, and various riparian habitats (UDWR 2019a).

Further information about these species can be found in the UDWR Wildlife Action Plan 2015-2025 (UDWR 2015), NatureServe Explorer (NSE 2024), UDWR Utah Species Field Guide (UDWR 2024), and BLM Instruction Memorandum No. UT IM-2019-005.

Public visitation and route use levels within the TMP vary by season. High-visitation months coincide with the spring young-rearing and nesting periods. Human activity such as public route use, sign installation, route maintenance, roadside parking, and passing results in mortality and injury (Brooks and Lair 2005, Ouren et al. 2007, Trombulak and Frissell 2000) from collisions with OHVs or the destruction of eggs, nests, and burrows. Inner-ear bleeding can occur in small mammals exposed to OHV-generated noise (Ouren et al. 2007). Human activity can trigger behavioral changes like increased flight and vigilance, and result in the disruption or displacement of other essential behaviors including breeding, foraging, hunting, and predator-avoidance activities (Larson et al. 2016, Ouren et al. 2007, Trombulak and Frissell 2000). Species' responses may 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). Non-native species spread can reduce native vegetative cover and change the physical and chemical (e.g., 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)) resulting in decreased native wildlife populations, species richness, and community composition (Larson et al. 2016, Ouren et al. 2007, Trombulak and Frissell 2000). Extreme weather such as drought, extreme heat or cold, or heavy snowfall can exacerbate these effects. Closed designations eliminate the OHV effects.

The nature of the impacts of Alternatives A through D are the same as previously described. Table Appx - 21 shows the difference in the magnitude of the impacts between the alternatives by placing a species-specific buffer on the OHV-Open and OHV-Limited roads that intersect the species habitats. Riparian areas, which are particularly important for most wildlife species, are analyzed in Section 3.3.8.

Table Appx - 21: Acres of BLM Sensitive Wildlife Potential Habitat Within Species-Specific Buffers of OHV-Open and OHV-Limited Routes by Alternative

Species	Buffer Distance	Acres of Habitat in TMA	Alternative A Area of Impact (Acres)	Alternative B Area of Impact (Acres)	Alternative C Area of Impact (Acres)	Alternative D Area of Impact (Acres)
Great Plains toad	100 meters	542,269	49,677	44,155	60,354	42,428
Western bumblebee	100 meters	270,456	17,441	14,143	19,166	23,093
Big free-tailed bat	50 meters	1,047,742	40,060	34,646	46,403	55,915
Fringed myotis	50 meters	1,130,604	43,814	36,442	52,125	63,718
Spotted bat	50 meters	939,049	33,017	27,537	40,020	49,574
Townsend's big-eared bat	50 meters	1,296,437	51,109	42,930	61,014	74,748
Western red bat	50 meters	8,952	232	206	366	499

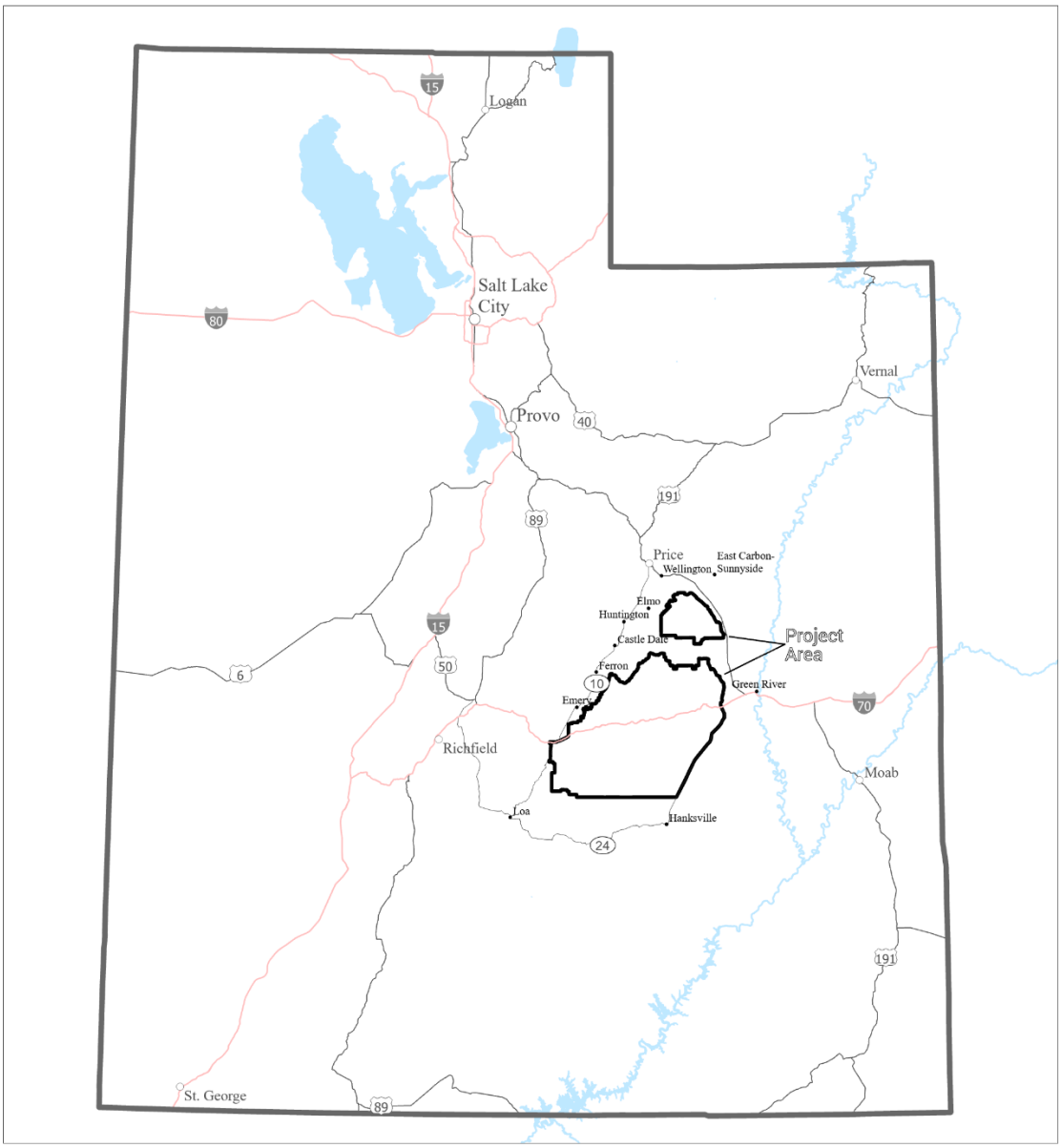
The past, present and foreseeable trends and activities listed in Section 3.2 that are within the TMA accumulate human activity-related effects to BLM sensitive wildlife species including disturbance or displacement; loss of prey species; reduced reproductive success; alterations in species richness and community composition; burrowing, brooding, and foraging habitat; mortality; and habitat fragmentation. The contribution of the alternatives to the cumulative effects is described in Table Appx - 21.

Sensitive wildlife and their habitats are not analyzed further because only routes which physically exist on the ground (open or closed) were evaluated for this plan, because the alternatives would not redistribute recreation from the high use areas to the low use areas, and because none of the alternatives would authorize the construction of routes, authorize use of a route that has not already been subject to ongoing use even if such use was unauthorized, add or remove access to major area destinations, authorize events, create or remove an attraction that would draw new visitors, or authorize an action (such as construction) that would involve worker access.

APPENDIX B MAPS

B.1 MAP 1: SAN RAFAEL SWELL TMA

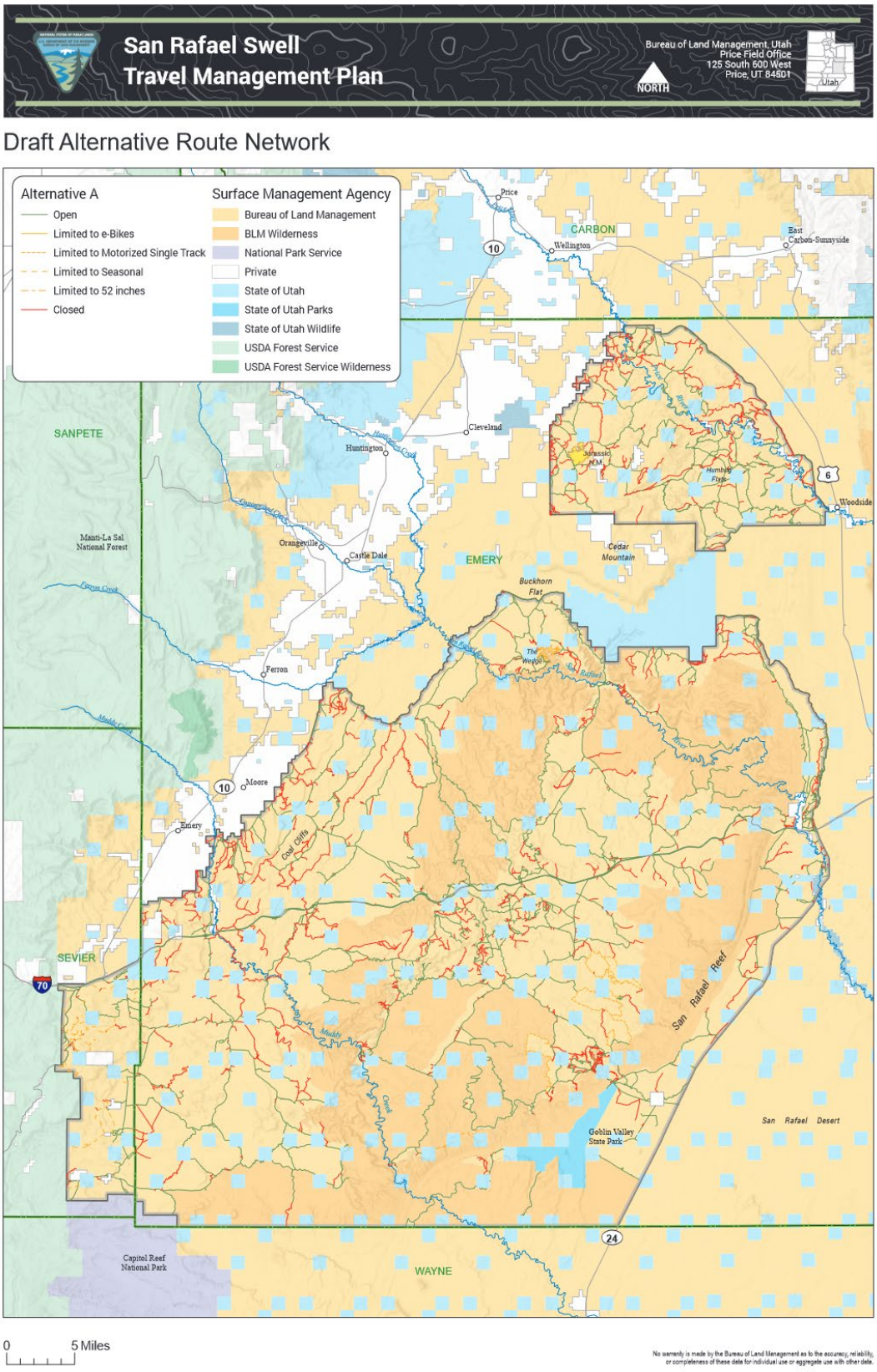
Location Map



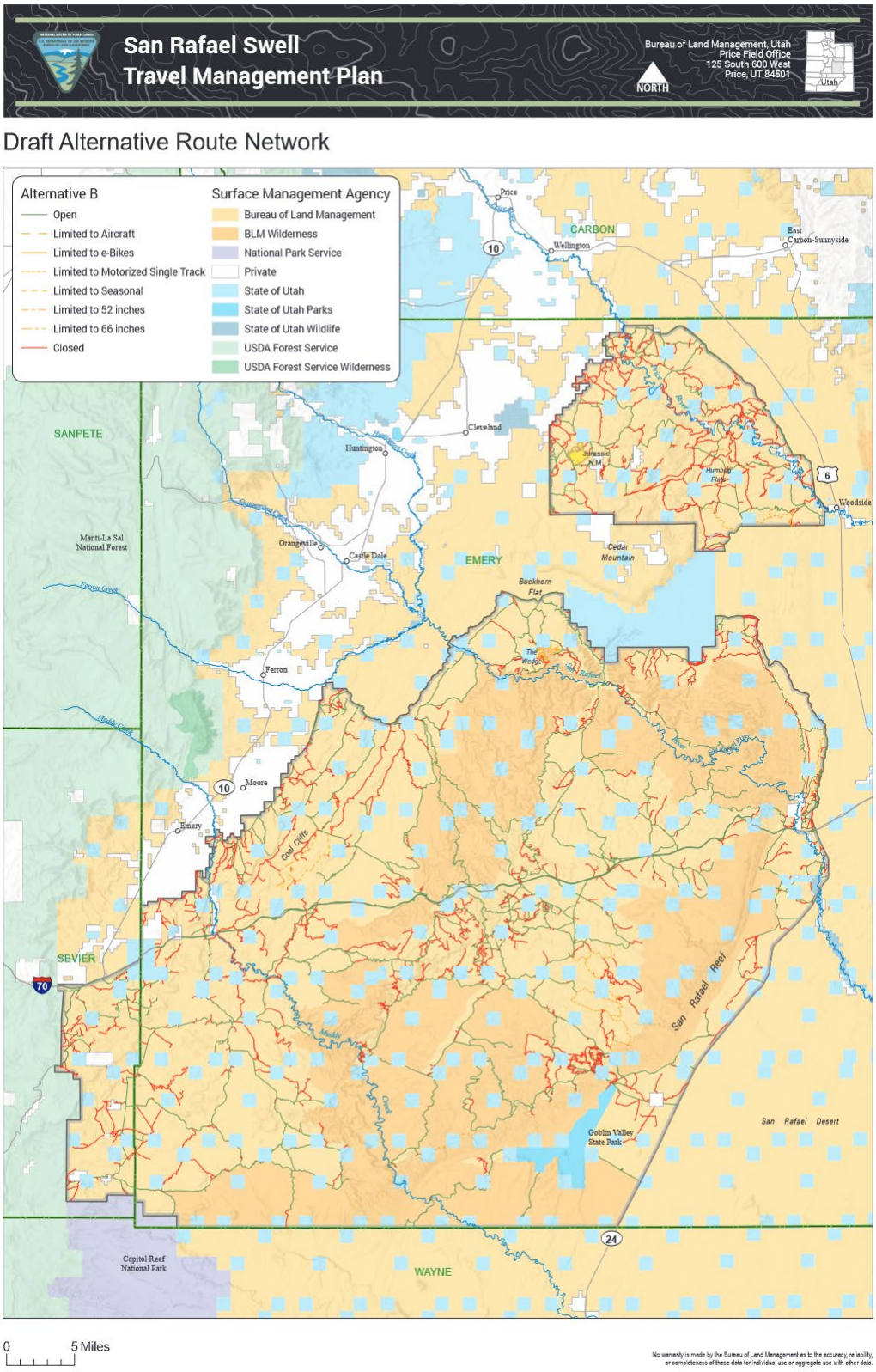
0 30 Miles

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.

