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Bureau of Land Management**

**San Rafael Desert
Travel Management Plan Environmental Assessment
DOI-BLM-UT-G020-2018-0004-EA**

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1 INTRODUCTION/PURPOSE AND NEED

1.1 Introduction

In October 2008, the Bureau of Land Management (BLM) completed a Record of Decision (ROD) for the Approved Price Field Office (PFO) Resource Management Plan (RMP). Under the 2008 RMP, BLM designated zero acres of the San Rafael Desert Travel Management Area (TMA) open to cross-country off-highway vehicle¹ (OHV) use, approximately 20,216 acres closed to OHV use, and limited OHV use on approximately 357,392 acres to designated routes.

In addition to providing RMP-level goals, objectives, and management decisions for travel and transportation planning, the 2008 RMP ROD adopted an implementation-level travel management plan (TMP) that includes route-specific designation decisions within PFO's planning jurisdiction, including within the San Rafael Desert TMA. As relevant to this San Rafael Desert TMA planning effort, the 2008 RMP and associated TMP:

- carry forward and incorporate the route-specific designations made in the 2003 San Rafael Route Designation Plan (SRRDP)
- incorporate as available for motorized vehicle use, but do not designate as part of the OHV route network, "BLM System/County Roads" (see RMP Map R-18)
- reference "Other Routes" without identifying the type of uses authorized on those routes
- change an OHV area designation made in the 1991 San Rafael RMP covering approximately 55% of the San Rafael Desert TMA from open to OHV cross-country travel to limited to designated routes
- defer route-specific designations of existing routes within the area formerly designated open to cross-country travel to future activity-level planning

In December 2008, the 2008 RMP and TMP were challenged in federal court. The litigation, *Southern Utah Wilderness Alliance, et al. v. U.S. Department of the Interior, et al.*, Case No. 2:12-cv-257 (D. Utah), was resolved in a settlement agreement finalized in 2017, hereinafter referred to as the 2017 Settlement Agreement.² In the 2017 Settlement Agreement, BLM agreed to create new TMPs for TMAs throughout Utah, including for the San Rafael Desert TMA.

Although the 2008 RMP and TMP were subject to litigation for nearly 10 years following adoption, the plans remained in effect. Over time, incomplete implementation of the 2008 RMP TMP has resulted in a challenging management situation and has contributed to user conflicts, natural resource concerns, user confusion, and public safety challenges due to navigability

¹ An off-highway vehicle (OHV) is 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)).

²The 2017 Settlement Agreement can be accessed online at <https://www.doi.gov/sites/doi.gov/files/agreements-settlements/document/suwa-ex-1-settlement-agreement-101718.pdf>

issues. BLM began work to resolve these issues starting with a comprehensive, protocol-based route inventory in 2011.

In this travel planning effort, BLM seeks to develop and adopt a TMP for the San Rafael Desert TMA that is based on comprehensive, current data and which is predictable, clear, implementable, and consistent with all applicable law, regulations, and policies. As discussed in Section 2.1, the BLM informed this travel planning effort by compiling a comprehensive inventory of all existing routes within the TMA, assembling an interdisciplinary team (IDT) of resource specialists to conduct a detailed evaluation of inventoried routes in accordance with BLM policy and the 2017 Settlement Agreement, and gathering and incorporating route- and designation-related input from the public and cooperating agencies. The TMP would ultimately designate a network of routes throughout the TMA as OHV-open, OHV-closed, or OHV-limited, and incorporate implementation actions (signage, reclamation, etc.) to ensure that the route designations are made clear to users on the ground.

1.2 Decision to Be Made

This EA analyzes alternatives for OHV route designations on approximately 1,180.8 miles of existing inventoried and evaluated routes in the San Rafael Desert TMA, encompassing an area of approximately 377,609 acres within PFO. The route networks proposed in Alternatives B-D analyzed in this EA were defined and informed by an interdisciplinary and inter-agency review of the route inventories, each evaluated route's purpose and need, and resources present on or near each evaluated route.

Route designations specific to nonmotorized uses are outside the scope of this EA and planning effort. OHV route designations in the final TMP will not apply to authorized, administrative, or official use of routes within the TMA. This EA and planning effort do not consider the construction of any new routes or new surface disturbance. The final TMP will not designate any OHV routes on private lands or on any lands managed by State or Federal agencies other than BLM. Routes over non-BLM lands may be displayed on maps for connectivity and navigation purposes. This travel planning effort and resulting TMP are not intended to provide evidence, bearing on, or address the validity of any Revised Statute 2477 (R.S. 2477) assertions. R.S. 2477 rights are determined through a process that is entirely independent of the BLM's planning process. Consequently, this TMP process does not consider any R.S. 2477-related evidence. The BLM bases travel management planning on purpose and need related to resource uses and associated access to public lands and resources. At such time as a decision is made on R.S. 2477 assertions, outside of any planning process, the BLM will adjust its travel routes accordingly (BLM Manual 1626).

The selected route network, should the Authorized Officer reach a Finding of No Significant Impact (FONSI), will become the San Rafael Desert TMP. The designated travel route network would be implemented, operated, monitored, and maintained according to the final San Rafael Desert TMP Implementation Guide (TMP Implementation Guide). The selected travel network designations would supersede all previous OHV route designations made in the 2008 RMP TMP.

1.3 Purpose and Need

The purpose of this travel planning project is to clearly and comprehensively designate inventoried and evaluated routes within the TMA as open, limited, or closed to OHV use, and to adopt a TMP Implementation Plan, thus creating an OHV travel network that provides predictability and clarity for users, reduces user conflicts, protects both natural and cultural resources, meets access needs, increases public safety, and addresses enforceability issues. As detailed in Section 1.1, the 2008 RMP TMP resulted in confusion among the public about which routes are available for OHV use throughout the San Rafael Desert TMA. The designation of a comprehensive OHV route network to supersede that which is designated in the 2008 RMP and TMP would help alleviate confusion and provide much needed clarity regarding OHV use and access on public lands within the TMA.

The need for the project is driven by the BLM’s obligation to comply with the 2017 Settlement Agreement and the decisions and objectives reflected in the 2008 RMP. In the 2017 Settlement Agreement, the BLM agreed, among other things, to develop a new TMP for the San Rafael Desert TMA based on a comprehensive inventory and evaluation of routes considered for designation within the TMA. Moreover, the development of this TMP responds to the need of the BLM to engage in travel planning and management consistent with BLM policy and to comply with Presidential Executive Orders 11644 and 11989 and the OHV designation criteria at 43 CFR 8342.1 which direct the BLM to manage and designate motorized vehicle use on public lands in a manner that protects the natural resources of public lands while minimizing conflicts among the various users of those lands.

1.4 TMA Boundaries

Maps showing the San Rafael Desert TMA, inventoried routes evaluated and considered for designation, and proposed alternatives can be found in Appendix O. The TMA is located in southeastern Emery County in eastern Utah, just south of the town of Green River. The TMA borders align with Interstate 70 (I-70) to the north, State Highway 24 to the west, the Green River to the east, and the northern border of Wayne County to the south. Table 1.1 (below) shows the surface ownership/jurisdiction in the TMA. While the BLM only manages travel on BLM-managed public lands, it does consider access to adjacent lands and effects to resources outside of its jurisdiction during travel planning.

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

Jurisdiction	BLM	State	Private Lands	Total
Acres	377,609	51,907	10,219	439,735
% of TMA	86%	12%	2%	100%

1.5 Conformance with BLM Management Plans, Policies, and Other Legal Obligations

The proposed network alternatives were developed following IDT evaluations of existing routes identified during the route inventory and determined to be appropriate for designation. Criteria

applied to routes during the evaluation process were derived, in part, from the 2008 RMP, to ensure land use plan conformance. Table 1.2 provides more details on the 2008 RMP decisions to which the route network action alternatives conform.

Table 1.2: Key RMP Travel-Related Management Decisions and Goals (BLM 2008c)

TRV-3	Allow for reasonable access to non-BLM-managed lands within the PFO.
TRV-4	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.
TRV-5	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.
OHV-1	In preparing RMP designations and implementation-level travel management plans, the BLM will follow policy and regulation authority found at: 43 C.F.R. Part 8340; 43 C.F.R. Subpart 8364; and 43 C.F.R. Subpart 9268.
OHV-2	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.
OHV-3	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.
OHV-5	OHV recreation will be managed according to the following open, closed, and limited to designated route categories (Map R-17): <ul style="list-style-type: none"> • 0 acres open • 557,000 acres closed • 1,922,000 acres limited to designated route
OHV-7	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 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.
OHV-9	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.
TRV Goal	Continue to support Carbon and Emery counties and the State of Utah in providing a network of roads across public lands.
OHV/ REC Goals	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 proposed route network alternatives were also designed in accord with the requirements and guidance in Executive Orders 11644 and 11989, 43 CFR 8342.1, Manual 1626, and Handbook 8342. Table 1.3 provides the designation criteria in 43 CFR § 8342.1. The BLM’s IDT consideration and application of the designation criteria to each route considered for designation in the proposed alternative networks are further detailed in Chapter 2 and documented in Appendix N.

Table 1.3: 43 CFR § 8342.1 Designation Criteria

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

(c)	Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
(d)	Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

Additionally, the BLM’s development of the proposed network alternatives conforms with the procedural and documentation requirements of the 2017 Settlement Agreement.

To meet its National Historic Preservation Act (NHPA) section 106 consultation requirements, the BLM considered adverse effects to historic properties in accordance with the 2018 *Programmatic Agreement Among the Advisory Council on Historic Preservation, The Bureau of Land Management-Utah and the Utah State Historic Preservation Office Regarding National Historic Preservation Act Responsibilities for Travel and Transportation Management Undertakings* (Travel PA).

1.6 Scoping and Issue Identification

1.6.1 Overview

Internal (BLM and Cooperators) and external (public) scoping identified route-related issues that could affect the natural and human environment within the TMA. Key issues—those issues necessary to make a reasoned choice between alternatives or to determine the significance of impacts—were brought forward for detailed analysis in this EA and are discussed below. The initial round of scoping occurred in January-February 2015, involved two public meetings (one in Castle Dale and one in Green River), and resulted in 60 comment letters. Additional scoping occurred in June-July 2019 and resulted in 60 comment letters. Chapter 4 and Appendix D include more details on scoping, including an overview of the process and a complete issue list. The issues listed in Appendix D were developed based on public comment review and interviews with BLM resource specialists.

1.6.2 Issues and Resource/Use Topics Carried Forward for Detailed Analysis

In developing a TMP, decision makers and the public need to understand the impacts that each of the alternative travel networks would have on specific resources. To this end, a BLM IDT of resource specialists identified resource/use topic(s) that could potentially be impacted. The key issues and their associated resource/use topics are presented below in Table 1.4. The resource/use topics help organize and refine discussions of the affected environment and environmental effects in Chapter 3.