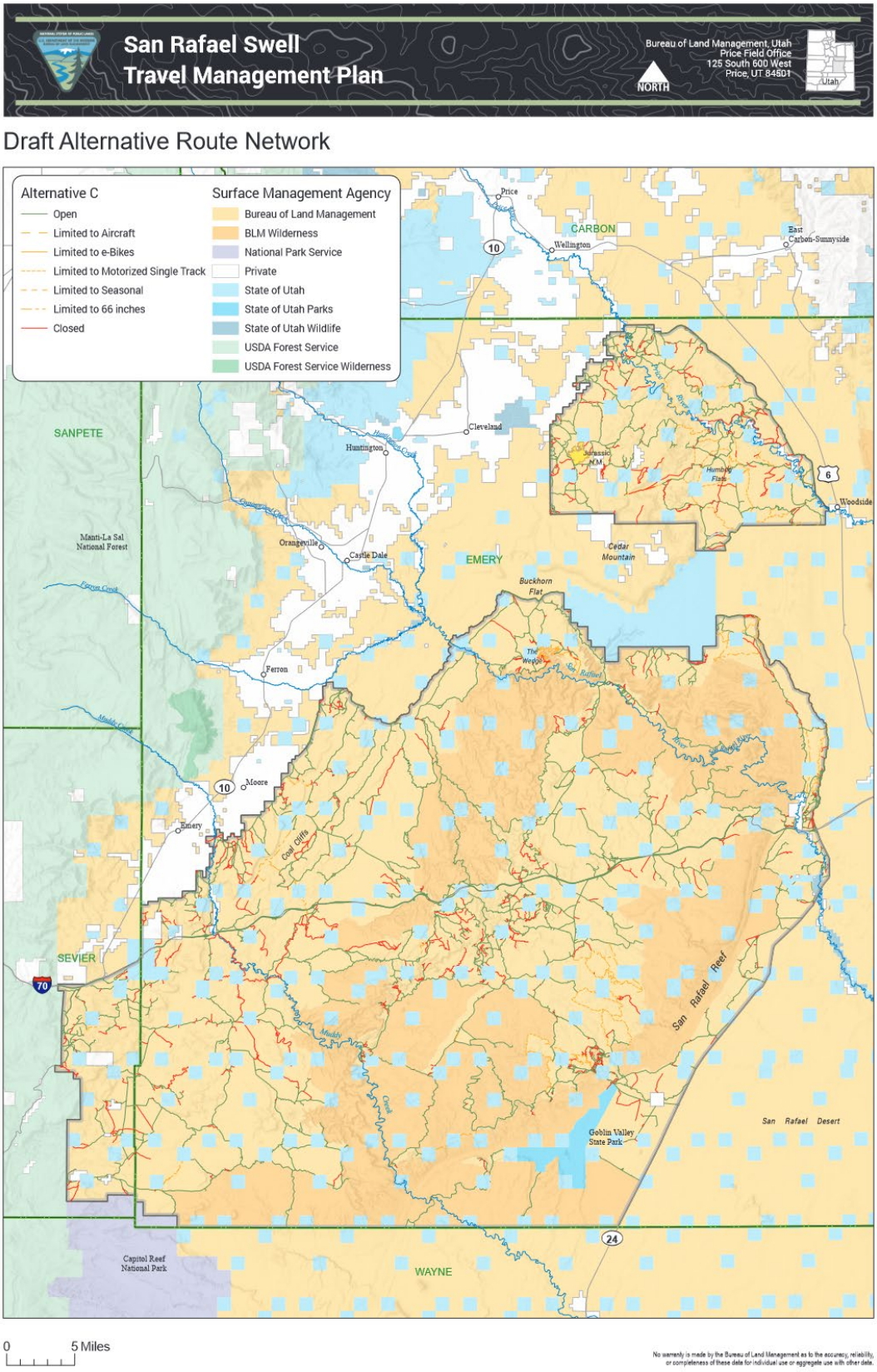
B.2 MAP 2: ALTERNATIVE A ROUTE NETWORK



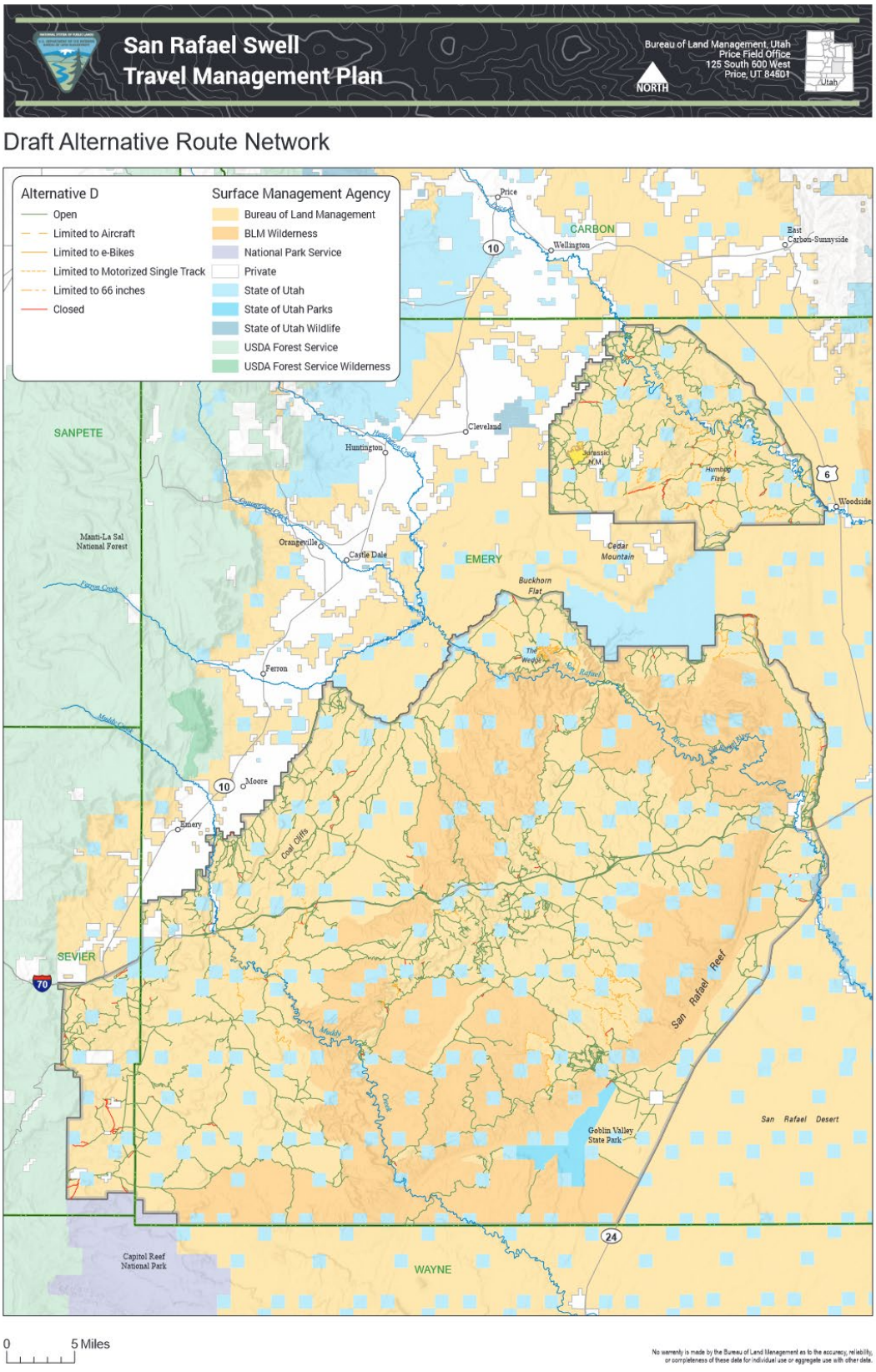
B.3 MAP 3: ALTERNATIVE B ROUTE NETWORK



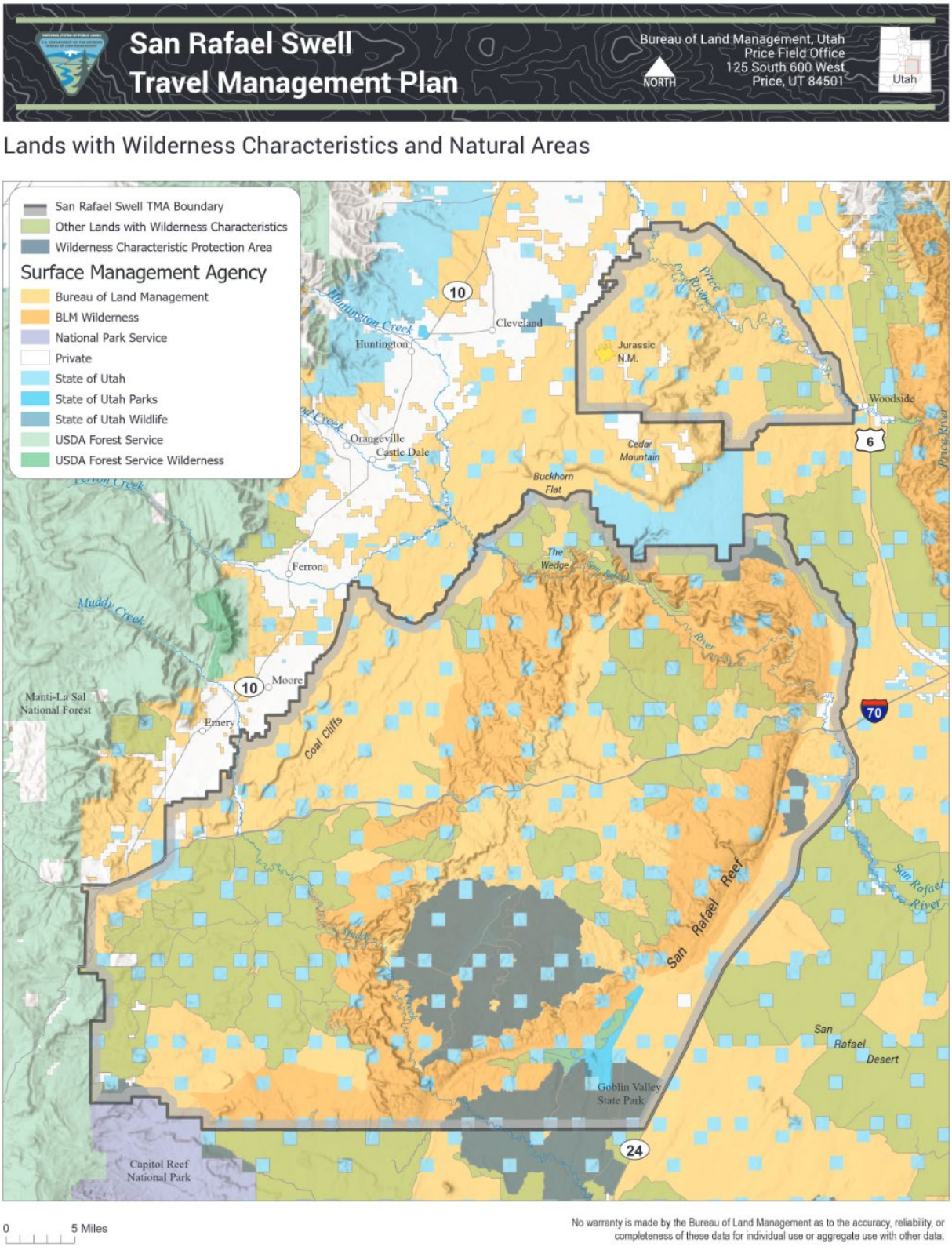
B.4 MAP 4: ALTERNATIVE C ROUTE NETWORK



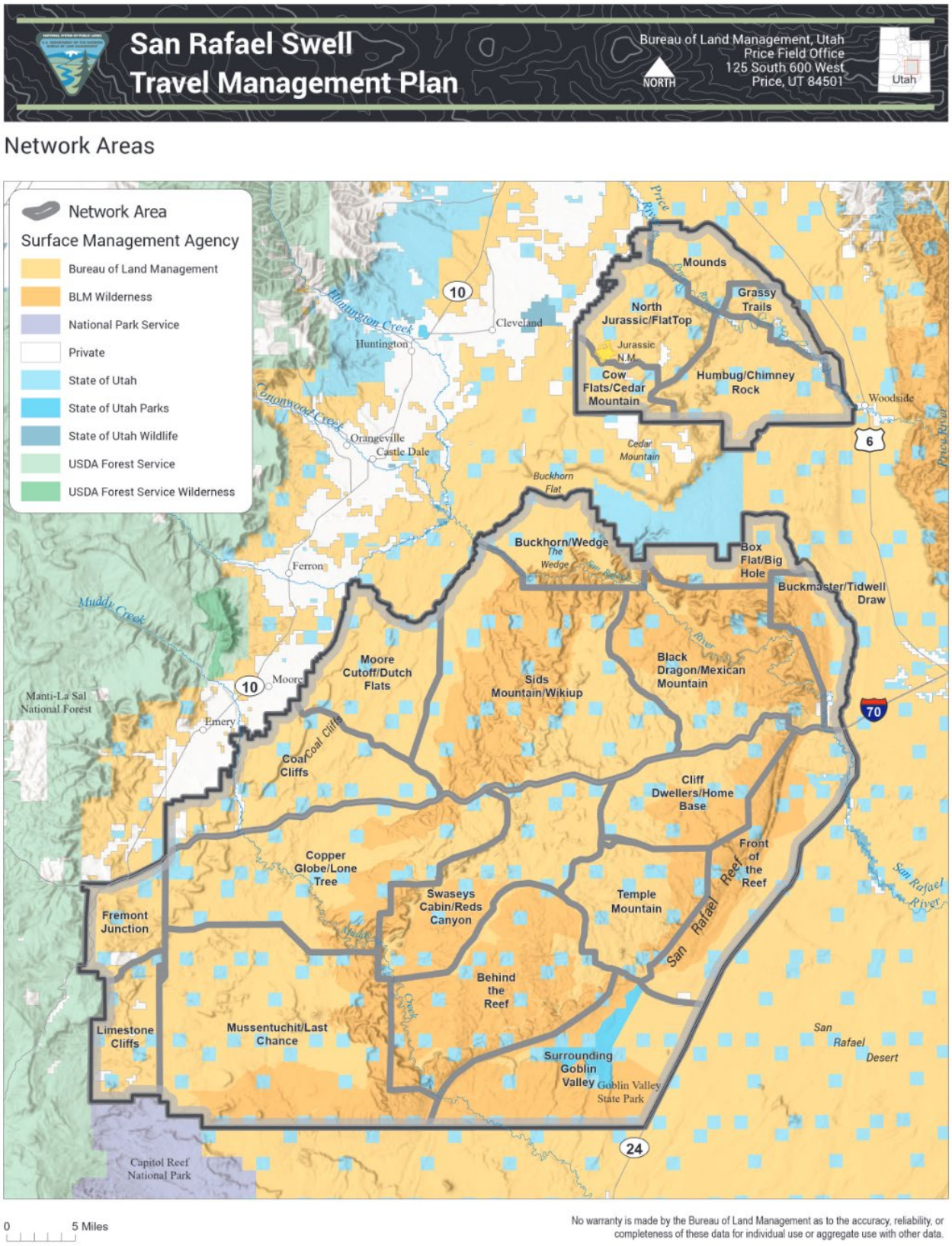
B.5 MAP 5: ALTERNATIVE D ROUTE NETWORK



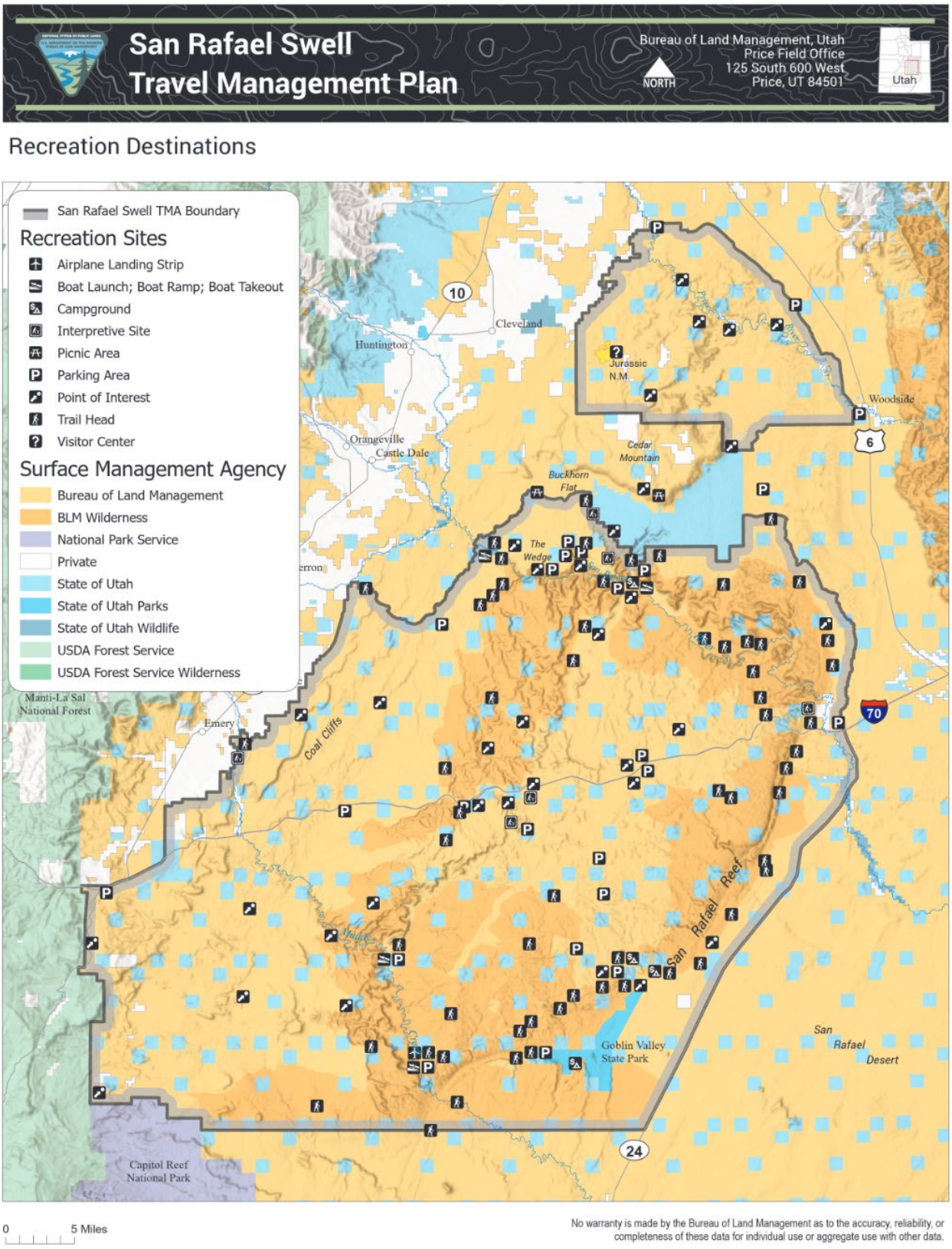
B.6 MAP 6: LANDS WITH WILDERNESS CHARACTERISTICS AND NATURAL AREAS



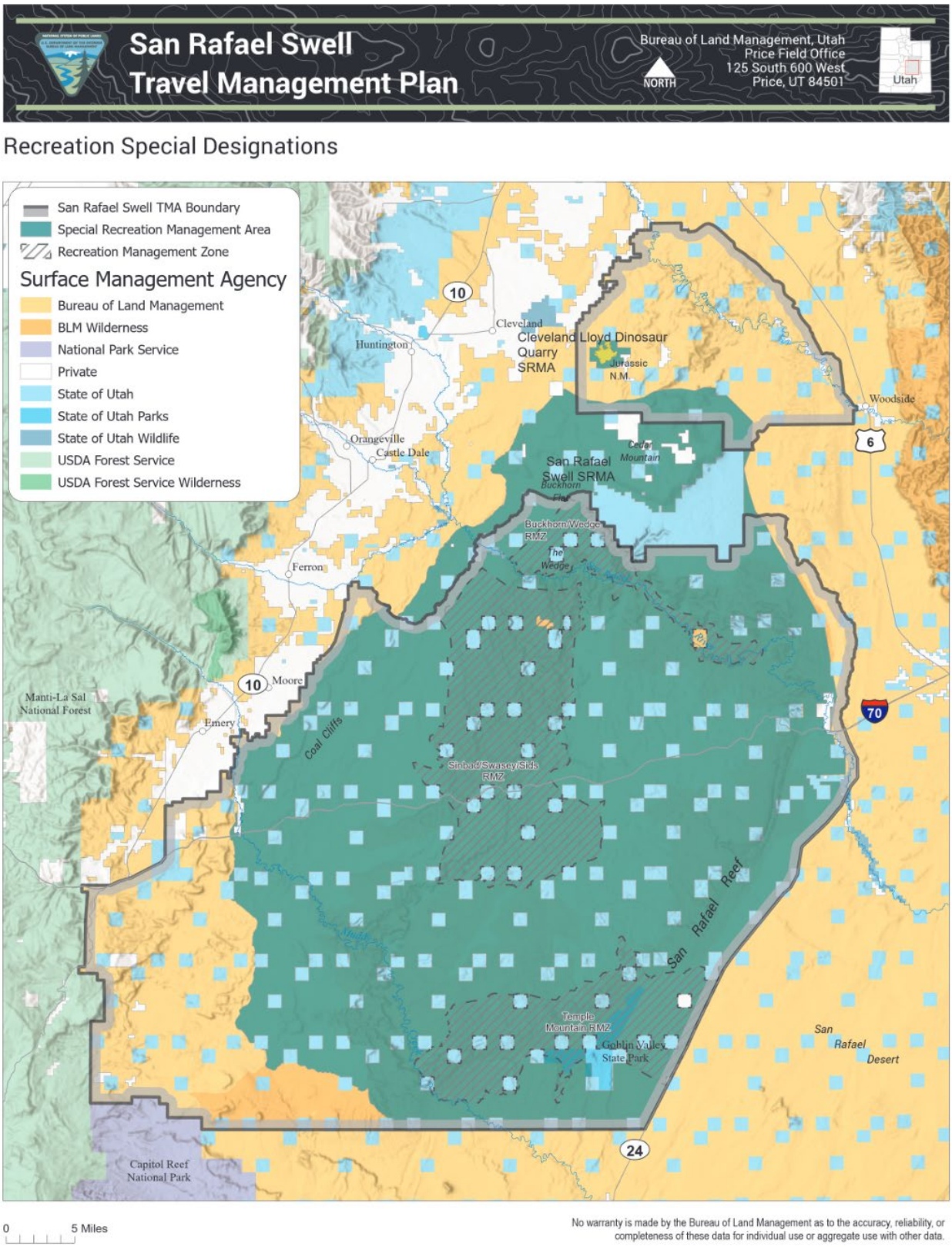
B.7 MAP 7: ROUTE NETWORK GEOGRAPHIC AREAS



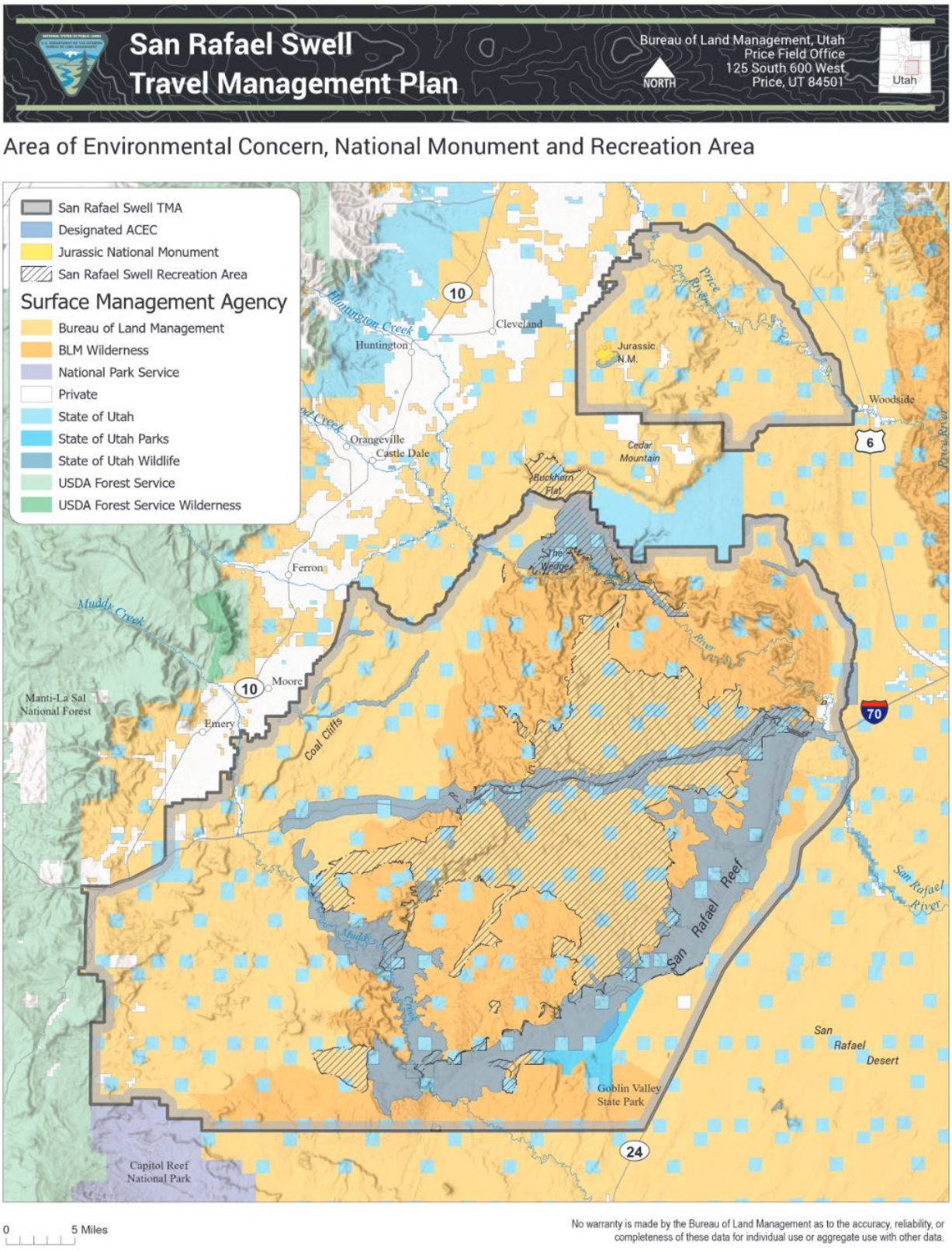
B.8 MAP 8: RECREATION DESTINATIONS



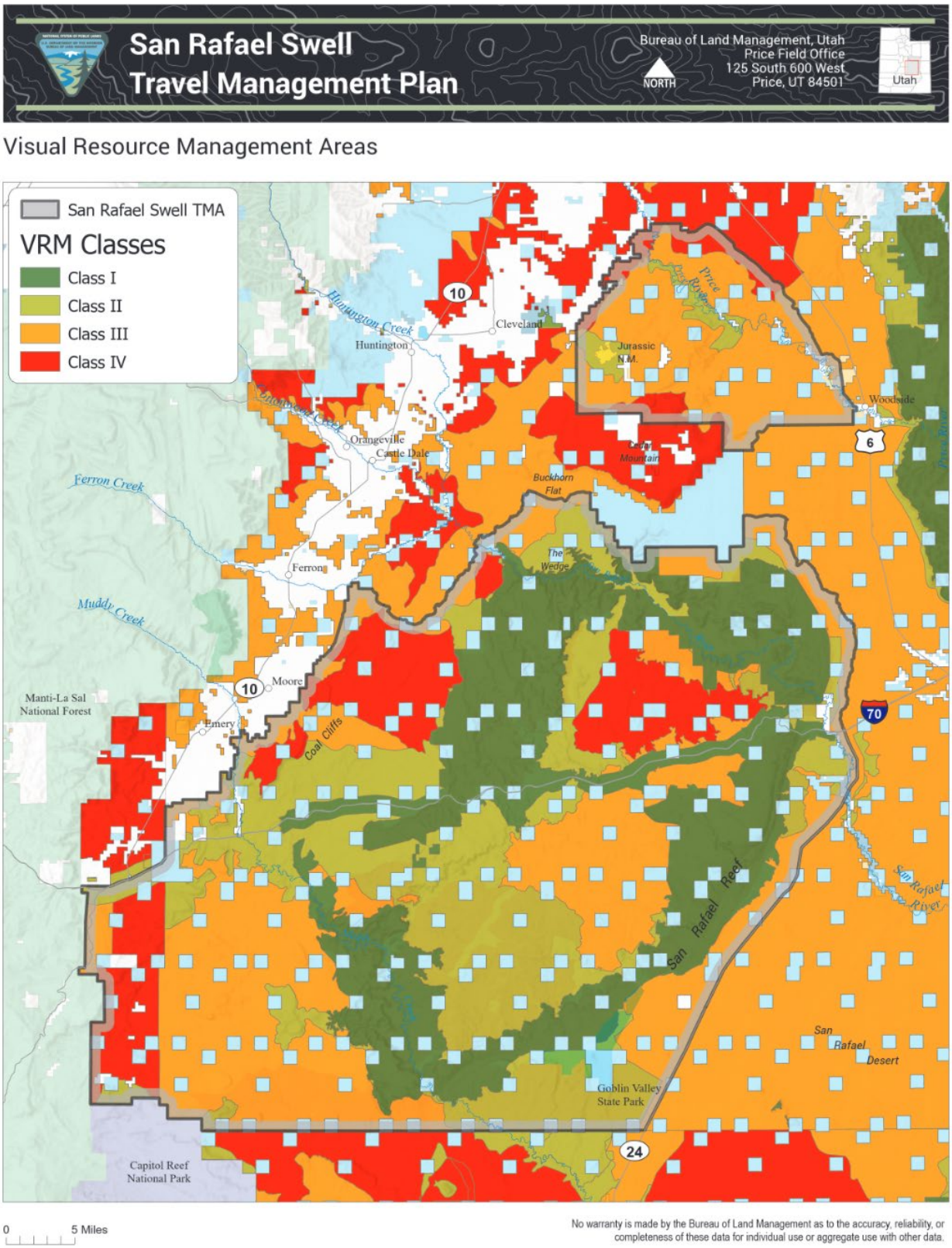
B.9 MAP 9: RECREATION SPECIAL DESIGNATIONS



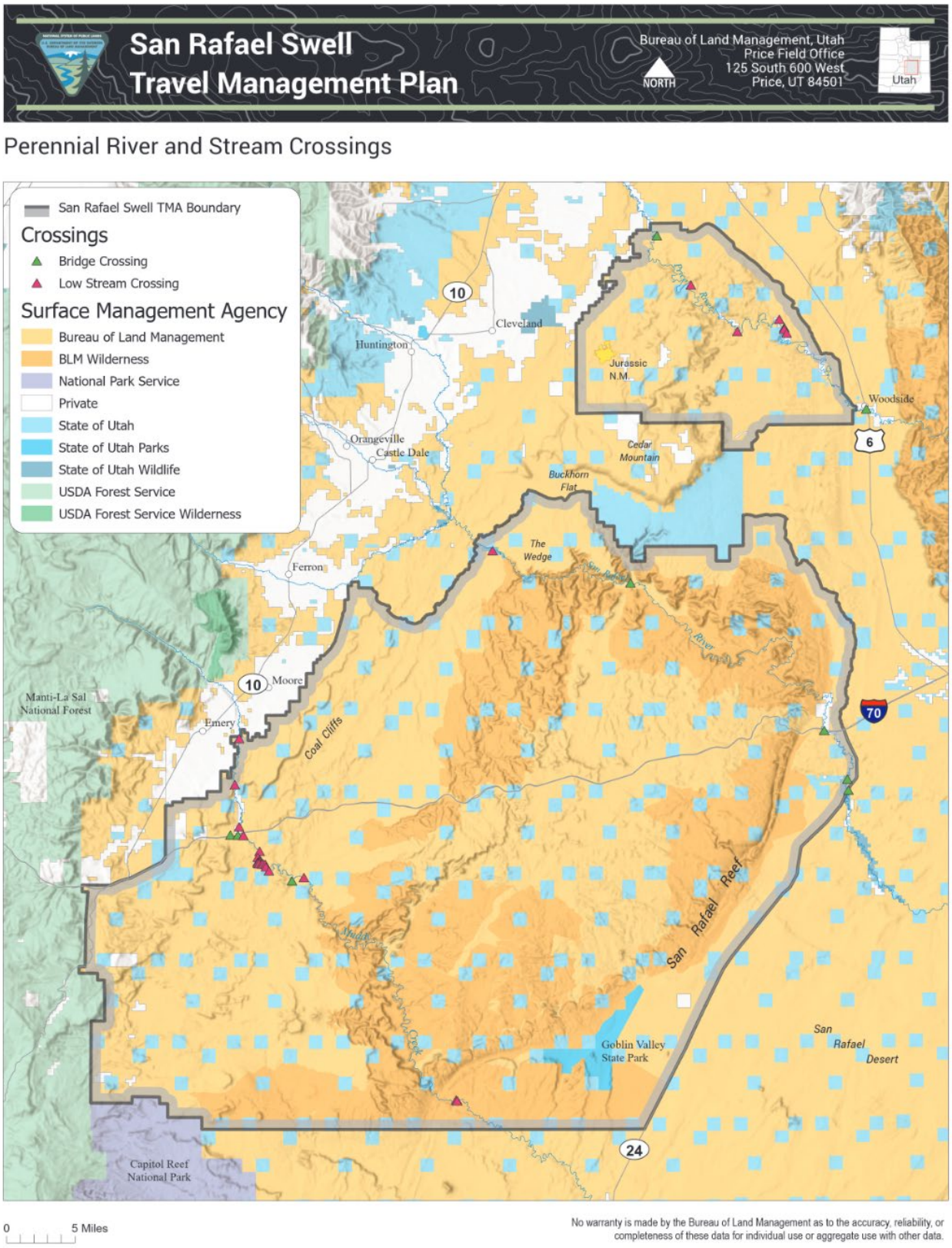
B.10 MAP 10: ACECS, JURASSIC NATIONAL MONUMENT, AND SAN RAFAEL SWELL RECREATION AREA