Table 1.4: Key Issues and Related Resource/Use Topics

Key Issue	Resource/Use Topics (those resources, resource uses, and social and economic values potentially impacted by an alternative travel network)
1. Minimizing the travel network’s damage to sensitive resources (application and consideration of the 43 CFR 8342.1 designation criteria)	<ul style="list-style-type: none"> • Cultural resources • Soils • Water quality, riparian areas, wetlands • Fish • Special status plants • Native vegetation and invasive plants/noxious weeds • Special status animals • General wildlife and migratory birds • Lands with wilderness characteristics (LWCs) • Visual resources
2. Providing for recreation opportunities and experiences while reducing conflicts between recreation users and authorized users	<ul style="list-style-type: none"> • Recreation • Livestock grazing • Minerals

1.6.3 Resource/Use Topics Identified, but Eliminated from Detailed Analysis

Some issues raised during scoping are beyond the scope of this project, are not substantive, or are not helpful in making reasoned choices among alternatives. Resource/use topics that were identified but eliminated from detailed analysis in the EA can be found in the IDT checklist in Appendix E.

1.7 Changes Since Public Review of the Draft EA

Alternative A has been refined to more clearly present an accurate description of the current conditions and OHV use within the TMA (see Section 2.3). An Alternative K reflecting the 2008 RMP TMP designations was added to the list of alternatives considered but not in detail.

Comments received during the public comment period (December 13, 2019-January 12, 2020) on the draft EA were considered and incorporated into the Final EA, as appropriate. Substantive public comments and the resulting edits are summarized in Appendix P, Public Comments and BLM Responses.

The Draft EA did not include the Class III cultural resources survey. This Final EA has been updated with the completed Class III survey information and information on potential adverse effects to historic properties.

Consultation with the U.S. Fish and Wildlife Service (USFWS) resulted in the addition of two Endangered plant species for analysis because modeled habitat exists within the boundaries of the TMA: Barneby reed-mustard (*Schoenocrambe barnebyi*) and San Rafael cactus (*Pediocactus despainii*). No occurrences of either species have been recorded within the TMA. Consultation with the USFWS also resulted in an agreement on conservation measures that have been included in the TMP Implementation Guide.

During the review of the GIS analysis of potential effects to Ute ladies'-tresses plants and habitat, the BLM discovered a map projection error that, when corrected, increased the miles of routes within modeled habitat and its 300-foot buffer, and simultaneously decreased the acreages. Further coordination with the USFWS determined that the addition of 1.7 miles of routes within the 300-foot buffer is not expected to change the impacts to the species because the additional miles of routes are outside the floodplain and in many cases separated by substantial elevation difference and there was a reduction in total acres potentially impacted.

2 ALTERNATIVES

2.1 Alternative Development Methodology

2.1.1 Overview

From 2011-2015, in preparation for this implementation-level travel planning effort, the BLM conducted a comprehensive accounting of existing linear features occurring within the San Rafael Desert TMA. The resulting collection of identified linear features formed the initial route baseline, as required by BLM policy and the 2017 Settlement Agreement, for planning purposes for this TMP. After the initial baseline inventory was completed, the BLM conducted a preliminary analysis and refined the initial baseline inventory by removing certain identified linear disturbances—such as cattle trails, fence-lines, and seismic exploration scars—because they were inappropriate for consideration or designation in a travel planning effort. It was this, the refined existing route inventory, that BLM's IDT considered during its route evaluation process and for designation as OHV-open, OHV-limited, or OHV-closed in the route network alternatives. Hereinafter, this EA will refer to this collection of inventoried, refined, and evaluated routes being considered for designation as “evaluated routes” or the “evaluated route network.”

The BLM IDT's development of alternative route networks for analysis in this EA was a multi-phased effort informed by scoping, inventory, evaluation, the 2017 Settlement Agreement, and consideration and application of the designation criteria at 43 CFR 8342.1. The travel networks reflected in Alternatives B-D were developed as themes and take into account goals and objectives in the 2008 RMP along with issues identified in the 2017 Settlement Agreement and during scoping.

The following sections describe how the BLM first inventoried, then evaluated, and then proposed OHV designations to form the route networks reflected in the alternatives. These background sections are then followed by a description of the various alternatives developed by the IDT.

2.1.2 Route Inventory

The BLM compiled the collection of evaluated routes that were considered for designation as a part of this travel planning effort pursuant to the following steps:

Step 1: Initial Baseline Inventory and Data collection – Between 2011 and 2015, the BLM and its contractors used a combination of remotely sensed data (e.g., aerial photography), existing GIS and other map data, and a protocol-based on-the-ground inventory process to identify all

existing linear features within the TMA. The term linear feature refers to 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 (BLM MS 1626). The initial baseline inventory may capture other features that appear to an observer to be a linear feature.

Step 2: Preliminary analysis and inventory refinement – The BLM and contractors conducted a preliminary evaluation of each linear feature identified during the initial baseline inventory and data collection process to identify and remove linear features such as game trails, cattle trails, fence-lines, remnants of past motor vehicle usage, and seismic exploration scars because they were inappropriate for consideration in a travel planning effort. In total, 1,180.8 miles of routes were included in the set of linear features carried forward for route evaluation. See Appendix O’s map “All Routes Considered for Designation.”

Step 3: Prepare for route evaluation – The IDT compiled and collected additional data (such as cultural resource inventory and soils data) needed to make informed decisions for each linear feature carried forward for evaluation.

Note: On March 12, 2019, Public Law 116-9, the John D. Dingell Act, established the Labyrinth Canyon Wilderness Area, some of which overlapped the TMA. Inventoried routes within this designated Wilderness 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. BLM Manual 6340, specifies that permanent roads within designated wilderness must be associated with a valid existing right (as noted in 1.6.B.3.b), or explicitly identified in the legislation designating that particular wilderness.

2.1.3 Route Evaluation

In 2015, the BLM IDT and cooperating agencies began evaluating the 1,180.8 miles of routes remaining in the refined baseline inventory. The IDT rigorously reviewed and evaluated every route in the refined baseline inventory and in doing so considered and applied the designation criteria set forth at 43 CFR 8342.1. The results of the route evaluations are documented in the route reports, which are described in detail in Appendix N. During route evaluations, the BLM IDT route review team:

- Identified the purpose and need of each route. The IDT and cooperators identified and evaluated whether, and to what extent, each route currently or historically has received motorized and non-motorized use and provides access, connectivity, and/or recreational outcomes. This included documentation and consideration of known authorized uses, user conflicts, whether and to what extent the route provide access to land ownerships, facilities, campsites, points of interest (e.g. overlooks or natural and historic features), and whether there are multiple routes leading to the same location or providing a similar experience.
- Verified the character and use level of the route.
- Identified the users of the route.
- Identified the resources present on or near the route and the 2008 RMP goals and objectives for those resource values including resource protection needs, user safety

issues, user conflict issues, and minimization and monitoring opportunities for resource damage, fish and wildlife harassment or disruption, and impairment of wilderness values.

- Applied and documented (Appendix N) the designation criteria set forth at 43 CFR 8342.1 to determine how resource and user conflicts could be minimized (limit the degree or magnitude of the action (BLM MS 1626)) through appropriate OHV designation.
- Proposed route-specific route OHV designations (open, limited, or closed) under each action alternative based on the individual route network alternative's theme(s) and documented the rationale for that proposal including how the designation would minimize damage to affected soils, watershed, vegetation, and or other resources. As necessary, additional management (e.g., monitoring) was assigned to routes as part of their individual proposed designations to minimize resource and user conflicts in accordance with 43 CFR 8342.1. Details on these management assignments are contained in the route reports (Appendix N).
- As described above, the BLM's route inventory was based on data from various sources. Throughout the planning process, the BLM received numerous route-specific comments and input from the public, stakeholders, and cooperating agencies that resulted in further refinement of the route evaluations and proposed route designations in the network alternatives.

2.1.4 Creation of the Alternative Route Networks

While routes were individually evaluated, the final TMP will be an aggregate of routes, selected from a range of alternatives, that have been organized into a network meeting the purpose and need of the project. The proposed OHV route network designation alternatives analyzed in this EA as Alternatives B-D (see Section 2.2-2.6) were developed as themes, reflecting issues that emerged through the 2017 Settlement Agreement and both internal and external scoping. The route network in Alternative B was created to emphasize resource conservation and includes specific requirements from the 2017 Settlement Agreement. The route network in Alternative D was created to emphasize public access to public lands. The route network in Alternative C was created to balance multiple-uses of public lands. Each network was informed by the designation criteria at 43 CFR 8342.1, issues identified through internal and external scoping, and management decisions and objectives in the 2008 RMP. The holistic analysis of these evaluated routes, through their organization in action alternatives, is the crucial step to informing a decision on what proposed route designations become the travel network adopted in the TMP.

2.2 TMA Route Network Designations by Alternative

Tables 2.1 and 2.2 summarize the proposed route network designations by alternative. OHV route designations are defined in the glossary included as Appendix Q. Tables F.1 and F.2 in Appendix F show the difference in number of miles and routes designated under each alternative. Appendix O features maps showing proposed route networks and designations for Alternatives A, B, C, and D. The alternative networks proposed in Alternatives B-D reflect more miles of designated OHV (open, limited, or closed) routes than the Alternative A because the Alternatives B-D were created using the collection of evaluated routes, not just those formally designated or considered available for public motorized vehicle use in the 2008 RMP and TMP. The evaluated routes represent a more comprehensive route dataset (i.e., the best available data) than that used for the previous (2003 and 2008) travel planning efforts.

Table 2.1: Miles of Routes by Designation and Alternative
(1,180.8 total miles of evaluated routes; percentages are % of total evaluated route miles)

Designation	Alt. A		Alt. B		Alt. C		Alt. D		
	Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent	
All Routes (1180.8 miles; 100% of evaluated routes)	OHV-Open	302.6 ³	30.1%	334.2	28.3%	624.0	52.9%	732.3	62.0%
	OHV-Limited	0.0	0.0%	16.8	1.4%	131.8	11.2%	136.4	11.6%
	OHV-Closed	0.0	0.0%	829.6	70.3%	424.8	36.0%	311.9	26.4%
	Other Evaluated Routes	878 ⁴	69.9%	-	-	-	-	-	-

Table 2.2: Number of Routes by Designation and Alternative
(1,136 total inventoried routes in evaluated route network; percentages are % of total evaluated routes)

Designation	Alt. A		Alt. B		Alt. C		Alt. D		
	Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent	
All Routes (1136 routes; 100% of evaluated routes)	OHV-Open	136 ⁵	12.0%	145	12.8%	409	36.0%	559	49.2%
	OHV-Limited	0	0.0%	9	0.8%	76	6.7%	77	6.8%
	OHV-Closed	0	0.0%	982	86.4%	651	57.3%	500	44.0%
	Other Evaluated Routes	1,000 ⁶	88.0%	-	-	-	-	-	-

2.3 Alternative A (Current Condition)

Alternative A represents no action/continuation of current conditions within the TMA. Alternative A includes 302.6 miles of routes (on BLM lands only) available for public motorized vehicle use (OHV-open and BLM System/County Roads) as described in the 2008 RMP and TMP, including Highway 24 and I-70 as depicted in the 2008 RMP’s Map R-18. Alternative A also includes 878 miles of undesignated routes that have seen continued OHV use since the BLM adopted the 2008 RMP and would be expected to see continued use if Alternative A were adopted. These undesignated routes have been inventoried and evaluated as a part of this planning effort and are reflected in the comparison tables as “other evaluated routes” for this alternative only. Under this alternative, the undesignated routes would remain undesignated.