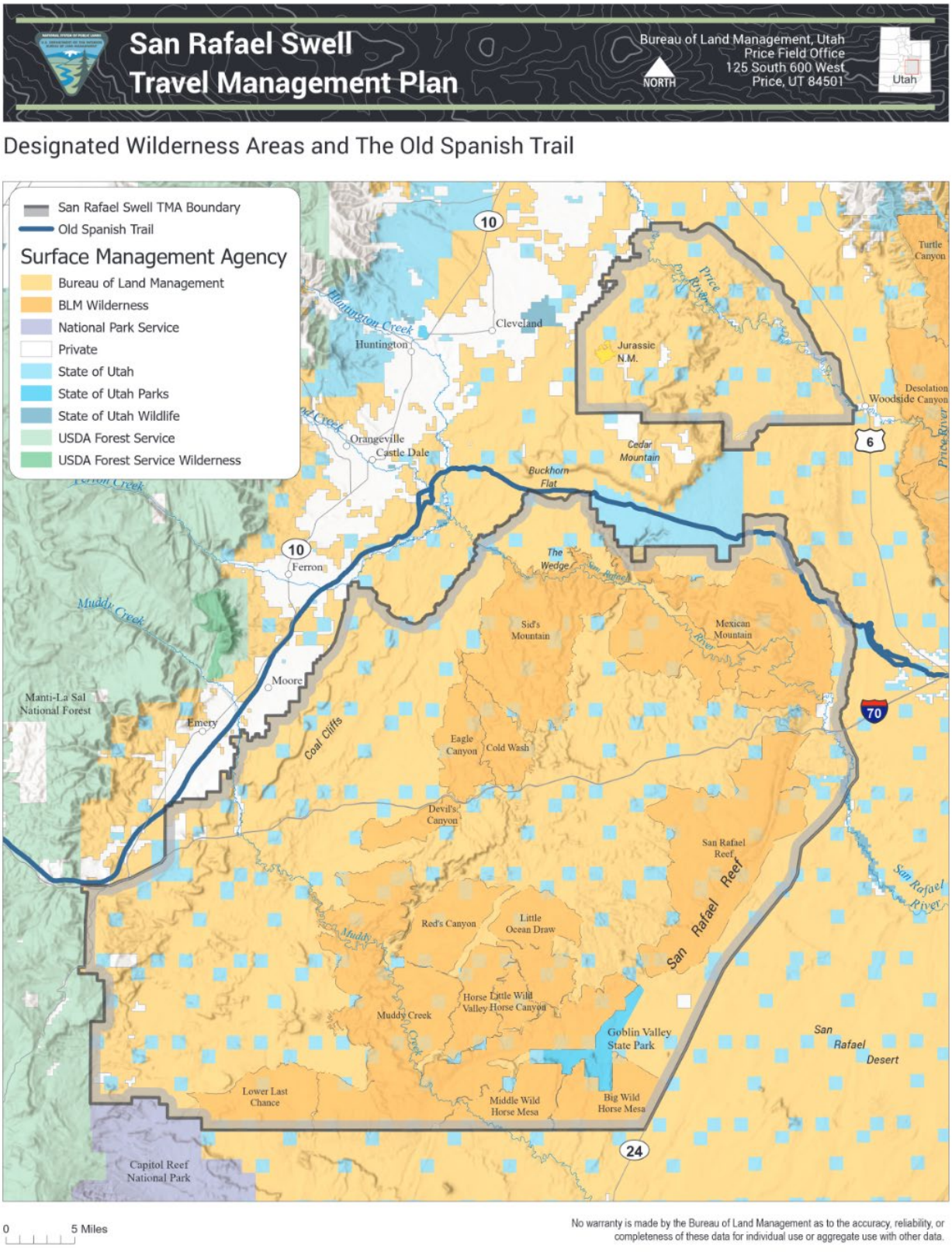
B.11 MAP 11: VISUAL RESOURCE MANAGEMENT AREAS



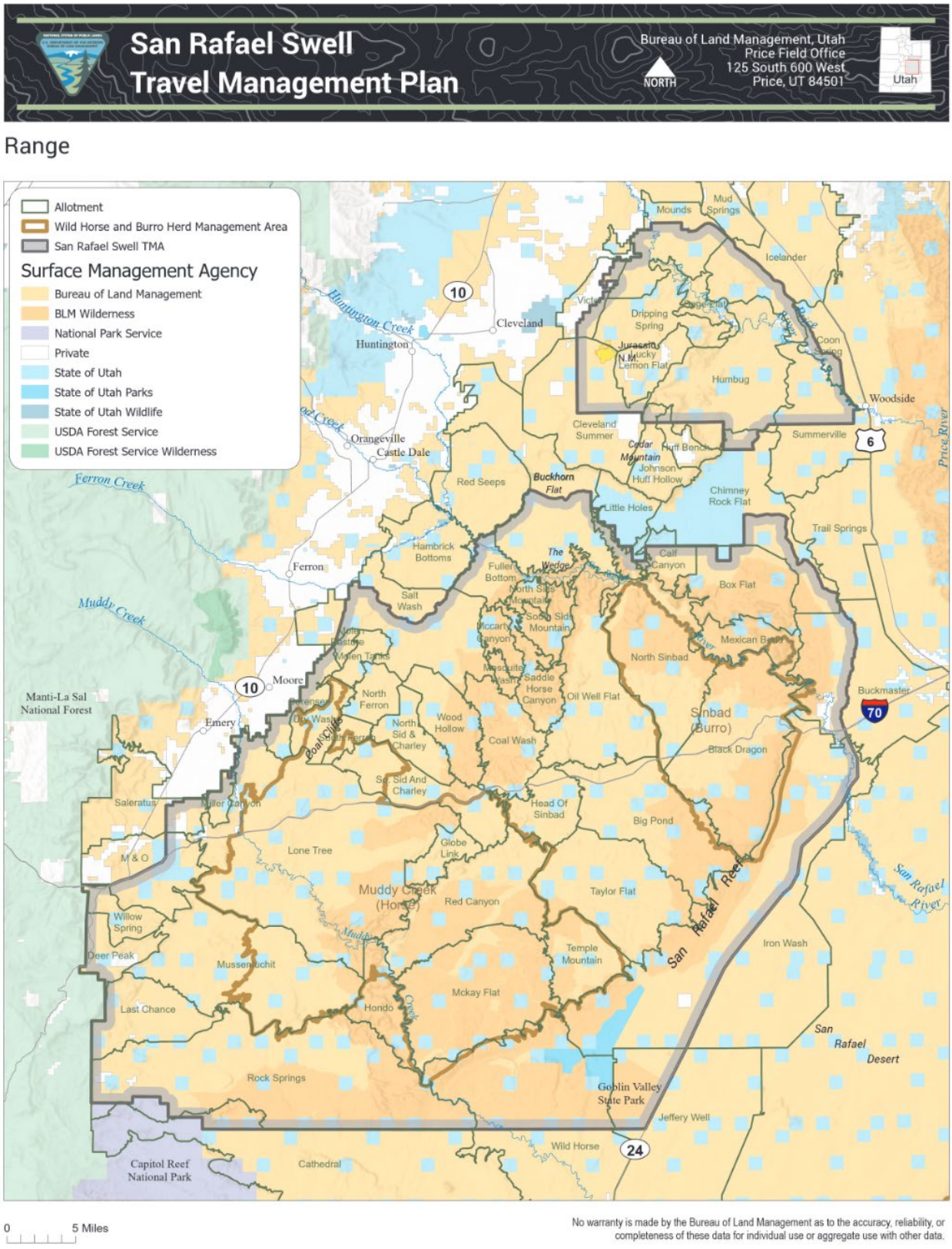
B.12 MAP 12: PERENNIAL RIVER AND STREAM CROSSINGS



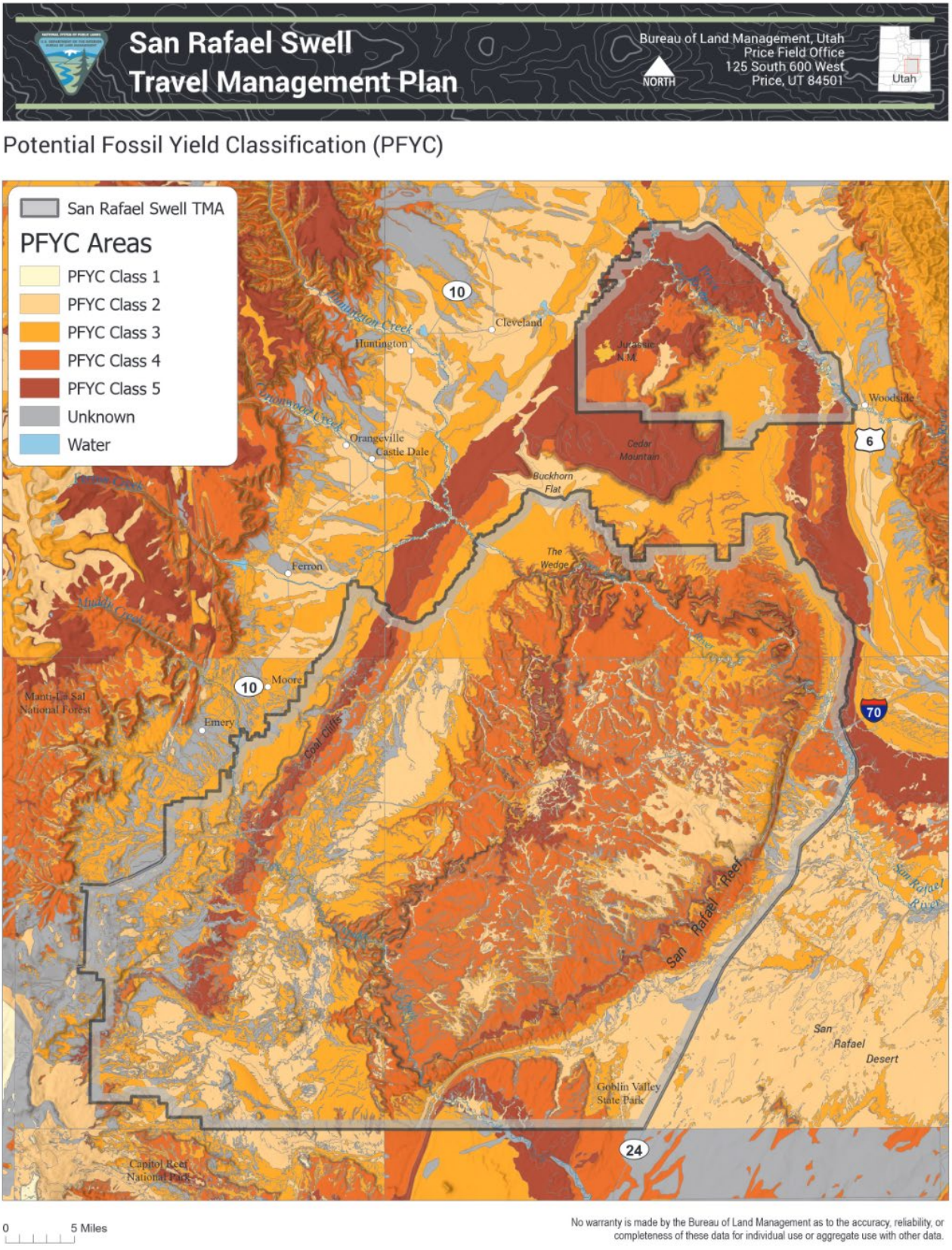
B.13 MAP 13: DESIGNATED WILDERNESS AREAS AND THE OLD SPANISH NATIONAL HISTORIC TRAIL



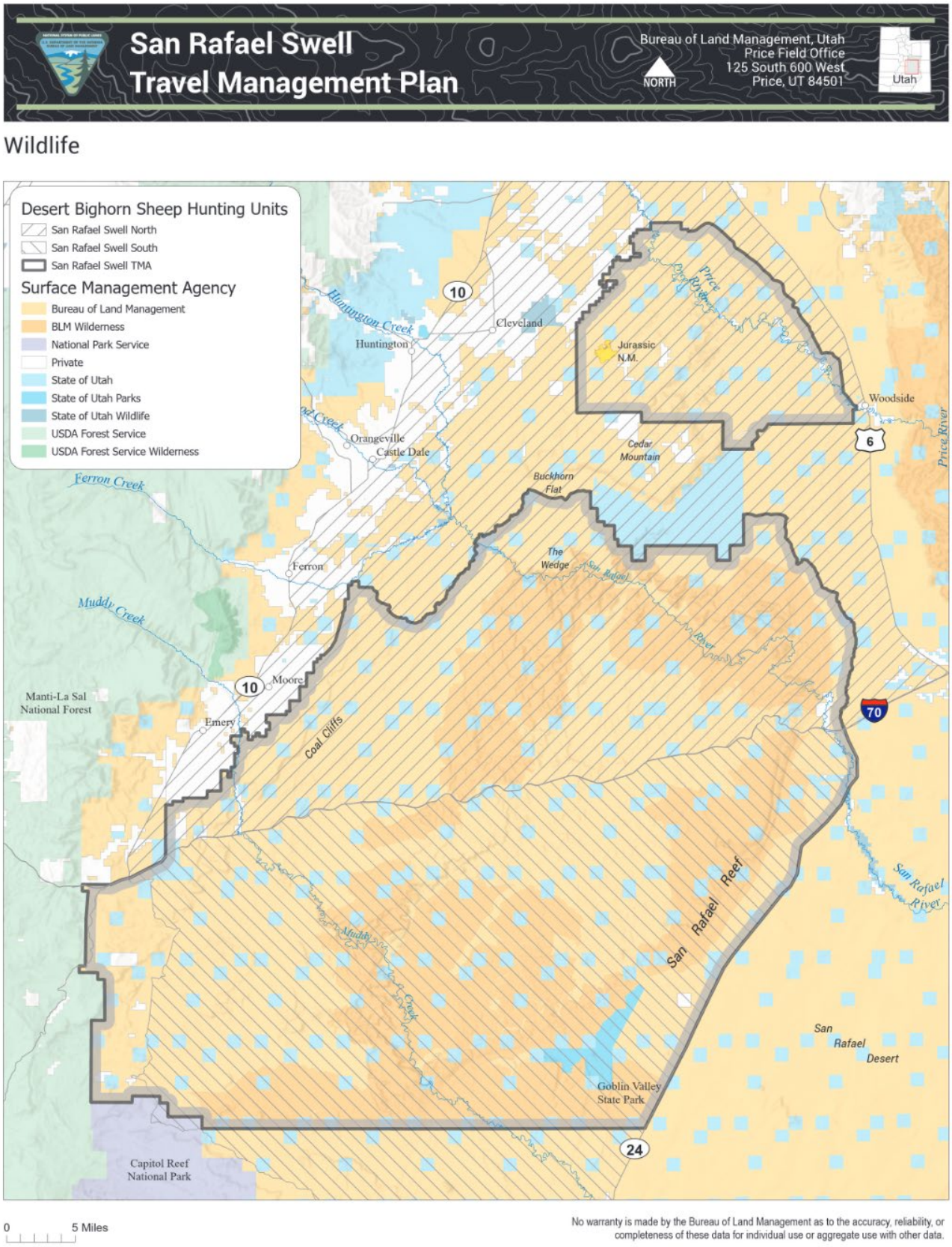
B.14 MAP 14: GRAZING ALLOTMENTS AND WILD HORSE AND BURRO HERD MANAGEMENT AREAS



B.15 MAP 15: POTENTIAL FOSSIL YIELD CLASSIFICATION AREAS



B.16 MAP 16: WILDLIFE ANALYSIS AREA



APPENDIX C ROUTE NETWORK GEOGRAPHIC AREAS

During the re-review process in 2023, the BLM broke the entire TMP planning area into 22 route network geographic areas. BLM created these areas based on natural separating features on the ground such as topography, major roads (Interstate 70), and the already established TMP boundary. In addition to those features, BLM also picked the route network geographic areas based on different recreational experiences and opportunities. The BLM utilized the route network geographic areas to ensure the preliminary route alternatives considered the network connectivity in these smaller areas, to break down the larger TMA into smaller units for reader clarity and area-specific resource concerns, and to document how resource impacts differ by alternative by opening and closing routes within each area.

Routes Not included in the Route Network Geographic Areas:

There are 6 routes that are paved routes or highways, and they were not incorporated into the route network geographic area mileage analysis. Removing these routes helps show the total miles of OHV routes without having a skewed mileage analysis in a few of the route network geographic areas. All these routes are open in all alternatives and were often used as a boundary to separate route network geographic areas. Details about these routes can be seen in Table Appx - 22.

Table Appx - 22: Paved Routes or Highways

Route ID	Miles	Route Name
SS2535	5	Goblin Valley/Temple Wash
SS3315	13	Moore Cutoff
SS5317	5	Miller Canyon
SS5388	97	Interstate 70
SS6119	9	Hwy 72
SS6120	2	Ivie Creek Frontage Road
Total	**131**	

Below is a description of the recreational uses, a list of resources present, a list of routes, and a table to show the milage breakdown for each alternative in the 22 route network geographic areas.

C.1 BEHIND THE REEF

The Behind the Reef area is made up of unique and scenic geologic features and deep, narrow canyons. Recreation opportunities within this area are OHV riding, dispersed camping, cultural/historic viewing, scenic viewing, canyoneering, hiking, geologic viewing, scenic viewing, hunting, mountain biking, geocaching, and photography. This route network geographic area contains a part of the congressionally designated San Rafael Swell Recreation Area. A large majority of this area is made up of Wilderness, so these potential network routes are primarily boundary roads to the Wilderness Areas, and they provide access to popular trailheads such as Wild Horse Canyon, Crack Canyon, Chute Canyon, Hidden Splendor, and Baptist Draw. The Behind the Reef Trail is one of the most popular OHV trails in the TMA, as it is scenic challenging and accesses historic sites. The first 6.7 miles of the Behind the Reef Road is a Class B maintained road and provides access to many dispersed campsites and non-motorized trailheads. At Chute Canyon, the county maintenance stops and that is the start of the Behind the Reef Trail. The next 7 miles of this trail is a more difficult, high clearance 4X4 route that climbs up and along the backside of the San Rafael Reef. Near Ding Canyon, the trail narrows to 52" or less and full-size vehicles travel north toward McKay Flat to finish the loop. Narrower vehicles can continue along the backside of the Reef all the way to Hidden Splendor where they can view another historic mining district and see where Muddy Creek cuts through the Reef. Hidden Splendor can also be accessed by a Class B road, and it serves as a backcountry staging area. Historic site viewing is popular at Hidden Splendor, and it is also used as a canyoneering/hiking trailhead for several nearby trails in the Muddy Creek Wilderness. It is also the site of a take-out of Muddy Creek for those who float through the Chute of the Muddy when water flows are high enough. There are two backcountry airstrips in this route network geographic area, the Hidden Splendor Airstrip and the McKay Flat Airstrip. This geographic area also contains the Waterfall Trail, which is a difficult single-track motorcycle trail that makes up a portion of the east boundary of the Little Ocean Draw Wilderness Area. This motorcycle trail is an extension to the single-track system in the Temple Mountain route network geographic area. Another growing activity in this area is multi-day mountain bike packing trips, both vehicle-supported and self-supported. This entire area gets a large amount of dispersed camping. This geographic area is also home of the some of the most popular slot canyons in the San Rafael Swell, including Baptist Draw, Little Wild Horse, Crack Canyon, Chute Canyon, Ding and Dang Canyons, and the Chute of the Muddy. Providing OHV access to and near these slot canyons is important for many visitors and having maintained motorized access also helps search and rescue activities.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. Most of this geographic area is managed as wilderness as it contains the Little Ocean Draw Wilderness, Little Wild Horse Canyon Wilderness, Horse Valley Wilderness, and portions of the Muddy Creek Wilderness. Portions of the Muddy Creek Crack Canyon and Reds Canyon BLM Natural Areas are within this area. The South San Rafael Reef ACEC, Muddy Creek ACEC, and Wild Horse Canyon Rock Art ACEC are within this area. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Southwest Willow Flycatcher, Barnaby Reed-Mustard, Jones Cycladenia, Last Chance Townsendia, San Rafael Cactus, and the Wright Fishhook Cactus. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Behind the Reef route network geographic area: SS2580, SS2703, SS2704, SS2706, SS2708, SS2709, SS2710, SS2711, SS2716, SS2717, SS2718, SS2719, SS4129, SS4226, SS4226A, SS4227, SS4228, SS4229, SS4230, SS4231, SS4233, SS4234, SS4237, SS4238, SS4239, SS4240, SS4241, SS4242, SS4243, SS4244, SS4245, SS4246, SS4247, SS4248, SS4249, SS4250, SS4251, SS4252, SS4253, SS4254, SS4256, SS4257, SS4258, SS4259, SS4260, SS4262, SS4263, SS4264, SS4265, SS4266, SS4267, SS4268, SS4269, SS4270, SS4271, SS4272, SS4273, SS4274, SS4275, SS4276, SS4281, SS4282, SS4283, SS4284, SS4287, SS4288, SS4289, SS4291, SS4292, SS4294,

SS4295, SS4295A, SS4298, SS4299, SS4300, SS4301, SS4302, SS4303, SS4304, SS4305, SS4306, S4307, SS4308, SS4311, SS4312, SS4313, SS4314, SS4315. SS4316, SS4318, and SS4322.

The Behind the Reef route network geographic area is approximately 91,605 Acres.

Behind the Reef Total Miles: 104

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	76	Open to all use	73	Open to all use	82	Open to all use	91
Limited to vehicles less than 52"	3	Limited to vehicles less than 52"	3	Limited to vehicles less than 66"	3	Limited to single-track vehicles	12
Limited to single-track vehicles	12	Limited to aircraft	0	Limited to single-track vehicles	12	Limited to aircraft	1
Closed	13	Closed	28	Limited to aircraft	1	Closed	1
				Closed	6		

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 13 miles (12%) of the evaluated routes in this area would remain closed, and 15 miles (14%) would remain limited.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 28 miles (26%) of the evaluated routes would be closed, and 4 miles (4%) would be limited.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 6 miles (6%) of the evaluated routes would be closed and 16 miles (16%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 0.8 miles (1%) of the evaluated routes would be closed and 13 miles (12%) would be limited.

In addition to the evaluated routes, there were 8 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.2 BLACK DRAGON / MEXICAN MOUNTAIN

The Black Dragon/Mexican Mountain area is made up of large flats, benches, towering buttes, and deep canyons, and it contains a part of the San Rafael Swell Recreation Area. Recreation opportunities within this area include OHV riding, dispersed camping, scenic viewing, cultural/historic viewing, climbing, canyoneering, mountain biking, horseback riding, hiking, backpacking, wildlife viewing, hunting, and occasionally extreme kayaking. On the northern side of this geographic area is the Mexican Mountain Wilderness Area, so several of routes provide access to trailheads and overlooks. The Black Dragon Canyon route is a popular OHV route, that provides access to the Black Dragon Rock Art ACEC which is an accessible destination for viewing impressive Barrier Canyon style rock art. Mexican Mountain Road is a long cherry-stemmed route into the Mexican Mountain Wilderness Area and provides opportunities for dispersed camping and access to trailheads such as the Dillon Wall for climbing, the Black Boxes for canyoneering, and remote hiking/backpacking trips. The routes in the southern half of the geographic area provide access to lesser-used wilderness trailheads such as Swasey's Leap and Lock Hart Boxes. Closer to I-70, routes access Jackass benches, where wild burros can be found, and easy OHV loops for touring opportunities. Bighorn sheep can be found in the deep canyons in the southeast corner of the area. Popular dispersed camping areas are Mexican Mountain Road, Sinkhole Flat, and the mouth of Black Dragon Canyon.

General resources within this route network geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. Most of this geographic area is managed as wilderness as it contains a portion of the Mexican Mountain Wilderness. The Mexican Mountain Lands with Wilderness Characteristic inventoried unit and portions of the San Rafael Canyon ACEC, I-70 Scenic ACEC, and the entire Black Dragon Rock Art ACEC are within this area. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Yellow-billed Cuckoo, Barnaby Reed-Mustard, Jones Cycladenia, Last Chance Townsendia, San Rafael Cactus, and the Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Black Dragon/Mexican Mountain route network geographic area: SS2046, SS2057, SS2058, SS2059, SS2060, SS2061, SS2062, SS2064, SS2065, SS2066, SS2067, SS2068, SS2069, SS2070, SS2071, SS2072, SS2073, SS2074, SS2075, SS2076, SS2078, SS2079, SS2080, SS2081, SS2082, SS2083, SS2086, SS2088, SS2089, SS2089A, SS2100, SS2108, SS2108A, SS2109, SS2123, SS2124, SS2125, SS2132, SS2133, SS2134, SS2136, SS2140, SS2141, SS2142, SS2144, SS2145, SS2148, SS2149, SS2150, SS2151, SS2152, SS2153, SS2157, SS2160, SS2161, SS2162, SS2168, SS2170, SS2380, SS2382, SS2384, SS2385, SS2386, SS2387, SS2388, SS2389, SS2390, SS2391, SS2392, SS2393, SS2394, SS2397, SS2398, SS2399, SS2400, SS2401, SS2405, SS2406, SS2410, SS2411, and SS2820.

The Black Dragon/Mexican Mountain route network geographic area is approximately 87,656 acres.

Black Dragon/Mexican Mountain Total Miles: 77

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	54	Open to all use	56	Open to all use	65	Open to all use	77
Closed	23	Closed	20	Closed	11	Closed	0

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 23 miles (30%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 20 miles (27%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 11 miles (15%) of the evaluated routes would be closed.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 0.2 miles (<1%) of the evaluated routes would be closed.