The public’s historic use of undesignated routes throughout the TMA is the result of a culmination of numerous factors including confusion caused by the 2008 RMP decision to defer formal designation of routes existing within the formerly OHV-open area to a future travel planning effort coupled with the fact that those route-specific designations have never been

³ For Alt. A, this number reflects the number of miles in the TMA designated OHV-open in the 2008 RMP TMP plus the number of miles of BLM system and county roads in the TMA identified in the 2008 RMP as available for motorized use.

⁴ For Alt. A, this number is an estimate of evaluated route miles in the TMA receiving ongoing public use but which are undesignated in the 2008 RMP TMP.

⁵ For Alt. A, this number reflects the number of routes in the TMA designated as OHV-open in the 2008 RMP TMP plus the number of BLM system and county roads in the TMA identified in the 2008 RMP as available for motorized use.

⁶ For Alt. A, this number is an estimate of evaluated routes in the TMA receiving ongoing public use but which are undesignated in the 2008 RMP TMP.

made; and incomplete implementation of the 2008 RMP TMP over the life of the plan including a lack of signage throughout the TMA making clear which routes are open to OHV use.

Alternative A maintains the route-specific designations included in the 2008 RMP TMP. The routes identified and designated in 2008 RMP TMP as available for OHV use (route-specific OHV-open designations plus BLM system/County roads) comprise 30.1% of the total evaluated route network miles. The 2008 RMP TMP does not designate any routes as OHV-closed or OHV-limited (see Tables 2.1 and 2.2). Under this Alternative, 69.9% of evaluated route miles throughout the TMA would remain undesignated. Alternative A does not include the adoption of the TMP Implementation Guide. While BLM would strive to apply implementation measures outlined in the 2008 RMP/ROD, the nature of many existing routes makes them difficult to patrol, maintain, sign, and achieve visitor compliance.

2.4 Alternative B

The route network proposed for route-specific OHV-open, OHV-limited, or OHV-closed designations in Alternative B emphasizes natural resource protection, and represents the alternative required by the 2017 Settlement Agreement that would most enhance BLM-inventoried wilderness characteristics. The number and location of evaluated route miles designated as open to OHV use is accordingly more constrained under this alternative as compared to Alternatives C and D. Alternative B was designed to enhance wilderness characteristics by designating evaluated routes within Lands with Wilderness Characteristics (LWC) as OHV-closed, and to minimize and mitigate travel-related impacts to resources by designating specific evaluated routes with resource concerns as OHV-closed.

In this alternative, 28.3% of the evaluated route miles are designated OHV-open, 1.4% are designated OHV-limited, and 70.3% are OHV-closed (see Tables 2.1 and 2.2). Alternative B incorporates suggestions from public comments submitted during the scoping period in 2015 and comments received after route reports and proposed alternative maps were made available to the public in June 2019.

2.5 Alternative C

The route network proposed for route-specific OHV-open, OHV-limited, or OHV-closed designations in Alternative C represents a variety of route designations which resolve resource and access needs in a blended manner while accommodating a wider variety of the BLM's programs and priorities. This alternative provides for route-specific OHV-open, OHV-limited, and OHV-closed designations at levels that accommodate natural and cultural resource protection while designating more routes as OHV-open and -limited than Alternative B. Alternative C also closes some evaluated routes in LWC.

In this alternative, 52.9% of the evaluated route miles are designated OHV-open, 11.2% are designated OHV-limited, and 36.0% are OHV-closed (see Tables 2.1 and 2.2). Alternative C incorporates suggestions from public comments submitted during the scoping period in 2015 and comments received after route reports and proposed alternative maps were made available to the public in June 2019.

2.6 Alternative D

The route network proposed for route-specific OHV-open, OHV-limited, or OHV-closed designations in Alternative D maximizes the number of routes designated as OHV-open and -limited and emphasizes maximum mileage available for OHV recreation.

In this alternative, 62.0% of the evaluated route miles are designated OHV-open, 11.6% are designated OHV-limited, and 26.4% are OHV-closed (see Tables 2.1 and 2.2). Alternative D incorporates suggestions from public comments submitted during the scoping period in 2015 and comments received after route reports and proposed alternative maps were made available to the public in June 2019.

2.7 Implementation Actions Common to Alternatives B-D

2.7.1 Overview

Although some forms of implementation-related management were specified for individual route-specific designations during route evaluation, the following implementation activities identified in the TMP Implementation Guide (Appendix R) would be common to Alternatives B-D.

2.7.2 Signage

(TMP Implementation Guide Section 3.4 and Appendix 7)

The travel route network designated in the TMP would be signed to identify routes and inform the public of locations, special conditions, and limitations. Sign placement will be done in previously disturbed areas where available. Sign placement in areas that have not been previously disturbed is not analyzed in this EA and would be subject to additional NEPA compliance, if proposed. According to the Travel PA, Stipulation VI.C., the installation of signs is exempt from cultural resource survey and consultation requirements.

2.7.3 Route Maintenance

(TMP Implementation Guide Section 3.5)

Maintenance of designated routes would fall into one of two categories: 1) routine maintenance that meets the purpose and need of the route and that does not extend beyond the edge of previous surface disturbance; and 2) maintenance of a route that exceeds the standard of routine maintenance by either upgrading, widening, re-aligning, or otherwise creating new surface disturbance. Maintenance that falls into the second category (i.e., maintenance that extends beyond the edge of previous surface disturbance) is not analyzed in this EA, and if considered in the future, would be subject to an appropriate level of additional site-specific NEPA consideration prior to being approved.

2.7.4 Reclaiming Closed Routes

(TMP Implementation Guide Section 7)

Routes that are not designated as OHV-open or OHV-limited under this TMP may be reclaimed through a variety of methods described below:

- Closed routes may be allowed to revegetate naturally.

- Route reclamation may be done by mechanically ripping the route surface and revegetating through seeding or planting.
- In sandy areas and washes, tracks may be raked out so there is no evidence of OHV use.
- Grading and recontouring may be used in some areas to restore natural slopes.
- Signs and/or barriers (boulders, fences and gates, berms, vegetation) may be placed at the entrances to any closed routes.
- Mulching may be used to obscure closed routes or protect disturbed surfaces.
- As with maintenance activities, ground disturbance that may extend into areas not previously disturbed is not analyzed in this EA and, if proposed, an appropriate level of additional site-specific NEPA analysis will be completed prior to disturbance.

2.7.5 Best Management Practices and Standard Operating Procedures (TMP Implementation Guide Section 3)

Implementation activities would be carried out in accordance with the Best Management Practices (BMPs) and Standard Operating Procedures (SOPs) listed in the TMP Implementation Guide, Section 3.5.

2.7.6 Roadside Camping

Roadside camping within the TMA would be allowed within 30 meters on either side of the centerline of routes designated as OHV-open or -limited, unless otherwise indicated. OHV access to dispersed campsites may only occur where there is evidence the site has been used in the past. Examples of this may include (but are not limited to) vehicle tracks, rock fire rings, parking areas, etc. This does not apply to areas where motorized travel is prohibited (e.g., Wilderness areas).

2.8 Alternatives Considered but Eliminated from Further Analysis

The BLM also considered seven additional alternatives but chose to eliminate them from further analysis.

2.8.1 Alternative E: Designate all Evaluated Routes OHV-Closed

Alternative E would designate as OHV-closed all evaluated routes in the TMA. This alternative was eliminated from further analysis, as it would effectively close the TMA to OHV travel and create hindrances to the BLM's obligation to manage the TMA for multiple uses.

2.8.2 Alternative F: Designate All Evaluated Routes OHV-Open

Alternative F would designate as OHV-open all evaluated routes within the TMA. This alternative was eliminated from further analysis because designating all evaluated routes open to OHV use would not meet the BLM's responsibilities under the designation criteria of 43 CFR 8342.1.

2.8.3 Alternative G: Southern Utah Wilderness Alliance (SUWA) Conservation Alternative

Alternative G was suggested by SUWA⁷ as a “conservation” alternative and a replacement of Alternative B. Alternative G would designate as OHV-open 333 miles of evaluated routes in the TMA. It would designate as OHV-open boundary and cherry-stemmed routes around SUWA’s Labyrinth Canyon, San Rafael River, Sweetwater Reef, and Flat Top proposed wilderness areas and designate as OHV-closed all evaluated routes within the boundaries of these areas (and not otherwise cherry-stemmed). It would also designate as OHV-closed evaluated routes that SUWA considered redundant, old, proliferated, reclaimed, revegetated, or seismic lines. Alternative G was not considered in detail as a separate alternative as it is substantially similar in design to Alternative B. However, some of the route designations proposed in Alternative B were updated in response to information SUWA presented in Alternative G, resulting in the reduction of the number of miles of OHV-open included in Alternative B.

2.8.4 Alternative H: SUWA Balanced Alternative

Alternative H was suggested by SUWA as a “balanced” alternative and a replacement of Alternative C. Alternative H would designate 595 miles of evaluated routes as OHV-open, including routes for which the BLM could “reasonably patrol, maintain, sign and achieve visitor compliance.” Alternative H was not considered in detail because it would have substantially similar effects to the other alternatives analyzed in detail. While Alternative H contains more OHV-open routes than Alternative B and fewer OHV-open routes than Alternative C, all routes considered for designation in Alternative H are considered in Alternatives B through D. Alternative H merely presents a different combination of OHV-open vs. OHV-closed designations. The BLM could achieve the same effect as Alternative H by selecting portions of any action alternatives in its Decision Record. Therefore, Alternative H does not resolve conflicts concerning alternative uses of available resources, does not expand the full spectrum of alternatives, and does not better inform the decision to be made.

2.8.5 Alternative I: SUWA Motorized Alternative

Alternative I was suggested by SUWA as a “motorized” alternative, and a replacement of Alternative D. It would designate 895 miles of evaluated routes as OHV-open. It would also designate routes into Labyrinth Canyon SRMA, Dry Lake ACEC, and within BLM-identified LWCs as OHV-open. Alternative I was not considered in detail because it is substantially similar in design and would have similar effects as Alternative D. In Alternative I, there would be approximately 26.2 more miles of routes designated as OHV-open and OHV-limited than proposed under Alternative D.

2.8.6 Alternative J: Develop a Youth Opportunity Loop

Alternative J was suggested in a public comment on the Draft EA. It includes development of a Youth Opportunity Loop close to the community of Green River. Alternative J was not considered in detail because development of a Youth Opportunity Loop close to town would require construction of new routes. New route construction is outside the scope of this planning effort and EA.

⁷ In the 2017 Settlement Agreement BLM agreed to consider in the TMP NEPA document, as appropriate, any route network alternative proposed by a party to 2017 Settlement Agreement. SUWA is a party to the 2017 Settlement Agreement.

2.8.7 Alternative K: 2008 RMP Designated Routes

Alternative K is the route network designated/available for OHV use in the 2008 RMP TMP and was previously included in the Draft EA as the No Action Alternative (Alternative A).

Alternative K does not accurately portray current conditions in the TMA or allow the BLM to fully compare the action alternatives to current conditions. As a result, and as described above in Section 2.3, Alternative A has been revised to more accurately describe the OHV use that has occurred in the TMA and which is expected to continue to occur absent the designation of a comprehensive route network in a new TMP.

Alternative K was not carried forward for detailed analysis in the final EA. Alternative K does not conform to the 2008 RMP, which directs the BLM to complete route designations within the previously open area (OHV-7). Alternative K does not meet the purpose and need of developing a comprehensive travel network within the TMA and does not fulfil BLM's commitment in the 2017 Settlement Agreement to adopt a new TMP for the San Rafael Desert TMP. Alternative K was therefore dismissed from detailed analysis.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 Overview

3.1.1 Introduction and General Setting

This chapter describes the current resource conditions and trends of recreational use relevant to the key scoping issues presented in section 1.6.2. It also analyzes the effects that implementation of any of the alternative route networks would have on these resources and uses, and how each alternative would minimize damage to resources of public lands in accordance with 43 CFR 8342.1. The affected environment is described for each resource and is the same for all alternatives. For an overview of the TMA boundaries, see section 1.4. Table E.1 lists all relevant resources/uses for which issues are analyzed and provides rationales for resources/uses not analyzed.

Implementation-level decisions associated with designating routes or applying some other OHV limitation must comply with 43 CFR 8342.1. This analysis and the associated route evaluation reports seek to demonstrate this compliance by clearly linking 2008 RMP goals and objectives to the appropriate elements of the designation criteria and describing measures taken to minimize damage, harassment, disruption, and conflict with various resources. The minimization of these impacts means to limit the degree or magnitude of the action and its implementation (BLM MS 1626).

3.1.2 Effects Analysis Definitions

The BLM's NEPA handbook defines "effect" as an "impact to the human environment brought about by an agent of change, or action." Effects analysis predicts the degree to which the environment will be affected by an action" (BLM 2008a). The NEPA handbook adds that effects "can be both beneficial and detrimental, and may be direct, indirect, or cumulative" (BLM 2008a). For this EA, beneficial effects are those that would protect, enhance, or restore the TMA environment. For example, route designations and travel management can provide access for

authorized uses (e.g., livestock grazing, communication sites, etc.), resource management (e.g., habitat restoration and improvement, weed treatments and fuels management, monitoring, etc.), interpretation, research, etc. In contrast, detrimental effects are those that would result in degradation of the environment. The analysis that follows—unless otherwise noted—focuses on the key issues from scoping and concerns associated with potential effects on relevant TMA resources and resource uses. Analyzing these effects provides a useful comparison between each alternative travel network’s proposed designations. In accordance with the BLM’s NEPA handbook, the BLM “must consider and analyze three categories of effects for any BLM proposal and its alternatives: direct, indirect, and cumulative (40 CFR 1508.25(c))” (BLM 2008a), so throughout the analysis effects are discussed in the context of:

- **Direct effects:** caused by the action and occur at the same time and place (40 CFR 1508.8(a)).
- **Indirect effects:** Caused by alternative but later in time or further removed in distance but are still reasonably foreseeable (40 CFR 1508.8(b)). Note that this EA does not usually differentiate between direct and indirect effects. Instead they are addressed together as “effects” of the alternative.
- **Cumulative effects:** According to 40 CFR 1508.7, a cumulative effect “is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.”
- **Mitigation:** Measures or procedures that could reduce or avoid adverse impacts and have been incorporated into the proposed action or an alternative. Mitigation can avoid, minimize, rectify, reduce, eliminate, or compensate for the impact of the action. For this EA, mitigation measures were identified in the individual route reports when such measures were determined necessary by the specialists during evaluation of the routes.
- **Monitoring:** Documentation of decision implementation and compliance, decision effectiveness and analysis accuracy, and mitigation effectiveness to inform decision modification if the desired outcomes are not being achieved.

Direct, indirect, and cumulative effects are disclosed in this chapter. Additional details on design features, mitigation, and monitoring may be found in Sections 4, 5, and Appendix 2 of the TMP Implementation Guide, and in the individual route reports.

3.1.3 General Premises

The following general premises are applied in analysis of each of the alternative travel route network’s potential effects on the TMA environment:

- The construction of new routes is outside of the scope of this project. As part of ongoing travel management associated with this TMP, new routes and route designations may be added or changed in the future to respond to growing public demand for access, Title V ROW considerations, or concerns of damage to resources. Any new proposed routes or changed designations will be subject to an appropriate level of site-specific environmental analysis in accordance with NEPA and the Travel PA.

- As discussed in Section 2.1, “evaluated routes” refers to the routes within the TMA subject to the inventory and evaluation process that were considered for designation as a part of this TMP process.
- Year-round OHV and non-motorized recreation is expected to increase in and around the TMA independent of the network alternative selected for the TMP (BLM 2008b).
- For Alternatives B-D, the designation of a comprehensive route network that accounts for all evaluated routes is anticipated to provide increased predictability and clarity for users along with a variety of OHV opportunities and experiences that will help reduce user inclination to travel off OHV-open and OHV-limited routes.
- Under Alternatives B-D, maintenance, mitigation, and monitoring of routes will be facilitated per the TMP Implementation Guide. Details and examples of monitoring, best management practices (BMPs), and mitigation may be found in Sections 3, 4, 5, and 6 and Appendix 2 of the TMP Implementation Guide.
- The Alternatives B-D implementation referenced in this document and detailed in the TMP Implementation Guide is subject to available funding and resources. For the purposes of this EA, it is assumed that funding and resources would be available for implementation of the TMP.
- For purposes of this EA, it is assumed that OHV users would act responsibly on all designated routes. Impacts from illegal activities are not addressed in the analysis.
- Routes that are designated OHV Closed would not become part of the OHV travel network. They would be allowed to reclaim naturally or be actively reclaimed (e.g., through scarification and seeding), unless they are to remain available for administrative or authorized uses (e.g., access to range facilities or communication sites).
- For the purposes of cumulative impacts analysis in this EA, the BLM reviewed several sources. First, the 2008 RMP’s Mineral Potential Report’s (MPR) found no occurrence potential for coal bed methane for the entire project area (MPR map 27). It determined the western one-third of the TMA falls within the low occurrence potential projection for conventional oil and gas, and the eastern two-thirds of the TMA falls within occurrence potential projection for oil and gas (MPR map 28). Second, the 2016 San Rafael Desert Reasonably Foreseeable Development (RFD) Scenario projected that oil and gas drilling would average two wells per year for 15 years for a total of 30 wells resulting in 585 acres of disturbance⁸. These 30 projected wells are reasonably foreseeable future activities that may accumulate impacts with the alternatives. Third, a review of BLM and Utah Division of Oil, Gas, and Mining (DOG M) data found four Applications for Permit to Drill (APD) in the TMA totaling approximately 62 acres. It was assumed that these four APDs are part of the 30 wells predicted by the Reasonably Foreseeable Development Scenario for Oil and Gas in the San Rafael Desert Master Leasing Plan Area - Price and Richfield Field Offices, reasonably foreseeable future activities that may accumulate impacts with the alternatives (BLM 2016c). A review of BLM and DOGM data also found 92 wells that were either plugged and abandoned, location abandoned but not drilled, or APD rescinded. These are not considered to be past, present, or reasonably foreseeable future activities because they were never drilled or they have been completely

⁸ Since the TMP will not authorize the construction of new routes, surface disturbance is not a direct, indirect or cumulative impact of any alternative, so the amount of surface disturbance from foreseeable oil and gas development is not useful data for judging the significance of effects; however, the acres potentially disturbed by such development are included for disclosure purposes.

reclaimed and accepted for final abandonment, therefore they are not or are no longer impacting the environment. Fourth, GIS data was reviewed for existing leases. There are 77 leases within the TMA. However, given the high rate of plugging of wells or failure to drill permits in this project area, no additional wells were reasonably foreseeable beyond the 30 wells anticipated by the San Rafael Desert Master Leasing Plan (BLM 2016b).

3.1.4 General Effects Analysis Methodology

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

- GIS data and resource/use data collected during route evaluation are the basis for disclosing alternative route networks' potential effects on issues associated with particular resource/use topics. Data in tables show how many miles and/or numbers of routes of a particular designation under each alternative are likely to affect resources or uses associated with certain issues and impact analysis questions. These tables are used to compare effects of the alternatives. In many cases, the potential for effects is estimated by comparing percentages or miles of routes of a designation with the total miles or numbers of routes associated with a particular resource or resource use. In other cases, acres are used to compare the amount of habitat affected. Tables throughout Chapter 3 present these comparisons of potential effects. Routes and miles are considered associated with a resource when they cross over it (e.g., species habitat polygons), are within a defined proximity distance of it (e.g., within ½ mile), or are otherwise noted as being associated in route reports. Proximity distances were based on the professional knowledge of BLM specialists unless otherwise stated.
- During route evaluations, the BLM considered route locations and characteristics, and explored alternative designations for avoiding, minimizing, or mitigating project effects to minimize damage, disruption, and conflict with various resources and among users. The BLM considered designating routes as available for OHV use in areas where doing so would involve minimal resource impacts.
- During route evaluation, mitigation measures were considered and documented where appropriate and can be found on the route reports for routes with the designations of "Open with management" or "Limited with management." Mitigation measures may include such actions as gate installation, parking area creation, and monitoring for cultural resource sites or recreational uses.
- For some resource/use topics, specific methodologies were used to determine effects. These methodologies are described in their respective resource/use sections.
- To help inform overall context and relative quantities, in the alternative travel network tables in Chapter 3, total routes or miles associated with a particular resource/use-related topic (and the percentage of the total action alternative network those routes or miles represent) are often presented as values in the far-left columns of tables.
- Mileages, percentages, acreages, and other quantities used in this analysis are approximate projections for comparison and analytical purposes only; they do not always reflect exact measurements or precise calculations. Table mileages and percentages may not total equally in some instances due to rounding.
- Although the following effects analyses are presented in the context of TMA-wide alternative travel route networks, each individual route within a given alternative network has been systematically and carefully evaluated pursuant to the 43 CFR 8342.1

designation criteria as part of a route evaluation process documented in the route reports (Appendix N).

3.1.5 What This EA Does Not Analyze

This EA does not analyze direct or indirect effects from various activities that would involve previously undisturbed ground such as realignments, reroutes, new route construction, or facility extensions (e.g., a longer culvert, major washout repair that includes bank stabilization outside the route prism, etc.). Such surface-disturbing activities are outside the scope of this EA and would be subject to site-specific review in another document as appropriate under NEPA before it could be authorized. This EA also does not analyze direct or indirect effects from nonmotorized use of network alternative routes unless such effects result from reasonably foreseeable actions and may accumulate with the alternative's impacts. In that case, the foreseeable action's effects would be accounted for as appropriate in the cumulative impact section.

3.1.6 Mitigation

During route evaluation, mitigation measures were considered and documented where appropriate for routes with the designations of "Open with management" or "Limited with management." Mitigation measures include such actions as gate installation, parking area creation, and monitoring for cultural resource sites or recreational uses. Details on monitoring, BMPs, and mitigation may be found in sections 4 and 5 and Appendix 2 of the TMP Implementation Guide. Mitigation measures would help reduce the detrimental effects of alternative travel networks on many of the TMA's natural and cultural resources, and monitoring would ensure mitigation is effective.