In addition to the evaluated routes, there were 12 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.3 BOX FLAT / BIG HOLE

The Box Flat/Big Hole area is made up of expansive flats, benches, and several small canyons. Recreation opportunities within this area are cultural/historic site viewing, scenic viewing, OHV riding, horseback riding, hiking, hunting, and occasional backpacking. On the southern side of this geographic area is the Mexican Mountain Wilderness, so several of the area routes provide access wilderness trails or overlooks. The boundary route on the northwest edge of the wilderness, which leads to a popular rock art panel, used to be within the WSA; it now forms part of the Mexican Mountain Wilderness boundary, and the part of the WSA east of the road was released. The routes in the northeast portion of this route network geographic area comprise the south end of the Chimney Rock trail system. There are several single-track motorcycle routes, and some popular OHV routes that provide loop connections and access to historic sites. There are two ACECs in this geographic area, the Cottonwood Canyon Rock Art ACEC, and the Big Hole Historic ACEC. Both areas demonstrate that humans have occupied the areas for a long time and used these reliable water sources to travel across this landscape. The Old Spanish National Historic Trail crosses through this area, and some of these potential network routes are part of the OHV Heritage Loop that offers a self-guided tour that can be accessed via smart devices. A few features in this area are the Head Rock, which is a geologic landmark sketched on the Gunnison Expedition to identify where the Old Spanish Trail turned to the west, and remnants of an old railroad grade and historic wagon roads.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains a portion of the Mexican Mountain Wilderness the entirety of Mexican Mountain BLM Natural Area and portions of the Mexican Mountain and Lost Springs Wash Lands with Wilderness Characteristics inventory units. The Big Hole and Cottonwood Canyon Rock Art ACECs are within this area. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed-Mustard, Jones Cycladenia, San Rafael Cactus, and the Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Box Flat/Big Hole route network geographic area: SS2172, SS2173, SS2174, SS2174A, SS2174B, SS2176, SS2177, SS2179, SS2181, SS2182, SS2183, SS2184, SS2186, SS2188, SS2189, SS2194, SS2195, SS2199, SS2204, SS2205, SS2206, SS2209, SS2211, SS2214, SS2217, SS2218, SS2219, SS2221, SS2224, SS2226, SS2228, SS2229, SS2230, SS2232, SS2233, SS2234, SS2235, SS2236, SS2237, SS2238, SS2239, SS2241, SS2242, SS2243, SS2245, SS2246, SS2251, SS2252, SS2255, SS2257, SS2259, SS2260, SS2261, SS2263, SS2264, SS2265, SS2267, SS2268, SS2269, SS2270, SS2272, SS2273, SS2276, and SS2277.

The Box Flat/Big Hole route network geographic area is approximately 23,063 acres.

Box Flat/Big Hole Total Miles: 66

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	37	Open to all use	21	Open to all use	37	Open to all use	50
Closed	29	Closed	45	Limited to vehicles less than 66"	8	Limited to vehicles less than 66"	7
				Limited to single-track vehicles	7	Limited to single-track vehicles	7
				Closed	13	Closed	2

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 29 miles (47%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 45 miles (68%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 13 miles (20%) of the evaluated routes would be closed and 15 miles (23%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 2 miles (3%) of the evaluated routes would be closed and 14 miles (21%) would be limited.

In addition to the evaluated routes, there were 12 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.4 BUCKHORN / WEDGE

Buckhorn/Wedge is one of the PFO's recreation management zones and is the most-visited part of the TMA. Recreation opportunities within this area are scenic viewing, cultural/historic viewing, camping, mountain biking, OHV riding, hunting, rock climbing, horseback riding, hiking, boating, and occasional flying. It contains part of the San Rafael Swell Recreation Area and boasts a high scenic quality and mesmerizing geologic features. It is home to the "Little Grand Canyon," one of the most popular overlooks in the TMA. This area is easily accessible to the public, as Emery County frequently maintains access roads for 2WD access. The Wedge Overlook provides a view from a higher elevation in the area, and the Buckhorn Draw Road leads visitors down in elevation through different geologic layers to the bottom and the San Rafael River. Camping is highly sought after in the area, and the BLM maintains the San Rafael Swinging Bridge Campground and the Buckhorn Draw Campground as fee sites and has plans to develop more campgrounds in the Wedge area. The area also has hundreds of dispersed campsites because of its vicinity to local communities such as Castle Dale and Huntington, in addition to the scenic quality, ease of access, and proximity to recreation activities. The area also has a large concentration of cultural and historic sites, including the Buckhorn Wash Rock Art Panel, the Swinging Bridge built by the Civilian Conservation Corps, the Morrison-Knudson tunnels (more commonly known as the MK tunnels) built by the military during the Cold War era, a dinosaur track, and historic inscriptions from early settlers and outlaws. The only designated mountain bike trail in Emery County on BLM-managed lands is the 18-mile Good Water Rim Trail at the Wedge. In addition to that trail, gravel biking and bikepacking is also a growing activity in this area. There are over 100 documented climbing routes in the Buckhorn Draw, which has grown moderately popular among climbers. Network area routes access the put-in and take out for a scenic, family-friendly float on the San Rafael River during high spring flows. When water is low, for most of the year, the river bottom and side canyons can be enjoyed by hikers and backpackers. The Swinging Bridge Campground provides horse corrals and staging areas for equestrian users. This route network geographic area is managed for easy access, developed camping opportunities, and access for non-motorized activities. Most recreationists in this area are passing through to other areas, camping, or touring on county roads to appreciate scenery and roadside attractions. Buckhorn Draw also offers opportunities for wildlife viewing activities. Mule deer, bighorn sheep, and other species can be seen during the winter months. Hunting is also a popular recreational activity in the fall.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This area contains a portion of the Mexican Mountain and Sids Mountain Wilderness Areas and contains portions of the Mexican Mountain and Sids Mountain Lands with Wilderness Characteristics inventory units. The San Rafael Canyon ACEC is within this area and the National Historic Old Spanish Trail is on the northern boundary. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed-Mustard, Jones Cycladenia, San Rafael Cactus, Last Chance Townsendia, and the Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Buckhorn/Wedge route network geographic area: SS2001,SS2002, SS2004, SS2005, SS2006, SS2007, SS2010, SS2013, SS2017, SS2018, SS2019, SS2020, SS2021, SS2022, SS2023, SS2024, SS2026, SS2027, SS2029, SS2033, SS2034, SS2035, SS2036, SS2037, SS2038, SS2039, SS2044, SS2045, SS2047, SS2053, SS2055, SS2056, SS2117, SS2825, SS3003, SS3004, SS3005, SS3006, SS3007, SS3024, SS3084, SS3085, SS3086, SS3087, SS3088, SS3089, SS3091, SS3092, SS3094, SS3097, SS3103, SS3105, SS3106, SS3111, SS3112, SS3113, SS3114, SS3115, SS3116, SS3123, SS3145, SS3153, SS3154, SS3157, SS3158, SS3161, SS3167, SS3169, SS3170, SS3171, SS3173, SS3174, SS3175, SS3176, SS3177, SS3178, SS3179, SS3180, SS3181, SS3182, SS3183, SS3184, SS3185, SS3186, SS3187, SS3188, SS3189, SS3190, SS3200, SS3201, SS3214, SS3224, SS3225, SS3228, SS3229, SS3231, SS3236, SS3237, SS3238, and SS3532.

The Buckhorn/Wedge route network geographic area is approximately 36,182 acres.

Buckhorn/Wedge Total Miles: 99

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	68	Open to all use	65	Open to all use	70	Open to all use	77
Limited to E-bikes	12	Limited to E-bikes	12	Limited to E-bikes	17	Limited to vehicles less than 66"	3
Closed	18	Closed	21	Closed	12	Limited to E-bikes	17
						Closed	1

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 18 miles (26%) of the evaluated routes in this area would remain closed and 12 miles (18%) would be limited.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 21 miles (31%) of the evaluated routes would be closed and 12 miles (18%) would be limited.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 12 miles (18%) of the evaluated routes would be closed and 17 miles (25%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 1 mile (2%) of the evaluated routes would be closed and 20 miles (29%) would be limited.

In addition to the evaluated routes, there were 36 miles of originally inventoried routes in this network area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.5 BUCKMASTER / TIDWELL DRAW

The Buckmaster/Tidwell Draw area is made up of unique geology along the east side of the San Rafael Reef. Recreation opportunities within this area are dispersed camping, cultural/historic site viewing, scenic viewing, OHV riding, hiking, backpacking, wildlife viewing, hunting, mountain biking, horseback riding, rock climbing and canyoneering. The Buckmaster area is rich in minerals and was heavily mined from the early 1900's up into the 1960's, leaving behind a very dense road system in the southern half of this area. Buckmaster is identified in the 2008 Price RMP as a large group camping site. This area is easily accessible from I-70, making it a popular camping and staging area for RVs hauling OHVs. Historic buildings, abandoned vehicles and mining equipment can be found, making it easier for visitors to imagine living that historic lifestyle. Most of the dangerous mining shafts in this area have been closed and mitigated, making it safer for visitors. Many of the old mining roads provide rocky, challenging OHV trails, and the background setting in this area is the scenic San Rafael Reef. The western edge is made up of the Mexican Mountain Wilderness Area, and several of the potential network routes serve as the boundary of that wilderness and provide access to non-motorized trail heads. The Smith Cabin, in the center of the geographic area, provides evidence of the area's ranching history (grazing is still a permitted use today). Cottonwood Canyon is on the north end of the area and has a reliable spring water source, a site with cultural/historic traces, and is used by modern day backpackers/hikers and horse riders. The southwest end of the area is Tidwell Draw, where the San Rafael River cuts through the San Rafael Reef. This area is also a part of the Old Spanish Trail OHV Heritage Loop tour and highlights sites such as the Smith Cabin, Idol Rock, the old railroad grade, and the historic inscriptions along Cottonwood Wash. There are also single-track trails that follow along the slick rock in the Buckmaster area and provide a loop system called the Miners Run. The Wilderness on the west side of this area is also a great place for desert bighorn sheep viewing.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains a portion of the Mexican Mountain Wilderness Area and contains a portion of the Lost Springs Wash Lands with Wilderness Characteristics inventory unit. The Tidwell Draw Historic ACEC is fully within the area, and a small section of the National Historic Old Spanish Trail goes through this area. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed-Mustard, Jones Cycladenia, San Rafael Cactus, Last Chance Townsendia, and the Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Buckmaster/Tidwell Draw route network geographic area: SS2278, SS2281, SS2282, SS2286, SS2287, SS2288, SS2290, SS2291, SS2292, SS2293, SS2294, SS2295, SS2296, SS2297, SS2298, SS2299, SS2300, SS2301, SS2302, SS2303, SS2304, SS2305, SS2306, SS2307, SS2308, SS2309, SS2310, SS2311, SS2312, SS2313, SS2314, SS2316, SS2317, SS2318, SS2319, SS2320, SS2321, SS2322, SS2323, SS2324, SS2325, SS2326, SS2327, SS2328, SS2329, SS2330, SS2331, SS2332, SS2333, SS2334, SS2335, SS2336, SS2337, SS2338, SS2339, SS2340, SS2341, SS2342, SS2343, SS2344, SS2345, SS2346, SS2347, SS2348, SS2349, SS2350, SS2351, SS2352, SS2353, SS2354, SS2355, SS2356, SS2357, SS2358, SS2359, SS2360, SS2361, SS2362, SS2363, SS2364, SS2365, SS2366, SS2367, SS2368, SS2369, SS2370, SS2371, SS2372, SS2373, SS2375, SS2376, SS2377, SS2378, and SS2379.

The Buckmaster/Tidwell Draw route network geographic area is approximately 24,013 acres.

Buckmaster/Tidwell Draw Total Miles: 53

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	43	Open to all use	31	Open to all use	34	Open to all use	44
Closed	11	Limited to single-track vehicles	7	Limited to vehicles less than 66"	4	Limited to single-track vehicles	7
		Closed	16	Limited to single-track vehicles	7	Closed	2
				Closed	8		

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 11 miles (20%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 16 miles (31%) of the evaluated routes would be closed and 7 miles (13%) would be limited.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 8 miles (16%) of the evaluated routes would be closed and 11 miles (21%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 2 miles (3%) of the evaluated routes would be closed and 7 miles (13%) would be limited.

In addition to the evaluated routes, there were 6 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.6 CLIFF DWELLERS / HOME BASE

The Cliff Dwellers/Home Base area is made up of large valleys and buttes. Recreation opportunities within this area are OHV riding, dispersed camping, cultural/historic viewing, wildlife viewing, hunting, mountain biking, backcountry flying/landing, canyoneering, hiking, and horseback riding. This geographic area contains a part of the San Rafael Swell Recreation Area. The Cliff Dwellers Flat provides access to the northeast portion of the San Rafael Reef Wilderness. One of motorized routes in this area is also used as a backcountry airstrip. This loop road and several of its spurs provide access to undeveloped wilderness trailheads, dispersed camping and easier OHV and mountain bike touring. The Home Base Flat area is similar; it has a loop with several spur routes leading to dispersed campsites and is used for OHV touring. The western portion of this area receives more camping because of its ease of access from exit 131 of I-70 and its central location in the San Rafael Swell. This route network geographic area provides opportunities for hunting, wildlife viewing, and wild burro viewing.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains a portion of the San Rafael Reef Wilderness Area and contains a portion of the San Rafael Reef Lands with Wilderness Characteristics inventory units. Portions of the San Rafael Reef North and I-70 Scenic ACECs are in this area. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed-Mustard, Jones Cycladenia, San Rafael Cactus, Last Chance Townsendia, and the Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Cliff Dwellers/Home Base route network geographic area: SS2715, SS2767, SS2769, SS2770, SS2771, SS2772, SS2774, SS2775, SS2777, SS2778, SS2781, SS2782, SS2783, SS2784, SS2785, SS2786, SS2787, SS2788, SS2790, SS2791, SS2792, SS2793, SS2794, SS2795, SS2796, SS2797, SS2798, SS2801, SS2803, SS2806. SS2807, and SS2810.

The Cliff Dwellers/Home Base route network geographic area is approximately 50,110 acres.

Cliff Dwellers/Home Base Total Miles: 44

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	25	Open to all use	24	Open to all use	31	Open to all use	44
Closed	20	Closed	21	Closed	14		

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 20 miles (44%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 21 miles (47%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 14 miles (32%) of the evaluated routes would be closed.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed.

In addition to the evaluated routes, there were 9 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.7 COAL CLIFFS

The Coal Cliffs area is made up of geologic layers that run north-south with low bluffs overlooking the landscape towards the San Rafael Swell. Recreation opportunities within this area are OHV riding, dispersed camping, cultural/historic viewing, geologic viewing, hunting, hiking, and horseback riding. This network provides easily accessible camping and OHV opportunities close to the local communities of Emery and Ferron. Several easy to moderately challenging OHV loops in this network provide access to remote overlooks. Dispersed campsites can be found throughout the unit but are more concentrated on the north boundary road. One popular site in the area is the Rochester Rock Art Panel, located on its western edge. The site has a parking area, and visitors can do a ¾-mile hike to view the panel. In addition to the rock art, visitors can also learn about the Muddy Creek crossing on the Old Spanish Trail, and view interpretive artistic silhouettes from that same parking area. Many of the routes in this area were built for range improvement projects such as the development of stock ponds, and these roads are used today to gain access across this diverse landscape.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains no inventoried lands with wilderness characteristics. Portions of the Dry Wash Rock Art ACEC and the I-70 Scenic ACEC are in this area. The National Historic Old Spanish Trail is near the western boundary of this area. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed-Mustard, Jones Cycladenia, San Rafael Cactus, Last Chance Townsendia, Wright-Fishook Cactus, and the Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Coal Cliffs Geographic route network geographic area: SS5186, SS5187, SS5188, SS5189, SS5190, SS5193, SS5196, SS5197, SS5201, SS5204, SS5205, SS5206, SS5207, SS5208, SS5209, SS5210, SS5211, SS5212, SS5213, SS5214, SS5215, SS5216, SS5217, SS5218, SS5219, SS5220, SS5221, SS5224, SS5225, SS5226, SS5229, SS5230, SS5233, SS5235, SS5237, SS5239, SS5240, SS5241, SS5242, SS5242A, SS5243, SS5244, SS5245, SS5246, SS5249, SS5250, SS5251, SS5252, SS5254, SS5255, SS5256, SS5257, SS5258, SS5260, SS5262, SS5264, SS5265, SS5266, SS5267, SS5268, SS5269, SS5270, SS5271, SS5272, SS5273, SS5274, SS5275, SS5277, SS5278, SS5280, SS5282, SS5283, SS5284, SS5285, SS5287, SS5290, SS5291, SS5292, SS5296, SS5298, SS5299, SS5300, SS5301, SS5302, SS5307, SS5318, SS5319, SS5320, SS5321, SS5322, SS5323, SS5324, SS5325, SS5326, SS5328, SS5329, SS5330, SS5332, SS5333, SS5334, SS5335, SS5336, SS5337, SS5338, SS5339, SS5341, SS5342, SS5343, SS5344, SS5345, SS5346, SS5350, SS5352, SS5353, SS5354, SS5355, SS5356, SS5359, SS5360, SS5364, SS5365, SS5366, SS5367, SS5368, SS5369, SS5370, SS5372, SS5373, SS5374, SS5375, SS5376, SS5377, SS5378, SS5380, SS5382, SS5384, SS5385, and SS5387.

The Coal Cliffs route network geographic area is approximately 65,797 acres.

Coal Cliffs Total Miles: 129

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	47	Open to all use	28	Open to all use	78	Open to all use	125
Closed	82	Limited to vehicles less than 66"	16	Limited to vehicles less than 66"	10	Limited to vehicles less than 66"	2
		Closed	85	Closed	42	Closed	2

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 82 miles (63%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 85 miles (65%) of the evaluated routes would be closed and 16 miles (13%) would be limited.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 42 miles (32%) of the evaluated routes would be closed and 10 miles (8%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 2 miles (2%) of the evaluated routes would be closed and 2 miles (2%) would be limited.

In addition to the evaluated routes, there were 20 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.8 COPPER GLOBE / LONE TREE

The Copper Globe/Lone Tree area is made up of towering cliffs, rock formations, and large washes and canyons. Recreation opportunities within this area are OHV riding, dispersed camping, cultural/historic viewing, geologic viewing, scenic viewing, wildlife viewing, hunting, rock hounding, hiking, horseback riding, mountain biking, and backpacking. This geographic area contains a part of the San Rafael Swell Recreation Area. OHV destination trails such as Copper Globe, Kimball Draw, and the Dizzy Trail provide a remote OHV experience through the backcountry. Several routes also provide access to nonmotorized destinations in this network area such as the San Rafael Knob, Devils Canyon, and Muddy Creek. The west part of the route network geographic area, provide access to scenic geologic features such as volcanic dikes, Horizon Arch, overlooks and historic sites such as a Butch Cassidy inscription and Willow Springs Civilian Conservation Corps camp. Key features in the eastern half are the Copper Globe Mine, Shepards End, Reds Canyon Overlooks, and the San Rafael Knob, which is the highest peak in the San Rafael Swell. Justesen Flats, in the northeast corner of the unit, has a developed OHV trailhead, and is also heavily used for dispersed camping due to its proximity to I-70. Beyond the scenic quality this route network geographic area's trails offer; they also provide challenging OHV loop opportunities for those who seek rocky/difficult trail experiences. This area is also frequented by desert bighorn sheep and other wildlife that people enjoy watching and hunting. A wild horse herd frequents this area and visitors often utilize this network area to view them.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains the entire Devils Canyon Wilderness and a portion of the Muddy Creek Wilderness. The area contains portions of the Devils Canyon, Muddy Creek Crack Canyon, Rock Canyon, Mussentuchit Badlands, and the Upper Muddy Creek inventoried lands with wilderness characteristics. The area contains portions of the Muddy Creek and I-70 Scenic ACECs and the Lucky Strike, Copper Globe, and Shepards End Historic ACEC's. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Yellow-billed Cuckoo, Barnaby Reed-Mustard, Jones Cycladenia, San Rafael Cactus, Last Chance Townsendia, Wright-Fishook Cactus, and the Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Copper Globe/Lone Tree route network geographic area: SS4515, SS4516, SS4516A, SS4517, SS4518, SS4519, SS4520, SS4521, SS4521A, SS4522, SS4523, SS4524, SS4525, SS4526, SS4527, SS4528, SS4529, SS4530, SS4531, SS4532, SS4533, SS4534, SS4535, SS4537, SS4538, SS4539, SS4540, SS4541, SS4542, SS4543, SS4544, SS4545, SS4546, SS4547, SS4548, SS4550, SS4552, SS4553, SS4554, SS4555, SS4556, SS4557, SS4558, SS4559, SS4560, SS4561, SS4562, SS4563, SS4564, SS4567, SS4568, SS4570, SS4571, SS4572, SS4573, SS4574, SS4575, SS4576, SS4580, SS4581, SS4583, SS4584, SS4585, SS4586, SS4587, SS4588, SS4589, SS4590, SS4592, SS5001, SS5002, SS5003, SS5004, SS5005, SS5006, SS5007, SS5008, SS5010, SS5011, SS5012, SS5013, SS5015, SS5016, SS5017, SS5019, SS5021, SS5022, SS5023, SS5024, SS5025, SS5026, SS5027, SS5029, SS5030, SS5032, SS5033, SS5034, SS5035, SS5036, SS5037, SS5038, SS5039, SS5050, SS5051, SS5052, SS5058, SS5060, SS5069, SS5070, SS5071, SS5072, SS5073, SS5075, SS5076, SS5077, SS5078, SS5079, SS5080, SS5081, SS5083, SS5085, SS5087, SS5104, SS5105, SS5106, SS5107, SS5108, SS5110, SS5111, SS5113, SS5115, SS5116, SS5118, SS5119, SS5120, SS5122, SS5125, SS5163, SS6078, SS6079, SS6080, SS6082, SS6083, SS6084, SS6088, SS6089, SS6089A, SS6090, SS6091, SS6093, SS6094, SS6095, SS6096, SS6097, SS6100, SS6102, SS6103, SS6104, SS6105, SS6112, and SS6113.

The Copper Globe/Lone Tree Area is approximately 113,392 acres.

Copper Globe/Lone Tree Total Miles: 191

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	94	Open to all use	90	Open to all use	116	Open to all use	166
Closed	97	Closed	101	Limited to vehicles less than 66"	2	Limited to vehicles less than 66"	4
				Closed	74	Limited to single-track vehicles	19
						Closed	2

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 97 miles (49%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 101 miles (53%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 74 miles (38%) of the evaluated routes would be closed and 2 miles (<1%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 2 miles (1 %) of the evaluated routes would be closed and 23 miles (12%) would be limited.

In addition to the evaluated routes, there were 19 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.9 COW FLATS / CEDAR MOUNTAIN

The Cow Flats/Cedar Mountain area is made up of rolling hills and benches and contains the north end of Cedar Mountain. Popular recreation activities in this area are dispersed camping, OHV riding, hunting, bouldering, scenic viewing, driving for pleasure, cultural/historic viewing, horseback riding, mountain biking, and, to a lesser extent, hiking. The area provides a few OHV loop opportunities in the vicinity of local communities, and close to heavily used dispersed campsites. A few locations, such as along the northern boundary route and in the southwest corner, are popular for dispersed camping. This route network geographic area provides camping access near the Jurassic National Monument, the Triassic Bouldering Area, and Cedar Mountain. It also provides access for RV camping close to communities such as Cleveland, Elmo, Huntington, and Price. Route network geographic area routes access the Triassic Bouldering Area, which is just outside the northwest corner of this TMA. The southwest corner is near the Staker Springs site, which was identified in the 2008 Price RMP as a large group site for dispersed camping. Private lands in this area limit public access, so the area does not see a high level of recreation use beyond the camping opportunities discussed above.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains no inventoried lands with wilderness characteristics. The area contains a small portion of the Cleveland Lloyde Dinosaur Quarry ACEC. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed-Mustard, Jones Cycladenia, San Rafael Cactus, and the Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Cow Flats/Cedar Mountain route network geographic area: SS1024, SS1027, SS1028, SS1030, SS1031, SS1033, SS1034, SS1036, SS1038, SS1039, SS1040, SS1043, SS1046, SS1047, SS1048, SS1049, SS1053, SS1054, SS1055, SS1056, SS1057, SS1058, SS1059, SS1060, SS1061, SS1062, SS1063, SS1064, SS1067, SS1068, SS1069, SS1071, SS1072, SS1075, SS1076, SS1077, SS1079, SS1080, SS1081, SS1082, SS1083, SS1084, SS1085, SS1086, SS1087, SS1088, SS1089, SS1090, SS1091, SS1092, SS1093, SS1094, SS1095, SS1187, SS1188, SS1189, SS1190, SS1192, SS1194, SS1195, SS1196, SS1197, SS1199, SS1200, SS1201, SS1202, SS1203, SS1204, SS1205, SS1208, SS1209, SS1210, SS1211, SS1212, SS1216, SS1218, SS1219,SS1220.

The Cow Flats/Cedar Mountain Area is approximately 16,595 acres.

Cow Flats/Cedar Mountain Total Miles: 37

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	17	Open to all use	18	Open to all use	23	Open to all use	37
Closed	21	Closed	19	Closed	14	Closed	0

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 21 miles (59%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 19 miles (51%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 14 miles (37%) of the evaluated routes would be closed.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed.