3.2 Key Issue 1: Minimizing the travel network's adverse environmental effects on the TMA's natural and human environment

3.2.1 Cultural Resources

How would the route designation alternatives minimize effects on cultural resources?

3.2.1.1 Affected Environment

BLM Manual 8100 – Foundations for Managing Cultural Resources, defines cultural resources as "definite location[s] of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence." The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. They may be, but are not necessarily, eligible for the National Register of Historic Places (National Register). Cultural resource sites eligible for, or listed on, the National Register are referred to interchangeably as "historic properties" or "eligible sites." For details on National Register eligibilities, please see Appendix H: National Register Eligibility Definitions. (BLM 2004a)

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

A Class I Existing Information Inventory (Class I) and associated cultural resources predictive model was prepared for PFO in 2017 (SWCA 2017). The Class I compiled all known cultural resource information for the Field Office into a regional overview. As part of the Class I effort, areas of high, medium, and low cultural resource probability were statistically defined for the field office as a whole. In addition, a separate statistically based model of cultural sensitivity was prepared for a proposed San Rafael Desert Master Leasing Plan. This separate, targeted model was subsequently tested and refined through targeted Class II surveys (Beck et al. 2017).

A review of the Class I inventory indicated that cultural resources within the San Rafael Desert TMA include some of the only known Paleoindian and Paleoarchaic sites within PFO, along with a range of archaic and historic period sites. In association with this undertaking, a Class III intensive pedestrian survey (Class III survey) was also conducted. The literature review prepared prior to the Class III survey indicated that previously documented sites within the San Rafael Desert consist of prehistoric lithic scatters, historic trash scatters, multicomponent sites (including both prehistoric and historic elements), historic roads, sheepherding camps, rock art, and lithic sources.

In association with this proposed undertaking, the BLM conducted a Class III survey of 362 miles (8,411 acres) of routes or portions of routes located within areas identified as having high overall cultural resource potential. High potential areas were identified using the composite San Rafael Master Leasing Plan predictive model (Beck et al. 2017). High potential areas were also selected from the larger composite PFO predictive model for areas not covered by the San Rafael Master Leasing Plan specific model (SWCA 2017). The composite models display the overall cultural resource potential of an area and are statistically sound and backed by robust data. While individual site type models were produced in the creation of the composite model, these individual models lacked sufficient data to make predictions more accurate than random chance. The decision to select areas of high potential from the composite models of cultural resource sensitivity follows industry standards and complies with the provisions of the Travel PA and 2017 Settlement Agreement. Pursuant to the 2017 Settlement Agreement, all routes located within the Dry Lake Archaeological District ACEC were surveyed regardless of the predicted cultural sensitivity.

The cultural resources identified in the TMA as a result of the Class III survey are consistent with the types identified in the literature review and consist of prehistoric lithic scatters (i.e., flaked stone scatters) along with artifact scatters (i.e., flaked stone scatters with other artifact types such as stone tools, pottery, or ground stone), temporary camps, a few possible habitation areas, and rock art panels. Historic cultural resources include historic artifact scatters (e.g. beverage and food can scatters), roads, and sites associated with sheepherding, mining, and other

historic-era activities. Documentation and analysis of the Class III surveys is captured within the project report: Class III Cultural Resources Survey of Off-Highway Vehicle Routes in the San Rafael Desert, Bureau of Land Management, Price Field Office, Emery County, Utah: U17ES1077 (Envirosystems Management, Inc. 2019). The Class III survey and the additional cultural resource identification efforts (e.g., Price Field Office Class I inventory) for this TMP are consistent with the requirements of the 2017 Settlement Agreement Stipulations 24 (b)(ii) and (c), and the BLM Utah -Travel PA.

The Class III survey of routes within the San Rafael Desert resulted in the documentation of 231 cultural resource sites and 437 isolated occurrences. The isolated occurrences do not meet the definition of a site and were determined to be not eligible to the National Register. Of the 231 documented cultural resource sites BLM has determined 160 are not eligible for the National Register. The remaining 71 sites are eligible for the National Register and consist of 53 prehistoric lithic scatters; eight multicomponent sites consisting of prehistoric and historic artifact scatters; one multicomponent site consisting of prehistoric and historic temporary camps; one multicomponent site consisting of prehistoric lithic flakes, historic artifacts, and a historic habitation feature; four prehistoric sites where temporary camping possibly occurred; one historic homestead; and two prehistoric sites with rock art. A table listing all 231 cultural resource sites recorded and evaluated during the Class III surveys can be found in Appendix I: Details on Cultural Resource Site Types, and NRHP Eligibility, and Potential Effects to Sites Based on OHV-Open or OHV-Limited Designations.

3.2.1.2 Environmental Effects

Potential Effects Common to All Alternatives

The BLM has a responsibility under FLPMA to consider impacts to all cultural resources. The BLM documented any observed past and/or current impacts at each of the 71 historic properties identified during the Class III surveys. These observations informed the BLM's evaluation of potential direct, indirect, or cumulative impacts or effects to historic properties that may result from route designations. The remaining 160 sites recorded during the Class III survey are not eligible for the National Register and are therefore are not subject to the provisions of NHPA Section 106 effects analysis. However, impacts from OHV use may still occur to those sites that are similar in nature and intensity to those effects which may occur to historic properties.

Impacts that may occur to any cultural resource site from OHV use of routes designated as Open or Limited are expected in most cases to be minor, inconsistent, and ephemeral. For example, OHV travel in or immediately adjacent to a cultural resource site may cause a displacement of cultural artifacts or features at a site that would occur at the time of the activity or cause soil movement that may lead to soil erosion which could further displace cultural materials. Impacts to cultural resources from routes designated OHV-closed will be less than those designated as OHV-open or OHV-limited.

Even though a route may be designated as OHV-open or OHV-limited and may pass through a cultural resource site, any impacts may be minor, thereby not causing a NHPA Section 106 adverse effect on the site, as defined by 36 CFR 800.5.(a)(1). An adverse effect under NHPA Section 106 is created when impacts of an undertaking are significant enough on a site that they may alter, directly or indirectly, any of the characteristics of a historic property that qualify the

property for inclusion in the National Register, or in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Route designations and the subsequent use of these dirt and gravel surfaced routes may also result in the generation of fine dust particles in airborne clouds. The impact of dust particles settling on rock art panels has been the subject of three rigorous scientific studies conducted in Nine Mile Canyon, Utah (Spangler 2008; Silver 2008; Itasca Denver 2011). These studies evaluated if the movement and settlement of dust on nearby rock art panels increased the weathering of rock art sites, which would constitute an adverse effect to eligible rock art sites. The 2008 Preservar study notes that abrasion damage to rock art on sandstone surfaces only occurs under very specific conditions. In particular the dust must be comprised of a grit that is harder than the sandstone itself. Given that the routes in the San Rafael Desert TMA are developed from local materials (deposited from weathering of the surrounding rock), it is unlikely that any grit is harder than the surrounding rock (Silver 2008: 37).

While it is assumed that route users will behave responsibly and not engage in illegal activities, the BLM acknowledges that the designation of routes to areas with cultural resources may lead to impacts from the illegal collection of artifacts, looting, or vandalism. The level and nature of these potential impacts are influenced by the fragility of each cultural resource, their collectability, and their location. Location studies which focus on illegal collection or looting have focused on how the level of accessibility to cultural resources causes an increase or decrease in these types of impacts. Some studies such as those conducted in Range Creek, Utah (Spangler et al. 2006), reported a decrease in impacts as the distance away from a locked gate is increased. One study suggested that cultural resource sites that are visible to users on a traveled route are less likely to be damaged than sites that are less accessible (Simms 1986, cited by Spangler et al. 2006). However, another study found that in five years of monitoring, the construction of a transmission line and access routes did not cause any increases in collection, looting, or vandalism of cultural resources (Summit Envirosolutions, Inc. 2011).

When designating routes as OHV-closed, traffic may be concentrated on nearby routes with the same destination. However, this assumes an equal distribution of use across a finite route network. Designating a rarely used route as OHV-closed may not appreciably increase traffic (concentrate use) on others. When evaluating potential impacts to cultural resources from route designations and resultant changes in route concentration (if any) the BLM considered numerous factors, including the use level of the route (primary, secondary or tertiary), the durability of the route surface (i.e. sandy soil, natural gravels, or bedrock), the durability of the cultural resource, the extent of any impacts (minor, moderate, or major), and the reasons users select the route for travel.

Impact Indicators

Table 3.1 quantitatively illustrates the numbers of known cultural resources within ¼ mile of routes under each alternative. Although the presence of a cultural resource on a route or within ¼ mile of a route is not an indication that an impact may or will occur, this analysis is an indicator of potential effects each alternative network could have on cultural resources when considering the TMP project as a whole. See Appendix H for definitions of the National Register eligibilities used in Table 3.1.

Table 3.1: Numbers of Routes Crossing or within ¼ Mile of Known Cultural Resource Sites in the TMA
 (the second from-left column notes the number and percentages of total evaluated routes that are associated with sites)

	# Routes near Cultural Resources; % of Evaluated Routes	Designation	Alt. A		Alt. B		Alt. C		Alt. D	
			Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent
Historic properties located within ¼ mile of an evaluated route which may receive minor impacts from route use	376 routes 33.1% of evaluated routes	OHV-Open	52	13.8%	31	8.2%	118	31.4%	171	45.5%
		OHV-Limited	0	0.0%	0	0.0%	7	1.9%	10	2.7%
		OHV-Closed	0	0.0%	345	91.8%	251	66.8%	195	51.9%
		Other Evaluated Routes	324	86.2%	-	-	-	-	-	-
Eligible cultural resource sites (3) that may receive major impacts causing adverse effects	6 routes 0.5% of evaluated routes	OHV-Open	1	16.7%	0	0.0%	2	33.3%	2	33.3%
		OHV-Limited	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		OHV-Closed	0	0.0%	6	100.0%	4	66.7%	4	66.7%
		Other Evaluated Routes	5	83.3%	-	-	-	-	-	-
Ineligible cultural resource sites	174 routes 15.3% of evaluated routes	OHV-Open	44	25.3%	34	19.5%	95	54.6%	116	66.7%
		OHV-Limited	0	0.0%	0	0.0%	7	4.0%	7	4.0%
		OHV-Closed	0	0.0%	140	80.5%	72	41.4%	51	29.3%
		Other Evaluated Routes	130	74.7%	-	-	-	-	-	-
Unevaluated to the National Register cultural resource sites (45 routes; 4% of evaluated routes)	45 routes 4% of evaluated routes	OHV-Open	10	22.2%	10	22.2%	29	64.4%	32	71.1%
		OHV-Limited	0	0.0%	0	0.0%	2	4.4%	2	4.4%
		OHV-Closed	0	0.0%	35	77.8%	14	31.1%	11	24.4%
		Other Evaluated Routes	35	77.8%	-	-	-	-	-	-

Of the 71 National Register-eligible sites in the TMA, three sites in particular may be adversely affected depending on the alternative that is selected. These sites are identified by the following site numbers; 42EM2293, 42EM5047, and 42EM5009. Resolution of any adverse effects on these three historic properties from OHV route designations would be accomplished by following the provisions developed in a Historic Properties Treatment Plan (HPTP) for this undertaking.

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Nearly all evaluated routes within ¼ mile of eligible, ineligible, or unevaluated cultural resource sites would continue to be utilized by the public. As shown in Table 3.1 above, a total of six evaluated but undesignated routes (0.5%) receiving ongoing OHV use may cause impacts to a high enough

degree to cause adverse effects to three National Register-eligible sites (42EM2293, 42EM5047, and 42EM5009). Impacts from ongoing OHV use would continue to occur and potential impacts to cultural resources would not be addressed. Under this alternative, a determination of adverse effects would necessitate completion of the measures outlined in the HPTP for resolving the adverse effects to affected historic properties.

Alternative B

Alternative B would designate as OHV-closed approximately 92% (minor site impacts), 100% (major site impacts), 81% (ineligible sites) and 78% (unevaluated sites) of the evaluated routes within ¼ mile of cultural resource sites, eliminating all potential impacts from OHV use on those routes. The six evaluated routes that may cause impacts to a high enough degree to cause adverse effects to the National Register-eligible sites (42EM2293, 42EM5047, or 42EM5009) would be designated as OHV-closed under Alternative B, so adverse effects from use of the routes would not occur and a Section 106 undertaking determination of No Adverse Effects to Historic Properties would be made. This alternative would not require the implementation of the HPTP.

Given the numbers of evaluated routes in or near cultural resources designated as OHV-closed by Alternative B, this alternative would reduce potential travel-related impacts to cultural resources (minor site effects, major site effects, ineligible sites, and undesignated sites) as compared to Alternatives A, C, and D. Alternative B designates as OHV-closed more evaluated routes across cultural site categories than Alternatives A, C, and D as demonstrated in Table 3.1, thereby eliminating route-use related impacts on those OHV-closed routes. Alternative B also designates as OHV-open or OHV-limited fewer evaluated routes in proximity to minor site impacts, major site impacts, and ineligible sites than Alternative A (though it designates more sites as OHV-open or OHV-limited in proximity to unevaluated sites than Alternative A). Alternative B designates as OHV-open or OHV-limited fewer evaluated routes in proximity to every category than Alternatives C and D.

Alternative C

Within ¼ mile of cultural resource sites, approximately 67% (minor site impacts), 67% (major site impacts), 41% (ineligible sites) and 31% (unevaluated sites) of the evaluated routes would be designated as OHV-closed under Alternative C. Potential impacts to National Register-eligible sites to any degree from OHV use would no longer occur on those closed routes. Of the six evaluated routes that may cause impacts to a high enough degree to cause adverse effects to the three National Register-eligible sites (42EM2293, 42EM5047, and 42EM5009), four (66.7%) are designated as OHV-closed, so adverse effects from use of them would not occur to 42EM5047 or 42EM5009. The two evaluated routes designated open to OHV use (33.3%) would continue to cause adverse effects to 42EM2293 and 42EM5009. In this scenario, a finding of Adverse Effects to Historic Properties would trigger implementation of the planned management techniques in the HPTP for avoidance, minimization, and mitigation of adverse effects at 42EM2293 and 42EM5009. The site-specific effect determination for 42EM5047 would remain No Adverse Effect.

Given the numbers of evaluated routes in or near cultural resources designated as OHV-closed by Alternative C, this alternative would reduce potential travel-related impacts to cultural resources (minor site effects, major site effects, ineligible sites, and undesignated sites) as

compared to Alternative A. Alternative C also designates as OHV-closed more evaluated routes with minor site impacts, ineligible sites, and unevaluated sites than Alternative D as demonstrated in Table 3.1. Alternative C designates more OHV-open and OHV-limited routes across categories than Alternative B. Alternative C designates fewer OHV-open and OHV-limited routes in minor site impacts, ineligible sites, and unevaluated sites than Alternative D except that Alternative C designates equal numbers of OHV-closed, OHV-limited, and OHV-open evaluated routes with major impacts as Alternative D.

Alternative D

Within ¼ mile of cultural resource sites, approximately 52% (minor site impacts), 67% (major site impacts), 29% (ineligible sites) and 24% (unevaluated sites) of the evaluated routes would be designated as OHV-closed. Potential impacts from OHV use of the routes described above would no longer occur on those closed routes. Of the six evaluated routes that may cause impacts to a high enough degree to cause adverse effects to the three National Register-eligible sites (42EM2293, 42EM5047, and 42EM5009), four (66.7%) are designated as OHV-closed, so adverse effects from them would not occur to 42EM5047 or 42EM5009. The two evaluated routes designated OHV-open (33.3%) would continue to cause adverse effects to 42EM2293 and 42EM5009. In this scenario, a finding of Adverse Effects to Historic Properties would trigger implementation of the planned management techniques in the HPTP for avoidance, minimization, and mitigation of adverse effects at 42EM2293 and 42EM5009. The site-specific effect determination for 42EM5047 would remain No Adverse Effect.

Given the numbers of evaluated routes in or near cultural resources designated as OHV-closed by Alternative D, this alternative would reduce potential travel-related impacts to effects to cultural resources as compared to Alternative A as demonstrated in Table 3.1. Alternative D designates more OHV-open and OHV-limited routes across categories than Alternatives A, B, and C, except that Alternative D designates equal numbers of OHV-closed, OHV-limited, and OHV-open evaluated routes with major impacts as Alternative C.

Summary of Cultural Resources Analysis

To summarize this analysis of the four alternative travel networks (Alternatives A–D), two historic properties (42EM2293 and 42EM5009) would potentially be subject to impacts from the undertaking to a high enough degree in three alternatives (A, C, and D), that adverse effects may occur. Choosing alternative route networks A, C, or D would result in a determination of adverse effects and the management techniques planned through consultation in the HPTP would be enacted. Alternative A may cause adverse effects at 42EM5047, but choosing Alternative B, C, or D would cancel those effects and result in a site-specific undertaking of no adverse effect for 42EM5047. Choosing Alternative B would cancel all potential adverse effects to all three historic properties by closing all evaluated routes crossing them.

Analysis of past and current impacts to cultural resources in the San Rafael Desert indicates that OHV traffic in the San Rafael Desert is minimal and temporary. This minimal and temporary use creates very little visual, auditory or atmospheric disturbance to cultural resources, and any direct physical effects to the majority of cultural resources (228) in the desert are minimal and in most cases do not rise to the level of being adverse or causing appreciable harm. Avoidance, minimization, or mitigation strategies for each of the three historic properties potentially subject

to adverse effects were planned during the development of the HPTP. During development of the HPTP, the agency official consulted with the tribal governments and consulting parties assisting the BLM with its Section 106 process for this TMP.

As stipulated in the BLM Utah -Travel PA, development and implementation of the HPTP affirms the BLM's compliance with the Section 106 process for this TMP and will resolve the Adverse Effects to Historic Properties undertaking determination successfully.

Cumulative Effects

The geographic scope of cumulative effects analysis for cultural resources is the TMA boundary. This scope was chosen because impacts to cultural sites are discrete and typically do not extend outside the boundary of a route's Area of Potential Effect. Known past, present, and reasonably foreseeable actions, plans, and projects impacting cultural resources in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River Restoration Plan (USU 2013); 30 reasonably foreseeable oil and gas well developments, including four pending Applications for Permit to Drill; improvement of the Fossil Point Road and associated visitation and recreation at Fossil Point; and other vehicle access-related activities such as mineral quarry development, livestock grazing operations, mining operations, expanding OHV-related recreational access into other land ownership areas, and agricultural activities along the confluence of the San Rafael and Green Rivers.

Cumulative effects to cultural resources from past, present, and reasonably foreseeable projects include travel on or immediately adjacent to a cultural resource site that causes displacement of cultural artifacts or features at a cultural resource site at the time of the activity; soil movement that may lead to soil erosion which could further displace cultural materials; or impacts from the illegal collection of artifacts, looting, or vandalism. Activities requiring permits such as mineral development and livestock grazing operations are designed to avoid sites to the extent possible. Routes designated under the alternative networks may facilitate access and contribute to reasonably foreseeable and cumulative effects by leaving areas that include cultural resource sites accessible for OHV-based travel and recreation activities proportional to the number of routes open, limited, or remaining undesignated under Alternative A. Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions. Alternatives B-D would reduce cumulative travel-related effects on cultural resources proportional to the number of routes limited or closed to OHV travel, because the limited and closed designations exclude types of vehicles or all vehicle access and therefore reduce the probability that vehicle-related human activity would occur.

3.2.2 Soils

How would the alternatives minimize effects on soils?

3.2.2.1 Affected Environment

The TMA is within the unmapped UT625 soil survey area and includes soils from several different formations, which contain different soil types. See Table 3.2 below for a breakdown. The table presents a rudimentary breakdown of the different TMA soil types based on reconnaissance field visits, old soil survey data (NRCS 2019) and resource staff knowledge of

the area. The table does not include soil types on private lands within the TMA. Some miles in the formations below occur in slickrock/rock outcrop areas.

Table 3.2: Summary of Miles of Evaluated Routes in TMA Formations

Formation	Probable Soil Types	Erodible / Sensitive	Miles of evaluated routes within formation type	% of total evaluated routes within formation type
Morrison	Contains cryptobiotic soil	Yes	93.4	7.9%
Surficial Alluvium & Colluvium	Overland water flows and gravity (i.e., rock fall or sluff off); does not include cryptobiotic soil	Yes	33.9	2.9%
Indianola, Mancos, Frontier, Straight Cuffs, Iron Spring & Other Formations	No cryptobiotic soil expected	Yes	88.4	7.5%
Surficial Eolian Deposits	Sand; no cryptobiotic soil	Yes	540.7	45.8%
Dakota, Cedar Mountain, Kelvin, and Other Formations	Contains cryptobiotic soil	Yes	113.9	9.6%
Surficial Older Alluvium & Colluvium	Overland water flows and gravity (i.e., rock fall or sluff off); does not include cryptobiotic soil	Yes	9.5	0.8%
Summerville, Entrada, Carmel, Arapien, Twin Creek & Other Formations	Contains cryptobiotic soil	Yes	280.4	23.8%
Glen Canyon Group (Navajo, Kayenta, Wingate, and Moenave Formations), and Nugget Sandstone	Mainly sandstone	No	20.5	1.7%

Approximately 540.7 miles of evaluated routes (45.8% of evaluated route miles) are located in surficial eolian deposits, which represent fairly uniform soils on a sand sheet landscape (NRCS 2019). Throughout the sand sheet landscape, there are wind-blown scours and depositions that contribute to erosion. In these landscapes, wind moves surface soil (sand) from one area to an adjacent area, contributing to vegetation loss and sand dune creation. Alluvium/colluvium, in which approximately 3.7% of evaluated route miles are located, includes soils moved overland by water and gravity. Approximately 487.7 miles of evaluated routes (41.3% of evaluated route miles) cross or are adjacent to areas with cryptobiotic soil. Biological soils are not found in erosive soil areas because of soil instability. Cryptobiotic soils can play important roles in maintaining soil and ecosystem health (BLM 2008b). For example, cryptobiotic soils are important for the Wright fishhook cactus (*Sclerocactus wrightiae*), which is an ESA-listed plant in the TMA (USFWS 1985). The 2008 Price Proposed RMP/EIS notes:

Cryptobiotic soil crusts are a specialized living community of lichen, cyanobacteria, algae, and moss growing at the soil surface and binding soil particles together. Cryptobiotic crusts stabilize the surface, protecting it from wind and water erosion. Generally, they are considered to aid infiltration of water by increasing surface roughness; they reduce runoff and increase water storage for plants. In semiarid systems,

cryptobiotic crusts can provide a significant amount of nitrogen for plant growth. (BLM 2008b)

Approximately 879.5 miles of evaluated routes (74.5% of evaluated route miles) occur in erodible or sensitive soils. Soils in these areas are considered erosive due to soil composition or type. Other erosive or sensitive soils are found within riparian areas, intermittent or ephemeral drainages, and dry washes. These areas are considered erosive or sensitive because they are subject to soil loss during high precipitation events and spring flows.