In addition to the evaluated routes, there were 5 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.10 FREMONT JUNCTION

The Fremont Junction network area covers the transition zone from desert to mountains and is unique for its dense pinyon-juniper forests and wintering deer and elk populations. Recreation opportunities within this area are dispersed camping, wood cutting, OHV riding, hunting, wildlife viewing, cultural/historic viewing, scenic viewing, mountain biking, and hiking. Several routes connect the lower desert to Fishlake National Forest. This area has received some fuels treatments and is a popular area for the public to cut and collect wood. I-70 makes up the northern boundary of this area and Highway 74 runs near the western edge of the unit. Near those highly traveled highways, there are many dispersed campsites and some undeveloped trailheads and parking areas.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains portions of the Limestone Cliffs and Rock Canyon lands with wilderness characteristics inventoried units. The National Historic Old Spanish Trail is near the northern boundary of this area. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, San Rafael Cactus, and Last Chance Townsendia. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Fremont Junction route network geographic area: SS6085, SS6086, SS6087, SS6092, SS6106, SS6108, SS6109, SS6110, SS6111, SS6114, SS6116, SS6117, SS6118, SS6121, SS6123, SS6124, SS6125, SS6126, SS6128, SS6129, SS6130, SS6131, SS6132, SS6134, SS6135, SS6136, SS6138, SS6139, SS6140, SS6141, SS6142, SS6143, SS6144, SS6145, SS6146, SS6147, SS6148, SS6149, SS6150, SS6151, SS6153, SS6154, SS6156, SS6157, SS6158, SS6161, SS6162, SS6163, SS6164, SS6165, SS6166, SS6167, SS6169, SS6171, SS6172, SS6174, SS6176, SS6177, SS6178, SS6180, SS6181, SS6182, SS6183, SS6184, SS6185, SS6187, SS6188, SS6189, SS6190, SS6191, SS6192, and SS6193.

The Freemont Junction Area is approximately 25,090 acres.

Fremont Junction Total Miles: 43

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	14	Open to all use	15	Open to all use	31	Open to all use	40
Limited by season	24	Closed	28	Limited to vehicles less than 66"	1	Closed	3
Closed	4			Closed	11		

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 4 miles (8%) of the evaluated routes in this area would remain closed and 24 (57%) would remain limited.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 28 miles (66%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 11 miles (27%) of the evaluated routes would be closed and 1 mile (3%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 3 miles (7%) of the evaluated routes would be closed.

In addition to the evaluated routes, there were 6 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.11 FRONT OF THE REEF

The Front of the Reef area is dominated geologically by the San Rafael Reef and, towards the north end of the area, Shadscale Mesa. Popular recreation activities within this area are canyoneering, hiking, rockhounding, cultural/historic viewing, dispersed camping, climbing, OHV riding, wildlife viewing, hunting, and photography. On its southwestern end, this geographic area contains a part of the San Rafael Swell Recreation Area. The San Rafael Reef Wilderness comprises the western half of this area. The route network provides access to undeveloped trailheads that access the San Rafael Reef wilderness, including Eardley Canyon, Ernie Canyon, and Old Women Wash. The Squeeze Road links vehicle touring and wilderness access along the reef to the Black Dragon network area via an underpass beneath I-70. The San Rafael River crosses through the northeast corner of this network area and leads to the Hatt Ranch which is a Utah Wildlife Management Area within this geographic area where pheasants and chukars are raised and hunted. that the Eastern portion of the unit are some unique OHV opportunities that tie in with other designated routes from the San Rafael Desert TMP. The San Rafael Reef is much steeper on the north end of this unit, so it also provides photography and rock-climbing opportunities. Rockhounding is a popular activity in this network area because it is easy to access from highways and contains a variety of agate and other rocks. This area contains many cultural/historic sites, including several mines, and provides access to well-known hiking, and technical canyoneering routes.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains portions of the San Rafael Reef Wilderness and portions of the San Rafael Reef lands with wilderness characteristics inventoried unit, and San Rafael Reef North ACEC. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Yellow-billed Cuckoo, Barnaby Reed Mustard, Jones Cycladenia, San Rafael Cactus, and Last Chance Townsendia, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Front of the Reef route network geographic area: SS2381, SS2412, SS2419, SS2420, SS2421, SS2422, SS2425, SS2426, SS2430, SS2431, SS2433, SS2434, SS2435, SS2437, SS2441, SS2442, SS2443, SS2445, SS2452, SS2453, SS2454, SS2455, SS2456, SS2457, SS2458, SS2461, SS2464, SS2465, SS2466, SS2467, SS2469, SS2470, SS2471, SS2472, SS2474, SS2475, SS2476, SS2477, SS2479, SS2479A, SS2481, SS2489, SS2490, SS2491, SS2492, SS2495, SS2496, SS2497, SS2498, SS2502, SS2503, SS2505, SS2506, SS2508, SS2508A, SS2510, SS2512, SS2514, SS2515, SS2520, SS2521, SS2522, SS2523, SS2524, SS2525, SS2526, SS2527, SS2529, SS2530, SS2530A, SS2531, SS2533, SS2536, SS2537, SS2539, SS2540, SS2550, SS2552, SS2553, SS2554, SS2555, SS2557, SS2559, SS2560, SS2562, and SS2571.

The Front of the Reef Area is approximately 72,461 acres.

Front of the Reef Total Miles: 76

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	51	Open to all use	37	Open to all use	67	Open to all use	74
Closed	24	Closed	38	Closed	9	Closed	2

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 24 miles (32%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 38 miles (51%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 9 miles (15%) of the evaluated routes would be closed.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 2 miles (2%) of the evaluated routes would be closed.

In addition to the evaluated routes, there were 37 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.12 GRASSY TRAILS

The Grassy Trails area is made up of rolling hills and benches and is accessible from the town of Wellington by OHVs. The Grassy Trail Creek and Price River flow through it. Some of the most popular recreational activities in this area are OHV riding, cultural/historic viewing, hunting, horse riding, and hiking. OHV riding opportunities include use loop touring, visiting points overlooking the Price River, dispersed camping, and dispersed hiking along the creek/river. In the center of this area is the Grassy Trail Rock Art ACEC where rock art can be viewed. In addition, there is an old railroad grade that diverts from the Price River and follows along Grassy Trail Creek. There are remnants of old buildings and wells near the confluence that people enjoy visiting and looking at. This area has the only Price River crossing open to full size OHVs in the area which links the Grassy Trails and Mounds network areas to the Chimney Rock/Humbug OHV trail system to the southwest. This currently designated but unimproved river crossing is a crucial OHV connection between route network geographic areas; without the river crossing and connection, OHV users wishing to access the Chimney Rock/Humbug area would be required to load on trailers and travel on Highway 24 to the bridge at Woodside, and then unload again, or travel completely around Cedar Mountain.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains a portion of the Price River lands with wilderness characteristics inventoried unit and contains the entire Grassy Trail rock art ACEC. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Yellow-billed Cuckoo, Barnaby Reed Mustard, Jones Cycladenia, San Rafael Cactus, Ute's Ladies Tresses, and Colorado Pikeminnow. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Grassy Trails route network geographic area: SS1115, SS1116, SS1117, SS1121, SS1122, SS1125, SS1126, SS1128, SS1131, SS1132, SS1133, SS1136, SS1141, SS1143, SS1144, SS1145, SS1146, SS1147, SS1148, SS1149, SS1151, SS1152, SS1157, SS1159, SS1160, SS1161, SS1163, SS1164, SS1165, SS1167, SS1168, SS1169, SS1171, SS1172, SS1173, SS1174, SS1176, SS1177, SS1179, SS1413, SS1414, SS1415, SS1418, SS1419, SS1420, SS1423, SS1430A, SS1431, SS1432, SS1433, SS1450, SS1452, SS1453, SS1455, SS1456, SS1457, and SS1458.

The Grassy Trails Area is approximately 14,438 acres.

Grassy Trails Total Miles: 44

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	14	Open to all use	12	Open to all use	27	Open to all use	42
Closed	29	Closed	32	Limited to vehicles less than 66"	1	Limited to vehicles less than 66"	1
				Closed	15	Closed	0

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 29 miles (67%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 32 miles (73%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 15 miles (31%) of the evaluated routes would be closed and 1 mile (3%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 0.4 miles (1%) of the evaluated routes would be closed and 1 mile (3%) would be limited.

In addition to the evaluated routes, there were 7 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.13 HUMBUG / CHIMNEY ROCK

The Humbug/Chimney Rock area is made up of red rock cliffs, large valley flats, and conglomerate rock slopes. Recreation opportunities within this area are motorcycle riding, UTV riding, driving for pleasure, cultural/historic viewing, geology viewing, dispersed camping, hunting, horseback riding, and some occasional mountain biking and hiking. This route network geographic area is the northern portion of the Summerville/Chimney Rock/Humbug trail system that was designated in the 2008 Price RMP, which provides guidance to manage this area for OHV recreation opportunities due to the public interest and the density of existing OHV trails in this area. This area provides several unique and challenging trail experiences that experienced OHV users seek. There are also some easier loop systems, such as the Humbug/Chimney Rock loop, that the BLM maintains to provide a variety of opportunities. In addition to the potential network routes in this area, there is also an expansive single-track motorcycle trail system. Several of these single-track trail systems are used for enduro style motorcycle races that started decades ago and are still permitted regularly. In addition, there are several other special recreation permits for authorized OHV events and guided tours in this area. The Price River on the north end of this area was an historic travel route, and remnants of old wagon roads and historic cabins can be viewed. The area also contains historic remnants of mining exploration and historic grazing features and camps. Several routes in this area serve as connectors into other route network geographic areas such as the Grassy Trails, Chimney Rock/Humbug, and the South Jurassic/Flat top areas, as well as the other half of the Chimney Rock Trail system to the south, which is outside this TMA planning boundary.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains a the Never Sweat Wash lands with wilderness characteristics inventoried unit. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Yellow-billed Cuckoo, Barnaby Reed Mustard, Jones Cycladenia, San Rafael Cactus, Ute's Ladies Tresses, and Colorado Pikeminnow. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Humbug/Chimney Rock route network geographic area: SS1096, SS1097, SS1101, SS1102, SS1103, SS1104, SS1105, SS1106, SS1108, SS1109, SS1110, SS1111, SS1112, SS1113, SS1405, SS1406, SS1459, SS1460, SS1461, SS1462, SS1463, SS1464, SS1465, SS1466, SS1467, SS1468, SS1469, SS1471, SS1472, SS1473, SS1474, SS1476, SS1477, SS1478, SS1481, SS1482, SS1483, SS1484, SS1485, SS1486, SS1487, SS1487, SS1489, SS1490, SS1491, SS1492, SS1493, SS1494, SS1495, SS1496, SS1496A, SS1497, SS1498, SS1499, SS1500, SS1501, SS1503, SS1506, SS1510, SS1511, SS1512, SS1515, SS1516, SS1522, SS1525, SS1526, SS1527, SS1530, SS1530A, SS1531, SS1532, SS1532A, SS1533, SS1533A, SS1534, SS1534A, SS1534A, SS1534A, SS1535, SS1536, SS1539, SS1539A, SS1541, SS1542, SS1543, SS1544, SS1545, SS1547, SS1547A, SS1547B, SS1548, SS1551, SS1552, SS1553, SS1554, SS1555, SS1556, SS1561, and SS1562.

The Humbug/Chimney Rock Area is approximately 51,005 acres.

Humbug/Chimney Rock Total Miles: 148

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	108	Open to all use	33	Open to all use	68	Open to all use	89
Closed	39	Limited to vehicles less than 66"	3	Limited to vehicles less than 66"	3	Limited to vehicles less than 66"	3
		Limited to single-track vehicles	11	Limited to single-track vehicles	39	Limited to single-track vehicles	46
		Closed	101	Closed	38	Closed	10

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 39 miles (28%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 101 miles (65%) of the evaluated routes would be closed and 14 (9%) would be limited.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 38 miles (25%) of the evaluated routes would be closed and 42 miles (28%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 10 miles (7%) of the evaluated routes would be closed and 49 miles (33%) would be limited.

In addition to the evaluated routes, there were 26 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.14 LIMESTONE CLIFFS

The Limestone Cliffs network area covers the transition zone from desert to mountains and is made up of unique and scenic geological features. Popular recreation activities within this area are scenic viewing, geologic viewing, hunting, OHV riding, dispersed camping, cultural/historic viewing, rockhounding, mountain biking, bikepacking, and hiking. Routes within this network connect the Last Chance desert to Fishlake National Forest and Capitol Reef National Park. The western side of this area is Fishlake National Forest, and a few of the potential network routes provide access to the National Forest System. Capital Reef National Park is also on the southern boundary of this area. The Baker's Ranch is a large private ranch located in the southwest corner of this area. This corner is also a place where deer and elk winter, which attracts people for wildlife viewing and hunting.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains the Jones Bench BLM Natural Area and a portion of the Limestone Cliffs lands with wilderness characteristics inventoried unit. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed Mustard, Last Chance Townsendia, San Rafael Cactus, Winkler Cactus, Wright-Fishhook Cactus, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Limestone Cliffs route network geographic area: SS6001, SS6002, SS6003, SS6004, SS6005, SS6006, SS6009, SS6010, SS6011, SS6031, SS6033, SS6035, SS6036, SS6037, SS6038, SS6039, SS6041, SS6042, SS6044, SS6047, SS6049, SS6049A, SS6050, SS6051, SS6052, SS6053, SS6054, SS6055, SS6056, SS6057, SS6058, SS6059, SS6060, SS6061, SS6062, SS6063, SS6064, SS6065, SS6066, SS6071, SS6073, and SS6077.

The Limestone Cliffs Area is approximately 24,483 acres.

Limestone Cliffs Total Miles: 42

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	27	Open to all use	15	Open to all use	28	Open to all use	30
Limited by season	12	Closed	26	Closed	14	Closed	12
Closed	3						

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 3 miles (11%) of the evaluated routes in this area would remain closed and 12 miles (27%) would remain limited.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 26 miles (63%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 14 miles (37%) of the evaluated routes would be closed.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 12 miles (28%) of the evaluated routes would be closed.

In addition to the evaluated routes, there were 5 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.15 MOORE CUTOFF / DUTCH FLATS

The Moore Cutoff/Dutch Flats area is made up is made up of geologic layers that run north-south with low bluffs overlooking the landscape towards the San Rafael Swell. Recreation opportunities within this area are OHV riding, dispersed camping, cultural/historic viewing, geology viewing, hunting, hiking, and horseback riding. There are OHV touring and camping opportunities close to the local communities of Ferron and Emery. The OHV loops in this route network geographic area are typically easier routes but still provide a backcountry experience. This geographic area has several units of the Rock Art ACEC with well-known and frequently visited rock art sites. Dispersed campsites can be found throughout this geographic area but are more concentrated on the north and south boundary roads. One popular site is the Snake Pictograph Panel in the southwest corner of this area where recreationists can find rock art, historic Civilian Conservation Corps inscriptions, and dinosaur tracks all within close proximity of each other. Another popular site is Sid and Charley, a free-standing geologic feature that was named after some of the first people to graze livestock in this area.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains no lands with wilderness characteristics inventoried units. This area does contain the North Salt Wash, Dry Wash, Short Canyon, Molen Seep, and Kings Crown Rock Art ACECs. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed Mustard, Last Chance Townsendia, San Rafael Cactus, Wright-Fishhook Cactus, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Limestone Cliffs route network geographic area: SS3239, SS3338, SS3339, SS3341, SS3342, SS3343, SS3345, SS3346, SS3350, SS3352, SS3353, SS3354, SS3355, SS3356, SS3357, SS3366, SS3367, SS3368, SS3370, SS3371, SS3374, SS3375, SS3376, SS3377, SS3378, SS3379, SS3380, SS3381, SS3382, SS3383, SS3384, SS3388, SS3389, SS3392, SS3394, SS3396, SS3397, SS3398, SS3399, SS3402, SS3403, SS3404, SS3405, SS3406, SS3409, SS3413, SS3414, SS3415, SS3416, SS3419, SS3420, SS3421, SS3422, SS3424, SS3425, SS3426, SS3427, SS3430, SS3431, SS3434, SS3435, SS3437, SS3438, SS3439, SS3440, SS3441, SS3442, SS3443, SS3444, SS3446, SS3447, SS3448, SS3449, SS3450, SS3451, SS3453, SS3454, SS3455, SS3456, SS3457, SS3462, SS3463, SS3464, SS3467, SS3468, SS3469, SS3472, SS3474, SS3475, SS3476, SS3478, SS3479, SS3481, SS3482, SS3484, SS3485, SS3488, SS3489, SS3490, SS3492, SS3493, SS3494, SS3495, SS3496, SS3497, SS3498, SS3499, SS3500, SS3501, SS3503, SS3504, SS3505, SS3506, SS3507, SS3508, SS3509, SS3510, SS3511, SS3512, SS3513, SS3514, SS3515, SS3516, SS3517, SS3522, SS3523, SS3527, SS3528, SS3529, SS3530, and SS3531.

The Moore Cutoff/Dutch Flats is approximately 52,333 acres.

Moore Cutoff/Dutch Flats Total Miles: 110

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	48	Open to all use	45	Open to all use	85	Open to all use	106
Closed	62	Closed	65	Limited to vehicles less than 66"	3	Closed	4
				Closed	22		

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 62 miles (55%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 65 miles (56%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 22 miles (19%) of the evaluated routes would be closed and 3 miles (3%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 4 miles (2%) of the evaluated routes would be closed.

In addition to the evaluated routes, there were 13 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.16 MOUNDS

The Mounds area is mostly made up of rolling hills and benches and is approximately ten miles from the city of Wellington. Recreational opportunities in this area are OHV riding, hunting, rock hounding, horse riding, hiking, and cultural/historic viewing. In the northeast corner of this area near the Mounds Bridge where the main route crosses the Price River is a large group dispersed camping site. This group site provides camping in the vicinity of communities such as Price, Wellington, Elmo, and Cleveland. Many recreationists use the routes in this route network geographic area for loop opportunities, to access vistas that overlook the Price River, to dispersed camp, or to access undeveloped parking areas near hiking opportunities. The eastern side of this area has a Price River LWC unit, where visitors can experience naturalness, solitude, and unconfined recreation opportunities. On the southwest end of this area near the Price River are historic remnants of old wagon roads, cabins, and ranches. One attraction is the Marsing Ranch; this site is on TLA property but can be accessed via an old stock trail that is also currently managed to provide a challenging motorcycle trail opportunity. The first half of that motorcycle trail also provides connectivity across the Price River and provides access to other route network geographic areas for larger loop opportunities. In addition to that single track, there are a handful of other challenging OHV trails that tie into other route network geographic areas such as Grassy Trails, Chimney Rock/Humbug, and South Jurassic/Flat Top.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains a portion of the Price River lands with wilderness characteristics inventoried unit. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Yellow-billed Cuckoo, Colorado Pikeminnow, Barnaby Reed Mustard, Jones Cycladenia, San Rafael Cactus, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Mounds route network geographic area: SS1235, SS1303, SS1332, SS1333, SS1335, SS1336, SS1337, SS1339, SS1340, SS1341, SS1342, SS1343, SS1344, SS1346, SS1347, SS1348, SS1349, SS1350, SS1353, SS1354, SS1355, SS1356, SS1357, SS1361, SS1362, SS1363, SS1363A, SS1364, SS1366, SS1368, SS1369, SS1372, SS1376, SS1377, SS1378, SS1379, SS1380, SS1381, SS1383, SS1385, SS1386, SS1389, SS1390, SS1391, SS1392, SS1393, SS1395, SS1396, SS1398, SS1399, SS1401, SS1403, SS1404, SS1408, SS1409, SS1410, SS1424, SS1425, SS1426, SS1427, SS1429, SS1430, SS1434, SS1436, SS1442, SS1443, and SS1445.

The Mounds area is approximately 21,079 acres.

Mounds Total Miles: 69

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	39	Open to all use	36	Open to all use	50	Open to all use	63
Closed	31	Closed	34	Limited to vehicles less than 66"	1	Limited to single-track vehicles	5
				Limited to single-track vehicles	5	Closed	1
				Closed	14		

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 31 miles (41%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 34 miles (49%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 14 miles (19%) of the evaluated routes would be closed and 6 miles (9%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 1 mile (1%) of the evaluated routes would be closed and 5 miles (8%) would be limited.

In addition to the evaluated routes, there were 9 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.17 MUSSENTUCHIT / LAST CHANCE

The Mussentuchit/Last Chance area is made up of unique and scenic geologic features. Popular recreation activities within this area are scenic viewing, wildlife viewing, geologic viewing, hunting, hiking, OHV riding, dispersed camping, cultural/historic viewing, rockhounding, mountain biking, and backpacking. This geographic area contains a part of the congressionally designated San Rafael Swell Recreation Area in the southeastern corner before the Wilderness boundary. This is a larger route network geographic area and has a lower density of routes compared to other route networks. The southern and western edges of this geographic area are the Muddy Creek and Lower Last Chance Wilderness Areas. Several of the routes in this network provide access to these Wilderness Areas including undeveloped overlooks such as Seger Hole, Chimney Canyon, Muddy Creek, and Moroni Slopes. Other destinations include the Mussentuchit Sand Dune, Mussentuchit Wash, Cedar Mountains, and Hebes Mountain. The network area also accesses the north end of Capital Reef National Park. This area is frequented by desert bighorn sheep and other wildlife that visitors enjoy watching and occasionally hunting. This is an area within the TMA that is far away from the highways and communities, and because of that, there is less visitation, providing for a more backcountry experience with greater chances to find solitude even near the maintained roads.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This geographic area contains the entire Lower Last Chance Wilderness, and a portion of the Muddy Creek Wilderness. It contains the Mussentuchit Badland, the Cedar Mountain, and a portion of the Muddy Creek Crack Canyon lands with wilderness characteristics inventoried units. This area contains a portion of the Segars Hole and Muddy Creek ACES's. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed Mustard, Jones Cycladenia, Last Chance Townsendia, San Rafael Cactus, Winkler Cactus, Wright-Fishook Cactus, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Mussentuchit/Last Chance route network geographic area: SS5089, SS5090, SS5091, SS5092, SS5093, SS5095, SS5098, SS5099, SS5100, SS5101, SS5102, SS5103, SS5127, SS5128, SS5129, SS5130, SS5131, SS5132, SS5133, SS5134, SS5135, SS5136, SS5138, SS5139, SS5140, SS5143, SS5144, SS5145, SS5146, SS5147, SS5148, SS5149, SS5150, SS5152, SS5155, SS5156, SS5158, SS5159, SS5160, SS5162, SS5164, SS5167, SS5168, SS5169, SS5170, SS5171, SS5173, SS5174, SS5175, SS5176, SS5177, SS5178, SS5185, SS5389, SS5389A, SS5390, SS5391, SS5392, SS5393, SS5394, SS5395, SS5396, SS5398, SS5402, SS5407, SS5408, SS5409, SS5411, SS5414, SS5415, SS5416, SS5420, SS6007, SS6008, SS6012, SS6017, SS6019, SS6022, SS6023, SS6029, SS6075, and SS6076.

The Mussentuchit/Last Chance area is approximately 153,223 acres.

Mussentuchit/Last Chance Total Miles: 126

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	83	Open to all use	74	Open to all use	92	Open to all use	125
Closed	42	Closed	51	Limited to vehicles less than 66"	4	Closed	1
				Closed	30		

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 42 miles (35%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 51 miles (42%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 28 miles (22%) of the evaluated routes would be closed and 4 miles (3%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 1 mile (1%) of the evaluated routes would be closed.

In addition to the evaluated routes, there were 25 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.18 NORTH JURASSIC / FLAT TOP

The North Jurassic/Flat Top area is made up of rolling hills and benches like the Mounds area, with Flat Top Mountain dominating the east portion. Near the mid-southern end is Jurassic National Monument, which was designated in 2019 and contains the densest concentration of Jurassic-aged dinosaur bones ever discovered. The Cleveland Lloyd Dinosaur Quarry was the first BLM visitor center ever built. Visitors can learn about dinosaurs in the visitor center, visit the quarry, and hike on several short interpretive loop trails. Other recreation opportunities within this route network geographic area are geology viewing, dispersed camping, OHV riding, hunting, bouldering, hiking, cultural/historic viewing, and horseback riding. This route network geographic area accesses vehicle touring and dispersed camping opportunities easily accessible from Cleveland and Elmo and close to other communities such as Huntington and Price. There are several OHV loop opportunities north of the monument that provide half-day loops that locals can access directly from their homes. There is one route that climbs up onto the flat tops, and along that route are appealing overlooks of the Price River and the red rocks of Humbug Canyon. The Price River on the northeast end of this area was an historic travel route, and remnants of historic wagon roads, cabins, and ranches can be viewed. Flat Top Mountain also has remnants of abandoned mining activities. Two single-track trails provide motorcycle loop connections, one that crosses the Price River near the Marsing Ranch trail, and another route on the east side of Flattop Mountain; both are challenging trails that provide a unique experience and create larger loop opportunities.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This area contains the Jurassic National Monument, the Cleveland Lloyd Dinosaur Quarry National Natural Landmark, and the Cleveland Lloyd Dinosaur Quarry ACEC. This geographic area contains no lands with wilderness characteristics inventoried units. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Yellow-billed Cuckoo, Colorado Pikeminnow, Barnaby Reed Mustard, Jones Cycladenia, San Rafael Cactus, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the North Jurassic/Flat Top route network geographic area: SS1001, SS1002, SS1003, SS1005, SS1006, SS1007, SS1008, SS1009, SS1010, SS1011, SS1012, SS1015, SS1016, SS1017, SS1018, SS1019, SS1020, SS1021, SS1023, SS1051, SS1181, SS1182, SS1183, SS1184, SS1224, SS1225, SS1227, SS1228, SS1229, SS1232, SS1233, SS1234, SS1234A, SS1236, SS1237, SS1238, SS1239, SS1240, SS1241, SS1242, SS1243, SS1244, SS1245, SS1246, SS1247, SS1248, SS1250, SS1251, SS1252, SS1253, SS1254, SS1255, SS1257, SS1259, SS1260, SS1261, SS1262, SS1263, SS1264, SS1265, SS1266, SS1272, SS1273, SS1274, SS1275, SS1276, SS1277, SS1278, SS1279, SS1280, SS1281, SS1282, SS1283, SS1285, SS1286, SS1288, SS1289, SS1291, SS1292, SS1293, SS1294, SS1295, SS1297, SS1298, SS1299, SS1300, SS1301, SS1302, SS1305, SS1307, SS1308, SS1310, SS1311, SS1312, SS1314, SS1315, SS1316, SS1318, SS1319, SS1320, SS1321, SS1325, SS1327, SS1328, SS1329, SS1331, SS1566, and SS1568.

The North Jurassic/Flat Top area is approximately 39,563 acres.

North Jurassic/FlatTop Total Miles: 99

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	48	Open to all use	36	Open to all use	75	Open to all use	92
Limited by season	1	Limited by season	1	Limited by season	1	Limited to vehicles less than 66"	5
Closed	50	Closed	61	Closed	23	Closed	2

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 50 miles (51%) of the evaluated routes in this area would remain closed and 1 mile (1%) would remain limited.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 61 miles (62%) of the evaluated routes would be closed and 1 mile (1%) would be limited.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 23 miles (23%) of the evaluated routes would be closed and 1 mile (1%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 2 miles (2%) of the evaluated routes would be closed and 5 miles (5%) would be limited.

In addition to the evaluated routes, there were 8 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.19 SIDS MOUNTAIN / WIKIUP

The Sids Mountain area is made up of towering cliffs, unique geological features, and large washes/canyons. Popular recreation activities within this area are OHV riding, dispersed camping, cultural/historic viewing, geologic viewing, scenic viewing, wildlife viewing, hunting, hiking, horseback riding, mountain biking, canyoneering, rock climbing, and backpacking. Most of this network area is within the San Rafael Swell Recreation Area or Wilderness Areas. This route network geographic area provides access to some of the most scenic and challenging trails in the TMA as well as many wilderness trailheads, historic sites, viewpoints, and geologic features. The Sids Mountain trail system is made up of popular OHV routes including Devils Racetrack, Eva Conover, Fixit Pass, Cane Wash, and Coal Wash. These routes form wilderness area boundaries and afford some of the best access to remote, rugged canyon terrain in the recreation area. Roadside points of interest and features include the ZCMI mine, Slipper Arch, the Twin Priests, Joe and his Dog, and many other unnamed formations. Wilderness destinations include North Salt Wash, Saddle Horse Canyon, and Sids Mountain in the Sids Mountain Wilderness; the Blocks in Cold Wash Wilderness; and the Eagle Canyon technical route in Eagle Canyon Wilderness. This network area is the most popular in the TMA for backpacking. The Wikiup area has additional OHV loop routes that link the popular staging and camping areas accessed by I-70 near Exit 131 to the destination OHV trails. The Wikiup/Juniper area is listed as a large group site in the 2008 Price RMP and has been used that way for decades. Another large group site in the unit is Horn Silver Gulch/Bellevue Flats, which also serves as another staging and dispersed camping area located in the northwestern part of this area. The northeastern end of this area has several old uranium mining development sites at which mining equipment can be viewed. Towards the southern end of this area, visitors can view the Dutchman's Arch and the Head of Sinbad rock art panels. Vast and remote, this network area has some of the greatest scenic qualities within the TMA with many opportunities for solitude and challenge for both motorized and nonmotorized users. This area is also frequented by desert bighorn sheep and other wildlife that people enjoy watching and occasionally hunting.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This area contains the Sids Mountain, Cold Wash, and Eagle Canyon Wilderness Areas. This geographic area contains the Sids Draw, and portions of the Sids Mountain lands with wilderness characteristics inventoried units. This area contains a portion of the I-70 Scenic ACEC. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Yellow-billed Cuckoo, Barnaby Reed Mustard, Jones Cycladenia, Last Chance Townsendia, San Rafael Cactus, Wright-Fishook Cactuc, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Sids Mountain/Wikiup route network geographic area: SS2817, SS2819, SS3008, SS3009, SS3010, SS3011, SS3012, SS3013, SS3015, SS3016, SS3017, SS3018, SS3019, SS3020, SS3021, SS3022, SS3023, SS3025, SS3026, SS3029, SS3032, SS3033, SS3035, SS3036, SS3037, SS3038, SS3039, SS3040, SS3041, SS3042, SS3043, SS3044, SS3045, SS3047, SS3048, SS3049, SS3050, SS3052, SS3053, SS3054, SS3056, SS3058, SS3059, SS3060, SS3061, SS3064, SS3065, SS3068, SS3069, SS3070, SS3071, SS3072, SS3074, SS3075, SS3076, SS3078, SS3080, SS3081, SS3083, SS3083A, SS3090, SS3240, SS3241, SS3242, SS3243, SS3244, SS3245, SS3252, SS3255, SS3256, SS3257, SS3260, SS3262, SS3264, SS3268, SS3269, SS3270, SS3271, SS3272, SS3273, SS3274, SS3275, SS3276, SS3277, SS3278, SS3279, SS3280, SS3281, SS3283, SS3284, SS3285, SS3286, SS3290, SS3292, SS3293, SS3294, SS3295, SS3297, SS3298, SS3299, SS3302, SS3303, SS3304, SS3305, SS3306, SS3307, SS3308, SS3314, SS3316, SS3317, SS3318, SS3320, SS3322, SS3323, SS3327, SS3328, SS3329, SS3330, SS3331, SS3332, SS3333, SS3334, SS3335, SS3359, SS3361, and SS7000.

The Sids Mountain/Wikiup area is approximately 148,336 acres.

Sids Mountain/Wikiup Total Miles: 170

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	132	Open to all use	127	Open to all use	146	Open to all use	166
Closed	38	Closed	43	Limited to vehicles less than 66"	1	Limited to vehicles less than 66"	1
				Closed	24	Closed	2

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 38 miles (21%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 43 miles (25%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 24 miles (14%) of the evaluated routes would be closed and 1 mile (<1%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 2 miles (1%) of the evaluated routes would be closed and 1 mile (<1%) would be limited.

In addition to the evaluated routes, there were 28 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.20 SURROUNDING GOBLIN VALLEY

The area surrounding Goblin Valley is highlighted by geologic features—the hoodoo-rimmed mesas in the center, aesthetically sculpted buttes to the east, drifting sand dunes in the north, and the slopes of the San Rafael Reef to the west. Goblin Valley State Park is located in the center of the network area; decisions would not impact public access to any part of the state park. Recreation opportunities within this area are dispersed camping, hiking, canyoneering, cultural/historic viewing, geologic viewing, scenic viewing, horseback riding, OHV riding, hunting, mountain biking, geocaching, and photography. This geographic area contains a part of the San Rafael Swell Recreation Area, the entirety Big Wild Horse and Middle Wild Horse Mesa wildernesses, and portions of the Muddy Creek Wilderness. This network area has the most popular trail within the Price Field Office (Little Wild Horse slot canyon) as well as the South Temple Wash Campground. When the BLM campground and the state park campgrounds are full, this area receives overflow dispersed camping activities. There are two routes that travel south out of this unit and are critical connections to routes in Wayne County, including the only place in this region that an OHV can cross Muddy Creek. Many of the potential network routes in this area are boundary roads to Wilderness and provide motorized access to undeveloped trailheads that serve non-motorized activities.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This area contains the Goblin Valley State Park, as well as the Big Wild Horse, Middle Wild Horse, and a portion of the Muddy Creek Wilderness Areas. This geographic area contains portions of the Wild Horse Mesa and Muddy Creek Crack Canyon lands with wilderness characteristics inventoried units. This area contains a portion of the San Rafael Reef South ACEC. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Southwest Willow Flycatcher, Barnaby Reed Mustard, Jones Cycladenia, Last Chance Townsendia, San Rafael Cactus, Winkler Cactus, Wright-Fishhook Cactus, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Surrounding Goblin Valley route network geographic area: SS4323, SS4324, SS4325, SS4327, SS4328, SS4330, SS4331, SS4332, SS4334, SS4335, SS4336, SS4337, SS4338, SS4339, SS4340, SS4341, SS4342, SS4371, SS4398, SS4423, SS4428, SS4429, SS4430, SS4431, SS4432, SS4433, SS4434, SS4435, SS4436, SS4437, SS4438, SS4439, and SS4440.

The Surrounding Goblin Valley area is approximately 82,417 acres.

Surrounding Goblin Valley Total Miles: 38

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	29	Open to all use	23	Open to all use	31	Open to all use	37
Closed	9	Closed	15	Closed	7	Closed	1

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 9 miles (23%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 15 miles (40%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 7 miles (19%) of the evaluated routes would be closed.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 1 mile (2%) of the evaluated routes would be closed.

In addition to the evaluated routes, there were 34 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.21 SWASEYS CABIN / REDS CANYON

The Swaseys Cabin/Reds Canyon area is made up of towering cliffs, unique geological features, and large washes/canyons. Popular recreation activities within this area are OHV riding, dispersed camping, cultural/historic viewing, geologic viewing, scenic viewing, wildlife viewing, hunting, rockhounding, hiking, horseback riding, mountain biking, backpacking, and occasionally river rafting. This unit contains a part of the congressionally designated San Rafael Swell Recreation Area. This route network geographic area provides access to some of the most popular OHV routes in the TMA. These trails are frequently used for commercial tours and permitted events each year. Some of the OHV destination trails in this area are Eagle Canyon, Swaseys Cabin, Rods Valley, and Reds Canyon Loop. Some of the trails and camping areas in the northern part of this area link with the Sids Mountain trails and provide full-day OHV loop opportunities. Dispersed camping is popular along the north portion of this area for people who are hunting or OHV riding. The southern part of this area mostly consists of Wilderness, but the boundary roads provide crucial access to areas such as Tomsich Butte, Lucky Strike Mine, Family Butte, and other popular mining areas and dispersed camping sites. Tomsich Butte is also used for dispersed camping near Muddy Creek and is often used as an undeveloped trailhead for motorized activities such as hiking, backpacking, canyoneering, and occasionally river rafting. Old mining roads and abandoned mine features can be found throughout this route network geographic area and are now used as additional OHV loops and destination sites for people to view and learn about the historic mining in the San Rafael Swell. Beyond the scenic quality that these trails offer, they also provide more challenging OHV loop opportunities for those who seek rocky/difficult trail experiences. This area is also frequented by desert bighorn sheep and other wildlife that people enjoy watching and hunting.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This area contains the Reds Canyon Wilderness, and a portion of the Muddy Creek Wilderness Area. This geographic area contains the Hondu Country BLM Natural Area, and the Block Mountain lands with wilderness characteristics inventoried unit. This area contains a portion of the Muddy Creek and I-70 Scenic ACECs, and the Tomsich, Lucky Strike, and Swasey Cabin Historic ACEC's. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed Mustard, Jones Cycladenia, Last Chance Townsendia, San Rafael Cactus, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Swaseys Cabin/Reds Canyon route network geographic area: SS2714, SS4001, SS4002, SS4003, SS4004, SS4005, SS4006, SS4008, SS4010, SS4011, SS4013, SS4014, SS4015, SS4016, SS4017, SS4018, SS4019, SS4020, SS4021, SS4026, SS4027, SS4033, SS4034, SS4035, SS4036, SS4037, SS4038, SS4039, SS4040, SS4042, SS4043, SS4045, SS4046, SS4047, SS4048, SS4049, SS4050, SS4051, SS4052, SS4053, SS4054, SS4056, SS4059, SS4060, SS4061, SS4062, SS4063, SS4064, SS4065, SS4066, SS4067, SS4068, SS4069, SS4070, SS4071, SS4072, SS4074, SS4075, SS4077, SS4080, SS4082, SS4083, SS4085, SS4086, SS4087, SS4088, SS4089, SS4090, SS4091, SS4093, SS4095, SS4096, SS4097, SS4099, SS4100, SS4101, SS4102, SS4103, SS4105, SS4106, SS4107, SS4108, SS4111, SS4112, SS4114, SS4115, SS4116, SS4117, SS4118, SS4119, SS4120, SS4121, SS4122, SS4124, SS4125, SS4126, SS4127, SS4130, SS4133, SS4134, SS4135, SS4136, SS4137, SS4138, SS4139, SS4141, SS4141, SS4142, SS4145, SS4147, SS4148, SS4149, SS4150, SS4151, SS4154, SS4155, SS4156, SS4159, SS4160, SS4161, SS4162, SS4163, SS4164, SS4165, SS4166, SS4167, SS4168, SS4169, SS4170, SS4171, SS4172, SS4173, SS4175, SS4176, SS4177, SS4178, SS4179, SS4180, SS4181, SS4182, SS4183, SS4184, SS4185, SS4186, SS4187, SS4188, SS4191, SS4192, SS4193, SS4194, SS4195, SS4196, SS4197, SS4198, SS4199, SS4200, SS4202, SS4203, SS4204, SS4205, SS4206, SS4206A, SS4207, SS4208, SS4209, SS4210, SS4211, SS4212, SS4213, SS4214, SS4215, SS4219, SS4220, SS4221, SS4222, SS4223, SS4224, SS4225, SS4441, SS4443, SS4444, SS4445, SS4446, SS4448, SS4449, SS4450, SS4451, SS4452, SS4453,

SS4454, SS4455, SS4456, SS4457, SS4458, SS4459, SS4460, SS4461, SS4463, SS4464, SS4465, SS4466, SS4467, SS4468, SS4470, SS4471, SS4472, SS4473, SS4474, SS4475, SS4476, SS4478, SS4479, SS4480, SS4482, SS4483, SS4484, SS4485, SS4486, SS4487, SS4488, SS4489, SS4490, SS4491, SS4492, SS4493, SS4495, SS4496, SS4497, SS4498, SS4499, SS4502, SS4503, SS4504, SS4505, SS4506, SS4507, SS4508, SS4509, SS4510, SS4513, and SS4513A.

The Swaseys Cabin/Reds Canyon area is approximately 70,168 acres.

Swaseys Cabin/Reds Canyon Total Miles: 158

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	111	Open to all use	98	Open to all use	118	Open to all use	151
Closed	46	Closed	60	Closed	39	Limited to vehicles less than 66"	4
						Closed	2

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 46 miles (29%) of the evaluated routes in this area would remain closed.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 60 miles (38%) of the evaluated routes would be closed.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 39 miles (25%) of the evaluated routes would be closed.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 2 miles (2%) of the evaluated routes would be closed.

In addition to the evaluated routes, there were 22 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

C.22 TEMPLE MOUNTAIN

Temple Mountain offers a high concentration of routes leading to the uplands of the San Rafael Swell east into the drainages of the San Rafael Reef. Recreation opportunities within this area are OHV riding, dispersed camping, cultural/historic viewing, geologic viewing, scenic viewing, hiking, canyoneering, hunting, mountain biking, geocaching, and photography. This geographic area contains part of the San Rafael Swell Recreation Area and San Rafael Reef wilderness. Popular destinations include the Temple Mountain Townsite Campground and the Colored Trails/Dick Brass Trails/Temple Mountain Trails (Twin Knolls) motorcycle trail network. This trail system provides a variety of difficulty levels and includes the extremely challenging 5 Miles of Hell Trail, which attracts users wanting to test their motorcycle skills. Because of the difficultly, the Lone Man Trail in the northern portion of this route network geographic area is often used to recover wrecked bikes or injured users. Temple Mountain itself is the site of an historic mining district with mine shafts, abandoned equipment, and historic buildings/cabins that attract visitors wanting to see evidence of the area's history. Dispersed camping along Temple Mountain Road (southern/western boundary) is very popular because of its scenic quality, proximity to Highway 24, and vicinity to trailheads and OHV routes.

General resources within this geographic area are soils, vegetation, air, water, wildlife, cultural, paleontological, visuals, recreational, grazing, and other natural resources. This area contains a portion of the San Rafael Reef Wilderness Area and portions of the San Rafael Reef lands with wilderness characteristics inventoried units. This area contains a portion of the San Rafael Reef North ACEC and the Temple Mountain Historic ACEC. This area also contains habitat for threatened and endangered species such as the Mexican Spotted Owl, Barnaby Reed Mustard, Jones Cycladenia, Last Chance Townsendia, San Rafael Cactus, and Ute's Ladies Tresses. While creating route network alternatives, BLM considered whether OHV use of the routes conflicts with these resources and other uses of the public lands and whether those conflicts could be minimized.

Routes within the Temple Mountain route network geographic area: SS2534, SS2565, SS2566, SS2567, SS2568, SS2569, SS2570, SS2572, SS2573, SS2574, SS2576, SS2577, SS2578, SS2579, SS2581, SS2582, SS2583, SS2584, SS2585, SS2586, SS2587, SS2588, SS2589, SS2590, SS2591, SS2592, SS2593, SS2594, SS2595, SS2596, SS2597, SS2598, SS2599, SS2601, SS2602, SS2603, SS2605, SS2606, SS2607, SS2608, SS2609, SS2610, SS2611, SS2612, SS2613, SS2614, SS2615, SS2616, SS2617, SS2618, SS2619, SS2620, SS2621, SS2622, SS2623, SS2624, SS2625, SS2626, SS2627, SS2628, SS2631, SS2633, SS2634, SS2635, SS2637, SS2638, SS2639, SS2640, SS2641, SS2642, SS2643, SS2644, SS2648, SS2652, SS2653, SS2656, SS2657, SS2658, SS2659, SS2660, SS2661, SS2662, SS2663, SS2664, SS2666, SS2667, SS2668, SS2669, SS2670, SS2671, SS2672, SS2675, SS2677, SS2678, SS2679, SS2680, SS2681, SS2682, SS2683, SS2684, SS2686, SS2687, SS2689, SS2690, SS2691, SS2694, SS2695, SS2697, SS2698, SS2699, SS2700, SS2701, SS2712, SS2713, SS2721, SS2722, SS2723, SS2724, SS2725 ,SS2726, SS2727, SS2728, SS2730, SS2736, SS2738, SS2743, SS2744, SS2745, SS2746, SS2750, SS2752, SS2753, SS2754, SS2755, SS2755A, SS2756, SS2757, SS2758, SS2760, SS2761, SS2762, SS2764, SS2765, SS2766, SS2776, and SS2824.

The Temple Mountain area is approximately 47,282 acres.

Temple Mountain Total Miles: 98

Alternative A	Miles	Alternative B	Miles	Alternative C	Miles	Alternative D	Miles
Open to all use	27	Open to all use	18	Open to all use	31	Open to all use	59
Limited to single-track vehicles	33	Limited to vehicles less than 66"	4	Limited to vehicles less than 66"	15	Limited to vehicles less than 66"	16
Closed	38	Limited to single-track vehicles	22	Limited to single-track vehicles	33	Limited to single-track vehicles	22
		Closed	53	Closed	19	Closed	1

Alternative A would minimize impacts to the listed resources in this area because no new routes are being constructed, and 38 miles (36%) of the evaluated routes in this area would remain closed and 33 miles (36%) would remain limited.

Alternative B would minimize impacts to the listed resources in this area because no new routes are being constructed, and 53 miles (55%) of the evaluated routes would be closed and 26 miles (26%) would be limited.

Alternative C would minimize impacts to the listed resources in this area because no new routes are being constructed, and 19 miles (19%) of the evaluated routes would be closed and 48 miles (50%) would be limited.

Alternative D would minimize impacts to the listed resources in this area because no new routes are being constructed, and 1 mile (1%) of the evaluated routes would be closed and 38 miles (38%) would be limited.

In addition to the evaluated routes, there were 13 miles of originally inventoried routes in this route network geographic area that were removed from consideration in the EA because they were closed in all alternatives for not having an identified motorized public purpose and need, or for having significant resource concerns.

Therefore, each alternative is consistent with the designation criteria identified in 43 CFR 8342.1 through the minimization of impacts to the listed resources identified in this area.

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APPENDIX D RECREATION RESOURCE CONSIDERATIONS

D.1 MANAGEMENT FRAMEWORK

The 2008 RMPs direct the BLM to manage for dispersed recreation throughout the field office in a way that protects resources, facilitates education, and minimizes conflicts with other uses. For more information on recreation in the TMA, see pages 3-72 to 3-76 of the 2008 Price Proposed RMP/EIS (BLM 2008d) and pages 3-94 to 3-97 of the 2008 Richfield Proposed RMP/EIS (BLM 2008f).

In addition, the Price 2008 RMP created the San Rafael Swell Special Recreation Management Area (SRMA), the Buckhorn/Wedge- Temple Mountain- and Sinbad/Swaseys Cabin/Sids Mountain-Recreation Management Zones (RMZs), and the Price Field Office Extensive Recreation Management Area (ERMA) to facilitate recreation management and specify recreation goals and strategies in the TMA.

For route network geographic areas within the San Rafael Swell SRMA, the potential impacts of each alternative are framed by the SRMA's, or respective RMZ's, outcomes. In the outcome-focused management framework, the BLM identifies desired social, economic, personal, and environmental outcomes in the RMP and plan activities to attain those outcomes. Thus, alternatives which facilitate the desired outcomes benefit the recreation experience; those which move further from those outcomes have the potential to degrade it. Common threads between the outcomes for both the SRMA and the ERMA which recur throughout the analysis are protecting natural, cultural, and historic resources; providing opportunities for personal challenge, growth, and risk-taking; and maintaining the recreation setting's character.

San Rafael Swell Special Recreation Management Area

This SRMA has both heavily used areas such as Little Wild Horse Canyon, the Wedge Overlook, Buckhorn Panel, and the Temple Mountain area as well as more rugged and dispersed areas for visitors to explore. Primary recreation activities that fall under BLM targeted outcomes for this SRMA include vehicle exploration, scenic viewing, camping, rock art viewing, cultural/historical exploration, backcountry hiking and backpacking, canyoneering, horseback riding, wilderness therapy and education, and river-running on the San Rafael River and Muddy Creek (BLM 2008d Appendix R-9 Table R9-5). BLM's desired experiences and benefits for this SRMA range from family togetherness and nostalgia to risk taking and achievement to positive contributions to the local economy (BLM 2008d Appendix R-9 Table R9-5).

The five most popular recreation opportunities are very well known due to both interpersonal ties and publicity in guidebooks, magazines, tourism websites, and social media. These areas are also classified as semi-primitive motorized settings or, in the case of Buckhorn Draw and the Wedge, roaded natural and rural (which allow for an even higher level of physical alteration, recreational use, and onsite management).

Cleveland-Lloyd Dinosaur Quarry Special Recreation Management Area

Primary recreation activities under BLM targeted outcomes for this SRMA include paleontological site visitation, heritage tourism, hiking, interpretive exhibit viewing, recreational learning, picnicking, and hiking with interpretation. These recreation activities largely occur at the quarry itself (now part of Jurassic National Monument).

Extensive Recreation Management Areas

ERMAs are managed to support and sustain recreation commensurate with other resources (BLM 2014b). Consequently, in ERMAs, the RMPs give recreation only custodial management of visitor health and safety, user conflict, and resource protection (BLM 2008e, BLM 2008g). The Richfield RMP further states that ERMA management objectives are to: provide a variety of recreational opportunities, including

primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, and rural; and provide outdoor settings ranging from areas with a high-to-moderate opportunity for solitude and closeness to nature (where visitors should be prepared for a high level of self-reliance, challenge, and risk) to areas where visitors have the convenience of facilities and a higher interaction with other users (BLM 2008g). Within the Price ERMA, users are primarily OHV recreationists, as most nonmotorized use is concentrated in the SRMA (wilderness areas and BLM-developed trails and recreation sites).

D.2 MOTORIZED RECREATIONIST DESIRED EXPERIENCES

Research indicates that the most common motivators of motorized recreationists are family togetherness and spending time with others; discovering new places and skills; experiencing excitement; and experiencing nature and the outdoors. Other motorized motivators include personal skill development, physical and technical challenges, finding solitude, and getting to know an area (Frey et al. 2018, Smith et al. 2021). Common companion activities including camping, hiking, viewing scenery, and recreational shooting (Smith et al. 2021, Kil et al. 2012). Within Utah specifically, frequent riders may be more likely to ride for challenge, excitement, and personal achievement, and thus benefit from having a variety of routes and especially difficulties (Smith and Burr 2011). These values align with two recurring themes in the scoping comments for this plan.

D.3 METHODS OF ANALYSIS

In recreation, the magnitude (severity) of an impact can be influenced by whether or not it relates directly to a planning outcome as well as the number of people impacted. These elements are presented in the Affected Environment and used to contextualize the potential impacts of each alternative. Within each section of both the motorized and nonmotorized issues, changes which could substantively impact recreation opportunities, access, and experiences are summarized within each affected route network geographic area in table form. Indirect effects; patterns between route network geographic areas; changes which substantively deviate from RMP desired outcomes or would impact a large number of users; and changes which have meaningful implications for health and human safety are summarized in the subsequent narrative along with anticipated secondary impacts from changes not listed in the tables.

D.4 RECREATION OPPORTUNITIES SPECTRUM

The BLM utilizes the Recreation Opportunities Spectrum (ROS) model to identify zones with different physical, administrative, and social recreation setting characteristics (RSCs). Almost all of the TMA is classified in the primitive, semi-primitive motorized, or semi-primitive nonmotorized ROS classes. In these areas, the RSCs are:

- Few to moderate encounters with other parties, and a very low user density in primitive areas (all wilderness)
- Onsite management that is present but subtle, and very low in primitive areas
- Isolated or rare structures
- Natural setting with moderate (semi-primitive motorized), subtle (semi-primitive nonmotorized), or essentially no (primitive) human modifications

Additionally, strong evidence of OHV trails, routes, and roads is acceptable in semi-primitive motorized areas. There should be little to no evidence of OHV routes in semi-primitive nonmotorized and primitive areas.