3.2.2.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

OHV use can adversely impact long-term soil stability by contributing to erosion scars, maintaining bare ground susceptible to erosion, and compaction. Any damage to biological soil crust and soil compaction on evaluated routes previously occurred from construction or creation of the routes. New impacts to biological soil crust and compaction are not expected to result from route designations in this travel planning effort as the BLM is not proposing to construct any new routes. Since use of the evaluated routes is ongoing, biological soils would not have time to recolonize the routes between uses. Surface rutting from OHV use during wet periods when soils are saturated, and rilling and head-cutting from high precipitation events and overland flows occurs on evaluated routes that are poorly drained and not regularly maintained.

Indirect impacts to soils include soil loss/displacement along routes from high-wind events, accelerated erosion from high precipitation events, overland flows, and spring run-off, and regional dust, which can collect on downwind slopes, decreasing snow reflectance and accelerating spring snowmelt and sediment transport to the Colorado River and other waterways. Access-related recreation activities (dispersed roadside camping, hiking, etc.) can cause soil disturbance, erosion, and damage to biological soil crusts and sensitive soils from trampling. Routes through aquatic areas can contribute to an increase in sedimentation, which in turn can affect habitat quality for fish and other aquatic organisms. For more information, see section 3.2.3 (discussing water quality, riparian areas, and wetlands) and section 3.2.4 (discussing fish).

TMP implementation activities that may result in impacts to soils include installing new signs, some forms of route maintenance (grading, replacing water control structures, surfacing, etc.), route reclamation (including ripping the ground and planting seed, grading/recontouring), installing fencing or barriers, or mulching on closed routes. If implementation is proposed that requires new surface disturbance, additional site specific NEPA would be required before the activity could occur.

Impact Indicators

Because there is no soil mapping currently available within the TMA, geological information and a Natural Resource Conservation Service (NRCS) TMA report were used to conduct the analysis for soils. Geological formations and other general soils information were gleaned from geological maps from the Utah Geological Survey website (UGS 2019) and an NRCS TMA report (NRCS 2019).

Table 3.3 presents the number of evaluated route miles by designation, per alternative, present in formations with cryptobiotic soils and erodible/sensitive soils, which are indicators of the effects the evaluated routes would have on soils. Evaluated route miles within slickrock/bare rock formations are also shown for additional context but are not the focus of analysis because slickrock/bare rock areas lack soil that is likely to be impacted by route designations.

Table 3.3: Miles of Routes in Areas with Erodible Soils, Cryptobiotic Soils, and Slickrock/Bare Rock
(the far-left column notes the miles and percentages of total evaluated route miles that are associated with soil types)

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Erodible soils (879.5 miles; 74.5% of Evaluated Routes)	OHV-Open	229.1	26.0%	271.4	30.9%	490.7	55.8%	568.6	64.7%
	OHV-Limited	0.0	0.0%	5.4	0.6%	91.4	10.4%	95.3	10.8%
	OHV-Closed	0.0	0.0%	602.6	68.5%	297.4	33.8%	215.6	24.5%
	Other Evaluated Routes	650.4	74.0%	-	-	-	-	-	-
Cryptobiotic soils (487.7 miles; 41.3% of Evaluated Routes)	OHV-Open	124.0	25.4%	122.2	25.1%	259.1	53.1%	310.5	63.7%
	OHV-Limited	0.0	0.0%	0.0	0.0%	40.2	8.2%	45.4	9.3%
	OHV-Closed	0.0	0.0%	365.5	74.9%	188.4	38.6%	131.8	27.0%
	Other Evaluated Routes	363.7	74.6%	-	-	-	-	-	-
Slickrock / Bare rock (20.5 miles; 1.7% of Evaluated Routes)	OHV-Open	2.4	11.7%	4.0	19.7%	11.5	56.3%	16.3	79.7%
	OHV-Limited	0.0	0.0%	0.0	0.0%	7.1	34.9%	2.5	12.1%
	OHV-Closed	0.0	0.0%	16.4	80.3%	1.8	8.9%	1.7	8.2%
	Other Evaluated Routes	18.1	88.3%	-	-	-	-	-	-

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Ongoing OHV usage would continue to disturb route surfaces contributing to ongoing erosion where it occurs, inhibiting formation of new cryptobiotic soil crusts, and would not reduce or minimize OHV use-related effects to erodible and cryptobiotic soils.

Alternative B

Under Alternative B, over 600 miles, or 68.5%, of evaluated routes in erodible/sensitive soil areas would be designated OHV-closed. Over 365 miles, or 74.9%, of evaluated routes in cryptobiotic soil areas would be designated as OHV-closed. The closure of these routes would likely reduce OHV use-related effects to erodible and cryptobiotic soils. Alternative B would present the greatest number of route closures, and likely have the greatest reduction of OHV use-related effects in areas of sensitive soils when compared to Alternatives A, C, and D.

Alternative C

Under Alternative C, over 297 miles, or 33.8%, of evaluated routes in erodible/sensitive soil areas would be designated OHV-closed. Over 188 miles, or 38.6%, of evaluated routes in cryptobiotic soil areas would be designated as OHV-closed. The closure of these routes would

likely reduce OHV use-related effects to erodible and cryptobiotic soils. Alternative C would close more evaluated route miles, and likely have a greater reduction of OHV use-related effects in areas of sensitive soils when compared to Alternatives A and D. However, Alternative C would not close as many miles of evaluated routes in sensitive soil areas as Alternative B, and the reduction of effects on sensitive soils from OHV use would likely be less than the reduction anticipated in Alternative B.

Alternative D

Under Alternative D, over 215 miles, or 24.5%, of evaluated routes in erodible/sensitive soil areas would be designated OHV-closed. Approximately 132 miles, or 27.0%, of evaluated routes in cryptobiotic soil areas would be designated as OHV-closed. The closure of these evaluated routes would likely reduce OHV use-related effects to erodible and cryptobiotic soils. Alternative D would close more evaluated route miles, and likely have a greater reduction of OHV use-related effects in areas of sensitive soils when compared to Alternative A. However, Alternative D would not close as many miles of evaluated routes in sensitive soil areas as Alternatives B and C, and the reduction of effects on sensitive soils from OHV use would likely be less than the reduction anticipated in Alternatives B and C.

Cumulative Effects

The geographic scope of cumulative effects analysis for soils is the HUC 10 watersheds encompassing the TMA⁹ and the Green River from Interstate 70 to its confluence downstream with the Colorado River. This boundary was chosen because soil erosion cumulative effects are usually analyzed at the project area level plus the watershed scale down to the next largest confluence, which is the confluence of the Green River and the Colorado River. It is recognized that actions upstream could be affecting conditions in the TMA, but decisions in this project will not have an upstream effect. Past, present, and reasonably foreseeable actions, plans, or projects impacting soils in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers.

Cumulative effects to soils from past, present, and reasonably foreseeable projects include ongoing disturbance of soils throughout the TMA which prevents cryptobiotic soils' re-colonization, and instability, erosion, and loss of soils on routes in areas with steep slopes or high erosive potential.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions. As Alternative A does not

⁹ Cottonwood Wash (114,940 acres), Dugout Creek (58,888 acres), Horseshoe Canyon (88,400 acres), Iron Wash (130,303 acres), Lost Spring Wash-Saleratus Wash (136,333 acres), Lower San Rafael River (247,444 acres), Moonshine Wash (95,697 acres), Outlet Muddy Creek (144,413 acres), Robbers Roost Canyon (53,173 acres), Salt Wash-Green River (157,692 acres), Taylor Canyon-Green River (188,392 acres), and Upper Dirty Devil River (103,284 acres) comprising 1,518,959 acres

propose any new surface disturbing activities or creation of new routes, there would be no cumulative increase in soil impacts.

Alternatives B, C, and D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce current impacts to soils from OHV use by closing and/or limiting a number of evaluated routes. Additionally, each action alternative would also implement the route network through the TMP Implementation Guide. These implementation actions, including signing, reclamation, and adaptive management protocols would further reduce the current impacts to soils. There would be no cumulative increase to soil impacts from OHV travel under any action alternative.

3.2.3 Water Quality: Hydrologic Conditions; Streams, Riparian Areas, and Wetlands; Floodplains; Surface Water; and Waters of the U.S.

How would the alternatives minimize effects on water quality within the TMA?

3.2.3.1 Affected Environment

The TMA contains streams, riparian and wetlands, floodplains, waters of the U.S. small reservoirs, stock ponds, springs, and seeps. BLM-managed lands within the TMA feature approximately 934 miles of waterways, but many of them are intermittent. For miles of routes in floodplains, refer to Table 3.7. Spring runoff and brief, intense late-summer storms control the hydrologic conditions of the TMA. Stormwater and runoff have been intersected and channeled by travel route construction or creation. These intersections reroute stormwater and runoff during precipitation events and seasonal snowmelt, transporting sediment and deposits that could impair water quality in waterways (e.g., saline-laden soil).

Named streams in the TMA include Antelope Valley Wash (intermittent), Barrier Creek (perennial), and Dugout Creek (intermittent). Approximately 37 miles of the perennial San Rafael River flow through the TMA with about 18 of those miles on BLM-managed lands within the TMA (USGS 2019). The San Rafael River is considered impaired by the Utah Division of Water Quality (UDWQ) and does not meet state water quality standards; but it is undergoing active restoration. The San Rafael River is impaired by total dissolved solids (TDS) (USU 2013) and a Total Maximal Daily Load (TMDL) has been developed by UDWQ. TDS are “all inorganic substances contained in water that can pass through a 2-micron filter” (UW 2008). The river also has elevated salinity (USU 2013). 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. Approximately 73 miles of the Green River (a major perennial waterway and a Water of the U.S.) form the eastern boundary of the TMA (USGS 2019). Of the 2,447 acres of wetlands on BLM-managed lands within the TMA, approximately 2,409 acres are riverine, approximately 30 acres are freshwater pond, and approximately 8 acres are freshwater emergent wetland (USFWS 2019c).