These setting characteristics, along with intangible experiences and benefits, are used to analyze whether each alternative moves the BLM towards or away from site-specific recreation management objectives. In this analysis, “crowding,” “user density,” and other similar terms refer to perceived crowding due to the number of encounters, or the probable number of encounters, *not* the overall volume of visitation because

perceptions of crowding have been shown to be more correlated with the former than the latter (Allen 2019). Tolerance for user encounters varies user-to-user, but patterns within user groups based on survey research are used to establish desired conditions. The BLM attains RMP objectives when:

1. The aforementioned RSCs are maintained.
2. The social conditions preferred on the user-group level for those user groups identified in the RMP are maintained; across the board, these largely mirror the RSCs.
3. User groups are able to attain their desired outcomes in harmony with one another, i.e., not one at the expense of another, and without user conflict or safety concerns.

Examples of how the TMP could move the BLM away from RMP objectives include:

1. Route designations which increase the number of visitor encounters or necessitate onsite management where little to no management is preferred.
2. Route designations which increase the evidence of motorized trails, route, or trailheads beyond the desired amount for that ROS class.
3. Route designations which detract from the experience of RMP-identified user groups or increase potential for user conflict.
4. Route designations which do not balance motorized access with undeveloped backcountry appropriate to RMP designations (SRMA, SRMA RMZ, ERMA).

While the RMPs identify primary activities for the ERMAs, SRMAs, and individual RMZs, specific user groups are not prioritized in any instance. Cultural and heritage tourism are highlighted throughout the San Rafael Swell SRMA and RMZs in the form of distinctive and significant rock art sites, remnants of outlaw-era settlements and bootlegging, and Cold War-era mines. Presently, all user groups can appreciate these resources to varying degrees, and no sites are closed beyond several uranium mines which have been sealed for health and human safety. While methods of authorized access may change under the alternatives, no site closures exist or are proposed.

D.5 VISITOR USE ESTIMATES

Recreation visits for each travel network geographic area have been estimated from BLM vehicle counters (in most cases, an average of 2.5 persons per vehicle was predicted) and are also presented in Table 3-12. These counters are placed at access points and on specific trails, usually those leading to popular recreation sites. A higher number of counters lends stronger certainty, though in some cases a single access road allowed the BLM to capture most or all visitation into a given area.

D.6 CHANGES AND EXCEPTIONS

Travel management is an ongoing action and, per both the PFO and RFO RMPs, can be adapted to changing conditions. REC-7 and OHV-8 allow the BLM to carry out activity-level plans in establishing new motorized recreational trail systems or small OHV-Open areas (BLM 2008d p. 104, 114). OHV-2 and OHV-3 give the PFO authorizing officer discretion to close or impose limitations on designated routes if OHVs are causing or will cause adverse impacts or resource damage and OHV-9 directs the BLM to review routes which are OHV-Limited periodically and make changes based on resource conditions and changes of use. In the Richfield RMP in REC-1, REC-4, REC-9, REC-10, TRC-3, and TRC-6 provide the same authorities, minus the allowance of activity-level plans in the RFO ERMA.

While all active SRPs are restricted to designated routes, activities off of designated routes may be considered. If such an application is accepted, it would be analyzed a project-level Environmental Assessment. Under such conditions the BLM may authorize isolated use of close routes, construction of new, temporary routes, or off-route open use in a confined area. During the NEPA analysis, the BLM

ensures that the activities will not create permanent resource damage and bonds the applicant as appropriate to reclaim ground disturbance.

D.7 ANALYSIS AREA

National forests and BLM land are the only public ownerships which generally have free access (versus national and state parks). USFS land is not considered in the analysis area, however, because seasonal access and weather conditions are a larger determining factor in visitation than the recreation opportunities of a given area (Smith and Miller 2020).

D.8 DISPERSED CAMPING

There are no RMP limitations on non-vehicle supported dispersed camping (e.g., backpacking) in the TMA, therefore camping may occur along any designated route and route closures do not result in dispersed camping closures. Camping facilitates many of the targeted outcomes of the RMP including family togetherness, escape from social pressure, and physical rest (BLM 2008d Appendix R-9). Balancing camping with resource protection is an ongoing management priority. For example, resource damage (from campsite proliferation and trash) and public health and safety issues (from human waste) in high-use camping areas are the main drivers when deciding whether to develop a dispersed camping area into a fee campground.

D.9 NONMOTORIZED RECREATION

With few exceptions, nonmotorized recreation in the TMA is unmaintained and minimally developed yet concentrated in specific locations. This means there is a robust user knowledge network beyond the information provided by the BLM such as guidebooks, guide websites, online forums, and other user to user communication.

APPENDIX E 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 § 800 to identify, evaluate, and resolve potential adverse effects to historic properties (including traditional cultural properties) for travel and transportation management undertakings. To show BLM's adherence to the stipulations of the Travel PA, Table Appx - 23 lists the requirements of the Travel PA BLM has and is adhering to.

Table Appx - 23: Stipulations of the Travel PA Adhered to by BLM

Travel PA and the 2017 Settlement Agreement	Did BLM Fulfill Requirement
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.	Yes
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.	Yes
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.	Yes

Travel PA and the 2017 Settlement Agreement	Did BLM Fulfill Requirement
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.	Yes
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.	Pending
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.	Pending

APPENDIX F CULTURAL RESOURCE REGULATORY CONSIDERATIONS AND DEFINITIONS

While NEPA requires BLM to make a reasoned analysis of the effects of an action containing quantitative or detailed qualitative information to explain the relation between a resource and an action, cultural resources (archaeological and historic) data for this analysis is gathered and evaluated in a separate-yet-related process prior to, or in conjunction with, the NEPA process. BLM analyses the cultural resources data for potential effects through a process required by Section 106 of the National Historic Preservation Act (Section 106; NHPA) before those results are used in the NEPA analysis. Typically, NEPA analysis of cultural resources is broader and more general than the Section 106 process, which is highly detailed and prescribed.

Cultural resources are identified under Section 106 though combinations of inventories and surveys conducted by professional archaeologists, which are methods of finding "a representation of the cultural resource content of a geographical locale" (BLM 2004b). The BLM system for cultural resources identification is comprised of three methodological classifications: Class I Existing Information Inventory, Class II Probabilistic Field Survey, and Class III Intensive Field Survey. Class I inventory and Class III survey were used to identify cultural resources for this TMP under the Section 106 process. If the current analysis identifies a need for additional Section 106 work along designated routes after approval of the TMP, per Stipulation III.B.1. of the Travel PA the work would be designed using a Class II approach. All three methods begin with in-depth literature reviews, which inform the BLM on the existing site data specific to an undertaking's location.

BLM Manual 8100 defines cultural resources as "definite location[s] of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence" (2004b). The term includes archaeological, historic, and architectural sites, structures, places, and objects with important scientific, educational, and public uses. Also umbrellaed by this term are definite locations (sites and places) of traditional cultural or religious importance to specified social and/or cultural groups. Simply put, cultural resources are concrete, material places and things that are located, identified, classified, ranked, managed, and protected by federal agencies (BLM 2004b).

During identification and documentation of cultural resources for the TMP, standard 2020 Utah BLM site and isolated find definitions were used; the minimum criteria for defining archaeological sites are they should contain remains of past human activity that are at least 50 years old and consist of one or more of the following:

- At least 10 artifacts of a single class (e.g., 10 sherds) within a 10-meter-diameter area, except when all pieces appear to originate from a single source (e.g., one ceramic pot, one glass bottle).
- At least 15 artifacts that include at least two classes of artifact types (e.g., sherds, nails, or glass) within a 10-meter-diameter area.
- One or more archaeological features in temporal association with any number of artifacts.
- Two or more temporally associated archaeological features without artifacts.

Cultural resources that fall below the thresholds for an archaeological site are considered isolated finds (IFs), certain types of which are exempted from recording based on professional judgement with agency approval. Conversely, archaeological discoveries which are less substantial than those defined by the criteria above may be recorded as sites if a professional archaeologist believes they are significant. Buildings and structures, as defined by the NRHP, are never considered IFs, regardless of their standing or collapsed disposition.

As part of their documentation during Class III surveys, all cultural resources are professionally evaluated as to their eligibility for inclusion in the National Register of Historic Places (NRHP), using the evaluation criteria defined at 36 CFR § 60.4:

National Register criteria for evaluation. The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that 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) that have yielded, or may be likely to yield, information important in prehistory or history.

During Class III reporting to the BLM, the contractors recommended whether each site qualifies as eligible or not eligible for inclusion in the NRHP, and stated which are already listed on the NRHP or cannot be evaluated currently and why. The BLM accepted these recommendations and will determine final eligibilities after Section 106 consultation.

The NRHP significance categories include Listed, Eligible, Not Eligible, and Undetermined. For the purposes of this analysis, sites necessarily left undetermined for NRHP eligibility are treated as though they are eligible. IFs can be Eligible or Not Eligible for the NRHP.

Expectations for cultural resources that may be encountered within the TMA were established prior to the Class III surveys through review of the regional Class I Existing Inventories of the PFO and RFO jurisdictions, which were compiled in 2017 following the Settlement Agreement requirements. Krussow et al. compiled the following summary of cultural contexts and expectations for the comprehensive TMA prior to the Class III, based on the Class I inventories:

> There is potential to encounter prehistoric, historic, [and ethnohistoric] cultural resources within the TMA. Current archaeological evidence indicates that people first arrived in the eastern Great Basin and northern Colorado Plateau approximately 13,000 years ago, near the end of the last ice age during the terminal Pleistocene. Over the last 13,000 years, the lifestyles of the people inhabiting the region have varied widely. The Paleoarchaic Period (prior to approximately 7,000 B.C.) is characterized by big game subsistence patterns with small groups of relatively mobile foragers who used most sites only briefly or infrequently; archaeological sites from this period are significant due to scarcity. The Archaic Period (7,000 B.C. – A.D. 1) is characterized by hunter-gatherer lifestyle with well-established seasonal movement for resource procurement. There is a vanishing scarcity of sites from this period, though the later part of this period saw the establishment of larger villages, the beginning of horticulture, and the higher use of rock shelters, where the dry atmosphere preserved an array of perishable items. The Formative Period (B.C. 150 – A.D. 1450) is marked by an emphasis on corn and other domesticated plants; on settlement in sedentary or semisedentary areas optimal for horticulture; and on the introduction of pottery (Matson 1991). The Formative Period in the San Rafael Swell is represented by Fremont occupation. Fremont sites range from large, settled villages to ephemeral camps that suggest a high degree of mobility; caves and rockshelters also continued to be used during the Fremont period (e.g., Aikens 1970; Bryan 1977). The Protohistoric Period (A.D. 1450 – A.D. 1850) is marked by the abandonment of horticulture and sedentary settlement systems and a return to mobile hunter-gatherer subsistence patterns, likely driven by regional climatic factors. In the San Rafael Swell,

there is evidence from this period of occupation by Numic-speaking peoples. Based on Euro-American historic and ethnohistoric accounts, the San Rafael Swell was considered Ute territory by the A.D. 1800s. However, 16 different Native American tribes currently claim ancestral affiliation with the San Rafael Swell, including Ute, Paiute, Navajo, Shoshone, and Puebloan groups. The Historic Period can be divided into five further major periods: the Early Exploration and Settlement period (1775–1880), the Industry and Growth period (1881–1929), the Great Depression period (1929–1940), the World War II period (1940–1945), and the Postwar period (1945–present). Euro-American settlement patterns during the Historic Period are associated with agriculture, homesteading, limited ranching, farming, minerals development, and transportation. Building roads—which were at first wagon roads—became a priority in the general area of the San Rafael Swell and many of the early roads built in the area would eventually become state highways.

The Class I regional overviews and localized literature reviews within the TMA indicate the majority of previously recorded cultural sites within the TMA date within the Prehistoric Period and consist of task-specific artifact scatters, temporary camps, lithic source quarries, long-term habitation sites, and rock imagery. The previously recorded sites dating within the Historic Period are dominated by industrial mining sites, habitations, roads, and historic debris scatters also present. Historical records also indicate that the Fremont Trail and the Old Spanish Trail cross areas of the TMA. The central area of the TMA is known to contain many short-lived mineral prospecting areas, as well as [long-term] historic mining complexes such as the Temple Mountain Mining District; the Hidden Splendor Mine, [airstrip, and habitation complex]; the Lucky Strike Mine; and Copper Globe Mining complex (2021).

In accordance with the Travel PA Stipulation III.A.1.b., prior to Class III fieldwork the BLM conducted Section 106 consultation to establish the TMP's Area of Potential Effects (APE) for cultural resources, following the definition at 36 CFR § 800.16(d):

> *Area of potential effects* means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

Within the overall TMA planning area, the cultural APEs were determined to be:

- Direct APE (potential physical, visual, auditory, or atmospheric effects): 100 feet from centerline on either side of routes, resulting in 200-foot-wide Class III inventory and analysis corridors.
- Indirect APE (potential effects farther in distance, further in time, or cumulative): 0.25-mile from route centerline on either side, resulting in 0.5-mile-wide analysis corridors.

These APEs will serve as the affected environment for this NEPA analysis of cultural resources.

BLM establishes NRHP eligibilities to determine which cultural sites are considered *historic properties* under Section 106. Historic properties are defined as NRHP-listed and NRHP-eligible cultural resources (36 CFR § 800.16(l)[1]). Next, BLM determines whether any anticipated impacts of the NEPA action may have potential to pose adverse effects to historic properties. When evaluating potential effects to historic properties prior to making route designations the BLM considers many additional factors, including but not limited to the current use-level of the route (primary, secondary, or tertiary), durability of its surface (natural soil, native surface, bladed, constructed, graveled, paved, etc.), orientation and in situ location of the property (horizontal or vertical, surface or subsurface, intact or disturbed, etc.), condition of the artifacts and features (stable, eroding, highly fragile, etc.), spatial relation between route and significant resource components (route in/out of contributing/non-contributing), the extent of existing

impacts caused by past events (minor, moderate, major), and current level of BLM visitor management (none, monitored, patrolled, signed, developed, interpreted, etc.).

Adversely affecting a historic property under Section 106 means the action's impacts could potentially alter the content and characteristics of a historic property to the extent the site could no longer be NRHP-listed or -eligible (36 CFR § 800.5(a)[1]). Put simply, an **adverse effect** determination means the action has potential to damage significant archaeological artifacts, features, and data to a degree that the historic property could no longer contribute important information to the understanding of our national and regional histories. Section 106 determinations of **no adverse effect** and **no historic properties affected** can involve impacts to sites, but the degree of those impacts would not be high enough to damage the character, integrity, or NRHP-eligibility of the site.

Analysis of cumulative impacts for NEPA corresponds to the Section 106 analysis of cultural resources in the indirect APE; those cultural resources that could potentially be affected further in time or farther in distance—in other words, cumulative effects of federal actions in the TMA, within 0.25-mile of the edges of the routes being considered for designation as OHV-Open or OHV-Limited under this federal action.

APPENDIX G ROUTE REPORTS

Using the route evaluation inventory, a BLM IDT and their cooperators met for several planning sessions to systematically review and evaluate each of the 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 designations, 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, purpose and need of the route, 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. The header of each page of a route report displays the number that was used to identify the route during evaluation (e.g., SS1112). 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."

Disclaimer: Not all route reports will match perfectly with the analysis work completed in the Environmental Assessment (EA). Route reports are how BLM documented its process for reviewing routes on a route-by-route basis using the best data available at the time of evaluation. Since the original evaluations, new resource inventories have been completed and improved GIS layers have also been developed. BLM again chose to use the most current and best available data for the resource analysis work. Because of this situation and time gap, there may be some discrepancies between the route forms and the EA. BLM has attempted updating the routes forms periodically but recognize that some mistakes may still be present. When a discrepancy is found between the EA/GIS layers and a route forms, what is said in the EA and most recent GIS layers will supersede.

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, route class, 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. The route class identified by the IDT (Road, Primitive Road, or Trail as defined by Manual 1626 Travel and Transportation Manual) also helps define how the BLM would manage or maintain that specific route. Other information may also be included along with citizen comments and proposals, as applicable.

SAMPLE Route Report for SS1112

Facilitator(s): Cam Gale **Initial Evaluation Date:** 10/10/2019

Evaluators: **Jerrad Goodell**, Aquatic Ecologist; **Kegen Benson**, Biologist; **Myron Jeffs**, Outdoor Recreation Specialist; **Stephanie Howard**, Branch Chief for NEPA and GIS; **Michael Knight**, GIS Specialist; **Marc Johson**, Natural Resource Specialist; **Veronica Kratman**, Realty Specialist; **Rebecca Anderson**, Geologist; **William Brant**, Archaeologist; **Jason Carlile**, Range Specialist; **Natalie Fewings**, Archaeologist; **Jim Davis**, Resource Specialist

TMA:	San Rafael Swell TMA			
Management Zones:	Phase 1			
Length: 1.32 mi.	**Width:** Motorcycle Track	**Class:**	Trail	**Use Level:** Medium
Route Type(s):	Spur; Braided			
Surface:	None identified by IDT	**Maintained:**	Minimally by County	
Origin:	None identified by IDT	**Constructed:**	None identified by IDT	
Jurisdictions:	BLM			

Additional Information: County Class D.

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?	**YES**
• 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?	**YES**
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
Lease Facilities	Commercial Rec Permit
Range Facilities	Active Allotment
Mineral Facilities	Mining claim

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	Vehicle Exploring
Modes of Transportation	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
Activities	Camping
Modes of Transportation	ATV

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 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 Mixed Desert Saltbush
	In Other - Wash, Intermittent, Perennial (Intermittent stream)
	In Mixed Sagebrush Shrubland
Special Status Animals	In Fringed myotis modeled habitat (S)
	In Spotted bat modeled habitat (S)
	In Townsend's big-eared bat modeled habitat (S)
	Within 1800 feet of Yellow-billed cuckoo potential habitat (T)
	Within 1800 feet of Southwestern willow flycatcher potential habitat (E)
	Crosses White-tailed prairie dog modeled habitat (S)
Managed Species	In Pronghorn year-long substantial habitat
	Within 1800 feet of Migratory bird high-value habitat
Special Status Plants	In Thompson's talinum, Cedar mountain flameflower (Phemeranthus thompsonii)
VRM/RSC	In VRM Class III - Partially Retain existing char.
	In Inventory Class III
Special Management Areas	In Lands w/ Wilderness Character
Water Resources	Crosses Wash
	Crosses Intermittent stream
Misc. Resources	In PFYC Class 2 - Low
	In Erosive soil - High potential / saline soils
	In Cryptobiotic soil
	In Erosive soil - Moderate potential
	In PFYC Class 3 - Moderate
	In PFYC Class 5 - Very high
Resource Issues	In Noxious weeds

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) simply states the current route and 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. All management actions are listed in the tables of Appendix H (Implementation Guide).

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

Route Designation:
Open

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

Alternative B

Route 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.

How Designation Addresses Criteria Above: Closing this route would reduce overall impact of vehicle use and route footprint in the area. Closing this route would minimize potential impacts to wildlife habitats by eliminating motorized use and removing the route footprint. By closing this route, traffic volume in the area would be reduced, minimizing the potential for impacts to sensitive animal species. Per the Settlement, BLM is directed to analyze within LWCs at least one alternative route network that would enhance BLM-inventoried wilderness characteristics by designating the routes or the relevant portions thereof as closed to public ORV use.

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)

Closure Method: Sign Closed, Natural rehabilitation

Alternative C

Route Designation:
LIMITED

Route Designation Type:
Limited to transportation type.

Specific designations by user type:

Official Users: Official users may use this route by all motorized modes, year-round.

Authorized/Permitted Users: Authorized use can occur on this route, as authorized.
Additional users may be authorized by the BLM through future authorizations.

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

OHV Public: **Designation per 43 CFR § 8342.1: Limited** - The public may use this route by single track vehicles (including motorcycles and all non-motorized modes), 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 the potential for impacts to documented resources by providing targeted recreation activity and experience opportunities that reduce or eliminate the inclination for users to travel off-route. Route provides access to unique and/or exceptional recreational opportunities without causing greater than minimal adverse effects on 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)

Alternative D

Route Designation:
OPEN

Specific designations by user type: Designation per 43 CFR § 8342.1: Open - The public may use this route by all motorized modes, 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: This is a County Class D road. The BLM will work with permittees, ROW holders, counties, and other stakeholders as needed to minimize any known resource impacts or user conflicts in accordance with applicable laws and regulations. Allowing continued use of this route would minimize the potential for impacts to documented resources by providing targeted recreation activity and experience opportunities that reduce or eliminate the inclination for users to travel off-route.

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)

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APPENDIX H IMPLEMENTATION GUIDE

San Rafael Swell Travel Management Plan- Implementation Guide

Price Field Office
125 South 600 West
Price, UT 84501
Phone: 435-636-3600
FAX: 435-636-3657

Richfield Field Office
150 East 900 North
Richfield, UT 84701
Phone: 435-896-1500
FAX: 435-896-1550

LIST OF ACRONYMS

BLM	Bureau of Land Management
CFR	Code of Federal Regulations
GIS	Geographic information system
GPS	Global positioning system
GTLF	Ground Transportation Linear Features
HPTP	Historic Properties Treatment Plan
MUTCD	Manual on Uniform Traffic Control Devices
OHV	Off-highway vehicle
PFO	Price Field Office
RFO	Richfield Field Office
RMP	Resource Management Plan
ROW	Right-of-way
TMA	Travel Management Area
TMP	Travel Management Plan

H.1 INTRODUCTION

This document, the TMP Implementation Guide (Guide), discusses the steps to be taken after the BLM adopts the new TMP. These include:

- Conduct education and outreach.
- Install signs.
- Maintain routes as appropriate.
- Enforce the TMP.
- Monitor effects.
- Reclaim routes as appropriate.

Implementation timing is subject to available staff and funding. Grants, new appropriations, partnerships, and volunteers may be used to supplement budgets and workforce when possible.

H.2 EDUCATION AND OUTREACH

The objectives of education and outreach for the TMP are to attain voluntary public compliance with the designations. The BLM will develop education and outreach materials specific to the TMP. Potential methods of education and outreach include:

- News releases and social media posts
- Brochures and guides
- BLM Maps (hard copy and georeferenced)
- Commercial maps (e.g., National Geographic and Latitude 40)
- Signs (see Section H.3 in this appendix)
- Visitor center displays
- In-person public presentations
- Website/electronic media distribution (e.g., ArcGIS Online map server, Google Earth keyhole markup language (KML) and keyhole markup language zipped (KMZ) files, and universal global positioning system (GPS).
- Partnerships with a broad range of local, county, state, tribal, and federal agencies, as well as service-oriented volunteers, schools, and non-governmental organizations (e.g., Tread Lightly! Inc. and Leave No Trace education and outreach resources).

Policy for education and outreach on BLM lands can be found in the BLM's 1996 Volunteer Manual (BLM 1996), Travel and Transportation Management Handbook (BLM 2012a), Sign Handbook (BLM 2016a), and Sign Manual (BLM 2004c).

H.3 SIGN INSTALLATION

The objectives of sign installation are to make the route network obvious, to promote the health and safety of visitors to public lands, meet visitor needs for information and direction, and reduce user or management issues. As determined necessary based on professional judgement, the BLM will place TMP signs at route intersections, periodically along the route, at route ends, at route closures, and in areas of resource or user issues. Sign categories that may be installed include: identification, guide (navigation), informational, traffic control devices, regulatory/warning/safety, and miscellaneous (e.g., temporary, special event, etc.) (BLM 2016a) 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. Signs will be updated, repaired, or replaced as soon as possible; signs that are found to be unnecessary

will be removed. This TMP would authorize the installation of signs including sign posts in previously disturbed areas and adjacent to the road. The sign types may include directional, portal, and informational. The BLM will use the minimum necessary sign type to achieve route clarity. Installation of kiosks are not authorized in this TMP. Installation of signs is categorically excluded from NEPA (516 Departmental Manual 11.9(G)(2). The BLM will prioritize placing signs:

- In areas with public health and safety concern
- At entrances to and boundaries of areas of national significance (e.g., national monuments, designated wilderness areas, etc.)
- At areas of high recreational use or where it may enhance visitor experience and convenience (e.g., recreation sites, trailheads, backcountry byways, etc.)
- Where route use limitations exist (e.g., limited to a vehicle type, route closed to public motorized use, etc.)
- Where users may become confused about the direction, terminus, designation, or alignment of the route.
- Where resource conflicts may occur (e.g., routes through special status species habitats).

Route-specific signing will occur as shown in Table Appx - 24 if the routes are designated open.

Table Appx - 24: Route-Specific Signing

Route Number	Signing description	Responsible Party
SS2026	Interpretive	BLM
SS2825	Regulatory; Interpretive	BLM
SS4065	Interpretive	BLM

Policy for signs on BLM lands (installation, ordering, etc.) can be found in the BLM's 2016 National Sign Handbook (BLM 2016a) and the Federal Highway Administration's Manual on Uniform Traffic Control Devices, which is also known as the MUTCD (FHWA 2019). Policies for sign design, use, and location are also included in the BLM's Roads Manual (BLM 2015a), Primitive Roads Manual (BLM 2012d), Sign Manual (BLM 2004c), and Travel and Transportation Management Handbook (BLM 2012a).

H.4 MAINTENANCE

The objective of maintenance under the TMP is to ensure safety and navigability for designated routes without changing the class, character, function, or recreational experience of the route. The BLM will maintain the routes[46] at an intensity level appropriate for the route. For example, the routes receiving the heaviest use are the routes subject to level 5 maintenance intensity (see Table Appx - 25).

Table Appx - 25: Maintenance Intensities Under the 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.

[46] Some routes in the TMP are subject to maintenance by authorized users in accordance with their authorizations (e.g., county roads, mine roads, and utility maintenance roads). They also must maintain the route at an intensity level consistent with their authorization.

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.

Policy for road maintenance on BLM lands can be found in the BLM's Manual MS-9113 – Roads (BLM 2015a), Handbook H-9113-2 – Roads Inventory and Condition Assessment Guidance & Instructions (BLM 2015b), and Handbook H-9115-2 – Primitive Roads Inventory and Condition Assessment Guidance & Instructions (BLM 2012b).

Route-specific maintenance will occur as shown in Table Appx - 26 if the routes are designated open.

Table Appx - 26: Route-Specific Maintenance

Route Number	Maintenance Description	Timeframe	Responsible Party
SS2176	Fence Maintenance	One time within 3 years	BLM
SS2347	Remove blockage	One time within 3 years	BLM

Policy for road maintenance on BLM lands can be found in the BLM's Manual MS-9113 – Roads (BLM 2015a), Handbook H-9113-2 – Roads Inventory and Condition Assessment Guidance & Instructions (BLM 2015b), and Handbook H-9115-2 – Primitive Roads Inventory and Condition Assessment Guidance & Instructions (BLM 2012b).

H.5 ENFORCEMENT

The objective of enforcement under the TMP is to provide user safety and respond to use issues (e.g., user conflicts, resource concerns, etc.). The BLM will conduct routine, highly visible patrols by BLM staff to maintain an effective authoritative presence in the field. Personnel from partner agencies, such as the Utah Division of Wildlife Resources (UDWR), Emery and Sevier County Sheriff's Departments, and the Utah Highway Patrol may also supplement enforcement operations. The BLM will prioritize patrols:

- In areas with public health and safety concern
- At entrances to and boundaries of areas of national significance (e.g., national monuments, designated wilderness areas, etc.)
- At areas or times of high recreational use or where it may enhance visitor experience and convenience (e.g., recreation sites, trailheads, backcountry byways, etc.)
- Where route use limitations exist (e.g., limited to a vehicle type, route closed to public motorized use, etc.)
- Where users may become confused about the direction, terminus, designation, or alignment of the route
- Where resource conflicts may occur (e.g., routes through special status species habitats)
- Routes identified for monitoring (see Table Appx - 27 in Section H.6 below)

Regulations for enforcement are described in 43 CFR Subpart 8340 (GPO 2016), 43 CFR Subpart 8360 (GPO 2009a), and 43 CFR § 9268.3 (GPO 2001). They may be supplemented as deemed necessary by Supplementary Rules, which may be established pursuant 43 CFR § 8360 under a separate action to implement use restrictions identified in RMP decisions. Policy for enforcement is found in Travel and Transportation Management Handbook (BLM 2012a).

H.6 MONITORING

The objective of monitoring is to ensure that desired outcomes and conditions are achieved, and to document how the decision affects resources over time. The BLM will conduct ad-hoc and strategic monitoring using staff, volunteers, users, and partners as time and funding permit. Ad-hoc monitoring occurs when BLM staff or the public reporting any observed issues to the appropriate resource staff (Field Manager, Assistant Field Manager, Outdoor Recreation Planner, Field Technician, etc.). Strategic monitoring occurs when BLM-staff or partners checks implementation of requirements from the TMP (for example, from the San Rafael Swell Baseline Monitoring Report, Biological Opinion, HPTP, or specific route evaluation reports). When monitoring identifies issues, the BLM will address the issues identified at that time. The monitoring program will be used to determine:

- If resource protection and resource use objectives are being met.
- If the plan addresses visitor satisfaction, use patterns, use volumes, and other needs.
- The condition of the routes and compliance with route designations and use restrictions.

TMP monitoring priorities include:

- Areas with public health and safety concern
- Entrances to and boundaries of areas of national significance (e.g., national monuments, designated wilderness areas, etc.)
- Areas or times of high recreational use or where it may enhance visitor experience and convenience (e.g., recreation sites, trailheads, backcountry byways, etc.)
- Where route use limitations exist (e.g., limited to a vehicle type, route closed to public motorized use, etc.)
- Where resource conflicts may occur (e.g., routes through special status species habitats)
- OHV-Open or OHV-Limited routes that include “with Management” requirements
- Closed and reclaimed routes

TMP long term monitoring protocol includes:

- Annual monitoring by BLM staff for 5 years.
- Preferred monitoring time of early summer after peak use in the Swell.
- Monitoring the routes with required monitoring (see Table Appx - 27) plus a minimum of 10 additional routes a year comprising at least one primitive route, one UTV route, and one class 5 route.
- Data collection similar to the baseline monitoring effort, to be housed at the PFO.

Table Appx - 27: Route-Specific Monitoring

Route Number	Monitoring Description	Time Length	Responsible Party
SS1063	Route Proliferation	5 years	BLM
SS1069	Route Proliferation	5 years	BLM
SS1072	Adverse effects to wetland and spring system	5 years	BLM

Route Number	Monitoring Description	Time Length	Responsible Party
SS1076	Route Proliferation; fence maintenance	5 years	BLM
SS1077	Route Proliferation	5 years	BLM
SS2026	Adverse effects to resources	5 years	BLM
SS2176	Adverse effects to resources; Fence maintenance	5 years	BLM
SS3085	Soil Erosion	5 years	BLM
SS3278	Adverse effects to resources	5 years	BLM
SS4065	Adverse effects to resources	5 years	BLM

Regulations for TMP Monitoring is contained in 43 CFR § 8342.3 (GPO 2016). Policy for Travel Management Monitoring is contained in BLM's Travel and Transportation Management Manual (BLM 2016b), and Appendix R-2 of the 2008 Price RMP and pages 120 and 127 in the 2008 Richfield RMP.

Table Appx - 28: 2008 RMP Travel Management-Related Monitoring Methodologies

2008 Price RMP	
OHV	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. Various methods of monitoring may be employed including: aerial monitoring, ground patrol, "citizen watch," and appropriate methods of remote surveillance such as traffic counters, etc. Evaluate trail impacts on resources through visual inspections, photo at problem areas (erosion, users short cutting, etc.). Use trail traffic counters where appropriate to determine visitor use levels. Involve volunteers to assist in trail monitoring where appropriate and feasible. Periodically check that routes meet the objectives set forth in the RMP to ensure resource conditions such as water quality, wildlife/fish habitat, or recreational values are maintained and available to communities and users, and ensure resource values are not compromised. Route or area closures will be regularly monitored for compliance. Cooperation with other agencies in travel management and OHV use monitoring will continue to be emphasized, and improved wherever possible.
Transportation	Periodically check that roads meet the objectives set forth in the RMP to ensure resource conditions are maintained and available to communities and users, and ensure resource values are not compromised. Update the Transportation Plan as monitoring needs are found.

2008 Richfield RMP	
Travel Management	Travel management and OHV use monitoring within the planning area will focus on compliance with specific route and area designations and restrictions. Staff will identify specific actions, including timeframes, methods and anticipated resources needs following the established protocols for Comprehensive Travel and Transportation Management. Various methods of monitoring may be employed including: ground patrol, traffic counters, aerial monitoring, photos of problem areas (erosion, users short cutting, etc.) and "citizen watch". Involve volunteers to assist in monitoring where appropriate and feasible. Cooperation with other agencies in travel management and OHV use monitoring will continue to be emphasized, and improved wherever possible. Primary emphasis will be on designated routes (ways) within WSAs and BLM natural areas, and those routes or areas having the highest potential for user conflicts or adverse impacts to resources. Monitoring will assess whether routes meet the objectives set forth in the RMP and to ensure resource conditions such as water quality, wildlife or recreational values are maintained, and resource values are not compromised. Route or area closures will be regularly monitored for compliance. The monitoring data will be used to assess the effectiveness of the RMP and the associated implementation actions. Modifications to the RMP and route designations may be considered if monitoring indicates that goals and objectives are not being met. Monitoring actions will be reported through the BLM annual workload measure accomplishments and in the Annual Program Summary and Planning Update.
Recreation	Monitoring of recreation resources will continue to occur throughout the planning area. Levels and intensities of monitoring will vary depending on the sensitivity of the resource or area and the scope of the proposed management activities. Monitoring baseline data will be used to develop Limits of Change determinations, manage visitor use, plans and projects to reduce visitor impacts, and to assess whether the desired outcomes of the RMP are being met. Priority will be placed on developed recreation sites and Special Recreation Management Areas (SRMAs) to develop baseline data to be used in SRMA Activity Plans. Periodic patrols of popular undeveloped use areas will be conducted where recreation use is concentrated. Special Recreation Permits will be monitored for compliance with terms, conditions and special stipulations and post-use requirements. Condition assessments of developed recreation sites will be conducted to determine maintenance requirements and ensure public health and safety. Monitoring will emphasize signing, visitor use, identification of areas where there may be problems with compliance with rules and regulations resulting in user conflicts or resource damage, and determining current impacts, levels and patterns of recreational use. Any appropriate methodology will be used including visitor surveys, traffic counters, developed recreation site visitor data, documentation of user conflicts and photo documentation of the changes in resource conditions over time. Visitor use will be reported in RMIS. Monitoring actions will be reported through the BLM annual workload measure accomplishments and in the Annual Program Summary and Planning Update.

H.7 ROUTE RECLAMATION

The objective of reclamation is to discontinue use of a route and allow it to return to a natural state. An OHV-Closed designation does not automatically mean that a route will be actively reclaimed because, for example, the route may still be needed by authorized users or for authorized uses. The TMP does not identify any route-specific reclamation strategies. Route-specific reclamation strategies route will be identified in the future by BLM resource specialists consistent with BLM policies and may require further site-specific NEPA analysis, as appropriate. When reclaiming routes, the BLM will use the minimum necessary reclamation technique to achieve reclamation. BLM will inform Emery and/or Sevier counties before any County-classified roads are reclaimed.

Reclamation techniques include:

- Natural reclamation, where the route would revegetation naturally. This level of reclamation may also include installation of "route closed" or other information signs. In some cases, mechanical tools such as shovels, rakes, and other hand tools may be employed to obliterate tracks, embankments, ruts, water bars and ditches.
- Disguising routes with natural materials, sometimes referred to as "vertical mulching", where the BLM would place rocks, dead wood and plants in light-of-sight along the route in a natural-looking arrangement). In some cases, mechanical tools such as shovels, rakes, and other hand tools may be employed to obliterate tracks, embankments, ruts, water bars and ditches.
- Barrier installation where the BLM would install natural or human-made barriers such as large boulders or fences with gates to physically prevent unauthorized use. Where possible and practical, these measures may be removed when routes are reclaimed or fully disguised.
- Ripping and reseeding routes, where the BLM mechanically breaks up the route and reseeds it using heavy equipment (e.g., excavators, bulldozers, or harrow or seed drills. Herbicides may also be used for revegetation. Reseeding within wilderness should use predominately native seed mixes. New surface disturbance outside the route footprint is not authorized through the TMP.

Reclamation effort priorities include:

- Routes that pose a public safety hazard
- Routes leading into a designated wilderness area or a BLM natural area
- 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 any other resources requiring special management or protection.

Policy for reclamation is contained in BLM Utah's Green River District reclamation guidelines.

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APPENDIX I GLOSSARY

Access: The opportunity to approach, enter, and/or cross public lands. (BLM 2016b)

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. (43 CFR 46.30 Definitions)

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. (BLM 2016b)

All-terrain vehicle (ATV): A motorized, 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. (BLM 2012a)

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.…" (BLM 2008a)

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. (BLM 2016b)

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. (BLM 2016b)

Categorical Exclusion: A category of actions that the agency has determined, in its agency NEPA procedures, normally do not have a significant effect on the human environment (40 CFR 1508.1). A categorical exclusion is a form of NEPA compliance, without the analysis that occurs in an EA or an EIS. It is not an exemption from the NEPA (BLM 2008a).

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. (https://www.govinfo.gov/help/cfr)

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 tribal, Federal, State, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency. (BLM 2008a)

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. (16 USC 1532(5))

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 (NRHP). (BLM 2004a)

Cultural resource inventory classes:

- 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.
- 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.
- 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. (BLM 2004a)

Cumulative effects: According to the Code of Federal Regulations, 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" (40 CFR 1508.7). 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.

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. (BLM 2008a)

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. The process for decommissioning routes may include site-specific reclamation actions, natural revegetation, or a toolset to complete reclamation should opportunities arise. Reclamation actions must be consistent with the goals and objectives for the area in which they occur. Reclamation can be passive or active. 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 2016b)

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 OHV activities on routes. (BLM 2016b)

Direct effect: Caused by the action and occur at the same time and place (40 CFR 1508.8(a)).

Easement: An authorization for a non-possessory, non-exclusive interest in lands which specifies the rights of the holder and the obligation of the BLM to use and manage the lands in a manner consistent with the terms of the easement. (43 CFR 2920.05 Definitions)

E-bike: 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:

- 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.
- 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.
- 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. (85 FR 69223, Nov. 2, 2020)

Effect: 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 CEQ uses both the terms “effect” and “impact” in the NEPA regulations; these terms are synonymous in the NEPA context. As a noun, other synonyms include consequence, result, and outcome. Effects can be both beneficial and detrimental, and may be direct, indirect, or cumulative. (BLM 2008a)

Eligible cultural resource: Cultural resources that are listed or recommended eligible for inclusion on the National Register of Historic Places (NRHP); this includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet NRHP listing criteria (36 CFR 800.2(e)). A district, site, building, structure, object, traditional cultural property, historic landscape, or discrete group of thematically related properties, that represents America’s history, architecture, archaeology, engineering, or culture may be eligible for the NRHP (BLM 2004b). To be judged eligible, a property must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and must meet at least one of the following criteria:

1. Property is associated with an event or events that have made a significant contribution to the broad patterns of America’s history.
2. Property is associated with the lives of persons significant in our past.
3. Property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction.
4. Property has yielded or may be likely to yield information important in prehistory or history.

Endangered species: Any species which is in danger of extinction throughout all or a significant portion of its range. (16 USC 1532 Definition)

Endangered Species Act (ESA): The Endangered Species Act establishes protections for fish, wildlife, and plants that are listed as Threatened or Endangered; provides for adding species to and removing them from the list of Threatened and Endangered species, and for preparing and implementing plans for their recovery; provides for interagency cooperation to avoid take of listed species and for issuing permits for otherwise prohibited activities; provides for cooperation with States, including authorization of financial assistance; and implements the provisions of the Convention on International Trade in Endangered Species of Wild Flora and Fauna. (https://www.fws.gov/law/endangered-species-act)

Environmental assessment (EA): A concise public document that provides sufficient evidence and analysis for determining the significance of effects from a proposed action and that serves as a basis for reasoned choice. Based upon the EA analysis, either an EIS or a FONSI will be prepared. (BLM 2008a)

Environmental Impact Statement: Federal agencies prepare an EIS if a proposed federal action will have a significant environmental impact (BLM 2008a). The regulatory requirements for an EIS are more detailed and rigorous than the requirements for an EA.

Erosion: Detachment and movement of soil or rock fragments by water, wind, ice, gravity; the land surface worn away by running water, wind, ice, or other geological agents, including such processes as gravitational creep. (BLM 2020)

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). (BLM 2016b)

Facility Asset Management System (FAMS): The BLM's official database for the management of transportation system assets and facilities. (BLM 2016b)

Finding of No Significant Impact: A finding that explains that an action will not have a significant effect on the environment and, therefore, an EIS will not be required. (BLM 2008a)

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). (BLM 2016b)

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

Historic property: Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. 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 NRHP criteria. (BLM 2004a)

Impact: See "effect."

Impassable: Roads intended for full-size vehicle passage that are otherwise impassable as a result of road deterioration or vegetation overgrowth; project-level road maintenance is required to make these roads passable. Road deterioration or vegetation overgrowth may be a result of neglect, irregular maintenance, or management decisions. (BLM 2014a)

Implementation decisions: Decisions that take action to implement land use planning; generally appealable to Interior Board of Land Appeals under 43 CFR 4.410 (BLM 2000). 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. (BLM 2000).

Indirect effect: Caused by the action and later in time or farther removed in distance, but still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on water and air and other natural systems, including ecosystems. (40 CFR 1508.8(b))

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.

Invasive plants: Plant species that are typically not found on the ecological site or should only be in the trace or minor categories under the natural disturbance regime and have the potential to become a dominant or codominant species on the site if their establishment and growth are not actively controlled by natural disturbances or management interventions. (BLM 2020)

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 1600, regardless of the scale at which the decisions were developed (BLM 2000). 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. (BLM 2012a, BLM 2016b)

Linear feature: Linear features represent the broadest category of physical disturbance (planned and unplanned) on BLM land. A linear feature is 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. (BLM 2012a, BLM 2016b)

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. (BLM 2016b)

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 2015a) and Appendix A of BLM's 9115 Primitive Roads Manual (BLM 2012d)). 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. (BLM 2008a)

Mitigation: Measures that could reduce or avoid adverse impacts. Mitigation measures have not been incorporated into the proposed action or an alternative (BLM 2008a). Mitigation can include: (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 whether decisions were implemented as designed, their effectiveness in achieving desired outcomes, and the effectiveness of mitigation measures. Monitoring can also determine whether the impact analysis was accurate. (BLM 2008a)

Motorized vehicles: Vehicles propelled by motors or engines, such as cars, trucks, off-highway vehicles, motorcycles, snowmobiles, and boats. (BLM 2016b)

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 conform 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. (43 USC 1702(c))

Native vegetation: Species that historically occurred or currently occur in a particular ecosystem and were not introduced (BLM 2008b)

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. (BLM 2016b)

Noxious weed: Any plant designated by a federal, state, or county government to be injurious to public health, agriculture, recreation, wildlife, or any public or private property. (BLM 2020)

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. (BLM 2000)

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)). OHV is synonymous with off-road vehicle. (BLM 2016b)

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 2016b):

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: Implementation decisions that govern only OHV (43 CFR 8340.0-5(a)) activities on routes. The route designation is one of several decisions required to govern travel and transportation comprehensively. 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). (BLM 2016b)

- **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.

Primitive road: A linear route managed for use by four-wheel drive or high-clearance vehicles. These routes do not customarily meet any BLM road design standards. Unless specifically prohibited, primitive roads can also include other uses such as hiking, biking, and horseback riding. (BLM 2016b)

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. (BLM 2016b)

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 (ROD): Decision document associated with an EIS (BLM 2008a).

Recreation Management Information System (RMIS): 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. (BLM 2016b)

Recreation Management Zone (RMZ): Subunits within a SRMA managed for distinctly different recreation products. Recreation products are comprised of recreation opportunities, the natural resource and community settings within which they occur, and the administrative and service environment created by all affecting recreation-tourism providers, within which recreation participation occurs. (BLM 2005)

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 2015a) and Appendix A of BLM's 9115 Primitive Roads Manual (BLM 2012d)). 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): (Also known as Land Use Plan or Management Framework Plan). A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of the Federal Land Policy and Management Act of 1976, as amended, P.L. 94-579, 90 Stat. 2743; an assimilation of land use plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. (BLM 2008a)

Restoration: The process of assisting the recovery of a resource (including its values, services, and/or functions) that has been degraded, damaged, or destroyed to the condition that would have existed if the resource had not been degraded, damaged, or destroyed. (BLM 2021a)

Right-of-way (ROW): Authorization of rights and privileges for a specific use of the land for a specified period of time appropriate for the life of the project. The BLM has discretion to grant a ROW if doing so is in the public interest. (https://www.blm.gov/programs/lands-and-realty/rights-of-way)

Rilling: Shallow channeling from water that creates small, intermittent watercourses with steep sides, usually only several centimeters deep. Rills generally are linear erosion features running parallel to a slope. (BLM 2020)

Riparian area: A specialized form of wetland restricted to areas with characteristic vegetation along, adjacent to, or contiguous with perennially and intermittently flowing stream, lake, spring, and reservoir shore areas. Characteristic vegetation may range from hydrophilic plants such as pondweed through more terrestrial forms such as sycamores, cottonwoods, conifers, and willows. This habitat is transitional between true bottomland wetlands and upland terrestrial habitats, and while associated with water courses, may extend inland for considerable distances. (BLM 1991)

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. (BLM 2016b)

Route: Generic description for a component of the transportation system or travel network. (BLM 2016b)

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 data for maps (may also include collection of point data and photos) to inform the travel planning effort (BLM 2016b). Data may be collected in the field with GPS units or drawn on a computer screen from aerial imagery. The **original route inventory as used in this EA** refers to the first inventory created using a combination of previous travel plans, aerial photography, BLM and County GIS data, maps, and ground-truthing (i.e., driving routes on the ground). The **evaluation route inventory** refers to the routes remaining after removal of the non-route linear disturbances such as game trails, cattle trails, fence-lines, reclaimed historic routes (routes on old maps or aerial imagery that no longer exist on the ground), and seismic exploration scars. The **public comment route inventory** refers to the routes remaining after removal of the 375 miles of route that had no public purpose or need.

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 EIS 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. (BLM 2008a)

Sensitive Species: Species that require special management consideration to avoid potential future listing under the ESA and that have been identified in accordance with procedures set forth in BLM Manual 6840 – Special Status Species Management. (BLM 2008c)

Solitude: The state of being alone or remote from others; 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. (BLM 2021b)

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. (BLM 2014b)

Special recreation permits (SRPs): SRPs are issued to authorize specified and often time-restricted recreational uses of the public lands and related waters. The BLM issues SRPs to manage visitor use; to protect natural and cultural resources; to achieve the goals and objectives of Field Office recreation program as outlined in a land use plan; and to authorize specific types of recreational activities. There are five types of activities for which SRPs are required: commercial use, competitive use, vending, special area use, and organized group activity and event use. (BLM 2007)

Special status species: Collectively, federally listed or proposed and Bureau sensitive species, which include both Federal candidate species and delisted species within 5 years of delisting. (BLM 2008c)

State Historic Preservation Officer (SHPO): The State historic preservation officer (SHPO) reflects the interests of the State and its citizens in the preservation of their cultural heritage. In accordance with section 101(b)(3) of the National Historic Preservation Act, the SHPO advises and assists Federal agencies in carrying out their section 106 responsibilities and cooperates with such agencies, local governments and organizations and individuals to ensure that historic properties are taking into consideration at all levels of planning and development. (36 CFR 800.2)

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 2022c).

Threatened species: Any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range. (16 USC 1532 Definitions)

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. (BLM 2004a)

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. (BLM 2016b)

Travel Management Area (TMA): An administrative planning unit used to provide a strategic approach to inventory, planning, management, monitoring, and administration of the travel network, transportation system, and OHV use on public lands. TMAs can be used to separate areas with a different travel management focus from the larger planning area for a specific reason, such as the area's complexity or level of controversy, the need for a higher level of public involvement, consideration of special resource characteristics, or manageability of the area. A TMA's boundary may be altered as needed to reflect changes in priority, additional available resources, or any other change in circumstance. (BLM 2016b)

Travel Management Plan (TMP): A document that describes decisions related to the selection and management of a travel network and transportation system. (BLM 2016b)

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. (BLM 2016b)

Unevaluated (to the Natural Register): A cultural site to which the NRHP eligibility criteria have not been applied. (BLM 2004a)

Utility Terrain Vehicle (UTV): Any recreational motor vehicle other than an ATV, motorbike or snowmobile 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 (2,000) pounds, or having a wheelbase of ninety-four (94) inches or less. Utility type vehicle does not include vehicles specially designed to carry a person with disabilities. (BLM 2012a)

Visual Resource Inventory (VRI): The visual resource inventory process provides BLM managers with a means for determining visual values. The inventory consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes. These inventory classes represent the relative value of the visual resources. Classes I and II being the most valued, Class III representing a moderate value, and Class IV being of least value. The inventory classes provide the basis for considering visual values in the RMP process. (BLM 1986)

Visual Resource Management (VRM): The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives. (BLM 1984)

Visual resources: The visible physical features on a landscape, (topography, water, vegetation, animals, structures, and other features) that comprise the scenery of the area. (BLM 1984)

Wetlands: Areas that have a predominance of hydric soils and that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions. Marshes, shallows, swamps, muskegs, bogs, and wet meadows are examples of wetlands. (BLM 1991)

Wilderness characteristics: These attributes include the area's size, its apparent naturalness, and outstanding opportunities for solitude or a primitive and unconfined type of recreation. They may also include supplemental values. Lands with wilderness characteristics are those lands that have been inventoried and determined by the BLM to contain wilderness characteristics as defined in section 2(c) of the Wilderness Act. (BLM 2021b)

Wilderness Inventory Road: Routes which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. (BLM 2021b)

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APPENDIX J REFERENCES

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