Approximately 3,365 acres of riparian areas exist on BLM-managed lands within the TMA, and approximately 110.1 miles (9.3% of the network) occur in or within ¼ mile of riparian areas. Riparian areas occur along waterways and near other water sources. Map 3 from the 2008 RMP (BLM 2008c) shows riparian habitat locations in the PFO, including the TMA. Most TMA riparian areas are along the San Rafael and Green Rivers. Riparian habitats are vulnerable to

management action impacts and these habitats are used as watershed condition and land health indicators. The 2008 RMP specifies no surface disturbance within 100 meters of riparian areas, floodplains, streams, and a 200-meter distance surrounding springs (BLM 2008c). During high-flow periods, the erosion of saline soils (e.g., the Mancos shale in the northern part of the TMA) can be a major contributor to salinity problems in waterways.

Past travel route creation and use in the TMA have altered hydrologic conditions in the area including route compaction which alters water infiltration and runoff rates and stream, wash, or floodplain intersection which alters runoff paths. Runoff during precipitation events and seasonal snowmelt transports natural salinity and sediment that could impair water quality into waterways. The stormwater can also carry pollutants from vehicles including heavy metals from brakes, engine wear, and hydrocarbons from lubricating fluids. Some routes in the TMA may be subject to National Pollutant Discharge Elimination Systems under section 402 of the Clean Water Act (EPA 2017).

3.2.3.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

Potential effects that use of the alternative travel networks would have on hydrologic conditions, streams, riparian and wetlands, floodplains, surface water, and waters of the U.S. include continued altered streamflow, erosion and sedimentation, or transport of pollutants and contaminants from the route to downstream waters. Another effect is compaction of soils from travel and maintenance activities which can lead to breakdown of vegetation capillary action and drying up or dusting of wetlands and riparian vegetation. OHV use during wet periods or in washes and streams can result in surface rutting and head cutting that can concentrate and accelerate water flow, erosion, and sediment transport, thereby reducing water quality. Such erosion and head-cutting can result in channel incision and lowering of the water table, ultimately causing streams to lose access to their floodplains.

Designations that limit, decommission, or reclaim closed routes on or near waterways, riparian areas, and wetlands can reduce or stop the perpetuation of the effects described above. For instance, “Limited to authorized use only” (i.e., closed to public OHV use) can minimize OHV-related effects in aquatic areas while affording access for monitoring and improvement activities.

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

The UDWQ Total Maximum Daily Load states the primary factors in increased TDS in the San Rafael watershed are from agricultural irrigation practices, surface runoff, and natural geological loadings. Best management practices (BMPs) recommended by the TMDL for the San Rafael River from the confluence with the Green River to Buckhorn Crossing include closing trails/routes that are eroded and limiting OHV use to non-sensitive areas away from streams. Alternatives B-D will close some routes to OHV use that are proximate to streams and riparian areas (total mileage varies by alternative). Therefore, all alternatives will comply with recommended BMPs and reduce TDS loading in the San Rafael River, which in turn may improve the OE (observed/expected) bioassessment that is also a listed cause of impairment by UDWQ. The OE bioassessment is an evaluation of the aquatic macroinvertebrates in the stream. It compares the observed assemblage to the expected. This bioassessment may improve because some aquatic invertebrates are sensitive to TDS; therefore, any action that may reduce TDS has the potential to improve macroinvertebrate assemblages.

Impact Indicators

Tables 3.4 and 3.5 inform the effects analysis. The miles of evaluated routes by designation, per alternative, in or within ¼ mile of intermittent or perennial streams and the miles in or within ¼ mile of riparian/wetland habitat are indicators of each alternative’s potential to affect hydrologic conditions, streams, riparian and wetlands, floodplains, surface water, and waters of the U.S.

Table 3.4: Miles of Routes in or within ¼ Mile of Intermittent or Perennial Streams
(the far-left column notes the miles and percentages of total evaluated routes in or within ¼ mile of streams)

Designation		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Intermittent stream (679.1 miles; 57.5% of Evaluated Routes)	OHV-Open	154.1	22.7%	180.7	26.6%	367.5	54.1%	428.3	63.1%
	OHV-Limited	0.0	0.0%	4.7	0.7%	74.8	11.0%	80.3	11.8%
	OHV-Closed	0.0	0.0%	493.6	72.7%	236.8	34.9%	170.4	25.1%
	Other Evaluated Routes	524.9	77.3%	-	-	-	-	-	-
Perennial stream (2.2 miles; 0.2% of Evaluated Routes)	OHV-Open	0.2	10.5%	0.2	10.5%	0.3	12.7%	0.3	12.7%
	OHV-Limited	0.0	0.0%	0.0	0.0%	0.0	0.0%	1.6	70.7%
	OHV-Closed	0.0	0.0%	2.0	89.5%	1.9	87.3%	0.4	16.6%
	Other Evaluated Routes	2.0	89.5%	-	-	-	-	-	-

Table 3.5: Miles of Routes in or within ¼ Mile of Riparian Areas

(the far-left column notes the miles and percentages of total evaluated routes in or within ¼ mile of riparian areas)

Designation		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Riparian / Wetland Habitat (110.1 miles; 9.3% of Evaluated Routes)	OHV-Open	33.4	30.3%	31.1	28.2%	67.8	61.6%	81.5	74.0%
	OHV-Limited	0.0	0.0%	0.0	0.0%	14.7	13.3%	12.6	11.4%
	OHV-Closed	0.0	0.0%	79.0	71.8%	27.5	25.0%	16.0	14.5%
	Other Evaluated Routes	76.7	69.7%	-	-	-	-	-	-

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions, and absent comprehensive travel route designations that consider aquatic areas and water quality, this alternative would not provide for reduction or minimization of OHV use-related effects to intermittent or perennial streams and riparian/wetland habitat.

Alternative B

Under Alternative B, over 493 miles, or 72.7%, of evaluated routes in or within ¼ mile of an intermittent stream would be designated OHV-closed. Two miles, or 89.5%, of evaluated routes in or within ¼ mile of a perennial stream would be designated as OHV-closed. Additionally, 79 miles, or 71.8%, of evaluated routes in or within ¼ mile of a riparian/wetland habitat would be designated as OHV-closed. The closure of these routes would likely reduce OHV use-related effects to water quality within the TMA. Overall, Alternative B would present the greatest amount of route closures in or within ¼ mile of riparian areas, and would likely have the greatest reduction of OHV use-related effects on surface water and water quality when compared to Alternatives A, C, and D.

Alternative C

Under Alternative C, 236.8 miles (34.9%) of evaluated routes in or within ¼ mile of an intermittent stream would be designated OHV-closed. 1.9 miles (87.3%) of evaluated routes in or within ¼ mile of a perennial stream would be designated as OHV-closed. Additionally, 27.5 miles (25.0%) of evaluated routes in or within ¼ mile of a riparian/wetland habitat would be designated as OHV-closed. The closure of these routes would likely reduce OHV use-related effects to water quality within the TMA. Overall, Alternative C would likely have a greater reduction of OHV use-related effects on surface water and water quality when compared to Alternatives A and D, but a lesser reduction than Alternative B.

Alternative D

Under Alternative D, 170.4 miles (25.1%) of evaluated routes in or within ¼ mile of an intermittent stream would be designated OHV-closed. 0.4 miles (16.6%) of evaluated routes in or within ¼ mile of a perennial stream would be designated as OHV-closed. Additionally, 16.0 miles (14.5%) of evaluated routes in or within ¼ mile of a riparian/wetland habitat would be designated as OHV-closed. The closure of these routes would likely reduce OHV use-related effects to water quality within the TMA. Overall, Alternative D would likely have a greater

reduction of OHV use-related effects on surface water and water quality when compared to Alternative A, but a lesser reduction than Alternatives B and C.

Cumulative Effects

The geographic scope of cumulative effects analysis (i.e., the cumulative effects analysis area) for water quality, riparian areas, and wetlands includes the HUC 10 watersheds encompassing the TMA¹⁰ and the Green River from Interstate 70 downstream to its confluence with the Colorado River. This boundary was chosen because water quality cumulative effects is usually analyzed at the project area level plus the watershed scale down to the next largest confluence, which is the confluence of the Green River and the Colorado River. It is recognized that actions upstream could be affecting conditions in the TMA, but decisions in this project will not have an upstream effect. Past, present, and reasonably foreseeable actions, plans, or projects impacting water quality in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers. Ongoing seasonal snowmelt runoff and monsoon events on disturbed areas in the watershed also deliver sediment and add to water quality impairment.

Cumulative effects from soil displacing or compacting and water-redirecting activities lead to surface erosion, sedimentation, head cutting and delivery of contaminants to waterways and riparian, wetlands, and other surface waters resulting in water quality impairment; and decreases in riparian and wetland health. Redirection of surface water or compaction can result in soil desiccation and riparian vegetation dusting or destruction.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions. OHV use patterns of the network would remain unchanged, and an overall incremental change to water quality, wetlands, and riparian areas within the cumulative effects analysis area is not anticipated.

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to water quality, wetlands, and riparian areas by closing and/or limiting a number of evaluated routes in highly erosive and sensitive soils. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to water resources.

¹⁰ Cottonwood Wash (114,940 acres), Dugout Creek (58,888 acres), Horseshoe Canyon (88,400 acres), Iron Wash (130,303 acres), Lost Spring Wash-Saleratus Wash (136,333 acres), Lower San Rafael River (247,444 acres), Moonshine Wash (95,697 acres), Outlet Muddy Creek (144,413 acres), Robbers Roost Canyon (53,173 acres), Salt Wash-Green River (157,692 acres), Taylor Canyon-Green River (188,392 acres), and Upper Dirty Devil River (103,284 acres) comprising 1,518,959 acres

Summarily, there would be no cumulative increase to water quality, wetland, or riparian impacts within the cumulative effects analysis area from OHV travel under any action alternative.

3.2.4 Fish

How would the alternatives minimize effects on ESA-listed and native fish species in the TMA?

3.2.4.1 Affected Environment

The San Rafael River and Green River are the only perennial waters in or near the TMA and these waters support a variety of fish. Fish species below are listed under the Endangered Species Act (ESA) and have the potential to occur in the TMA. Habitat for these listed species has been modified by threats “to the extent that it impairs essential behavior patterns, such as breeding, feeding, and sheltering” (USFWS 2008a). Within the TMA, the Green River and its floodplain provides critical habitat for ESA-listed fish, and the San Rafael River is known to support the ESA-listed fish. Stream crossings have a different impact to fish species and their habitats than routes outside the stream bed, so the number of crossings was used to assess impacts. There are 0.26 miles of existing routes within the Green River Floodplain, and no bridges or fords. The analysis of effects of routes on the fish species also focuses on the routes within the mapped Area of Impact (AOI). The AOI encompasses the important riparian habitats for the fish in the San Rafael and Green Rivers and was sourced from USFWS Information for Planning and Consultation (IPaC) system. The AOI is the same area for all four listed fish species. There are 29.2 miles of existing routes within the AOI, and one bridge crossing and one ford crossing.

Details on habitat, threats, and trends for the fish discussed below 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 2008b, pages 3-36 to 3-59), and NatureServe Explorer (NSE 2019). Additional habitat/threat/trend information sources are listed under each species.

- Bonytail chub (*Gila elegans*) – Endangered: The bonytail chub is a large fish species endemic to the large rivers of the Colorado River Basin. Within the TMA, Bonytail chub inhabit the Green River (BLM 2008b) and San Rafael River. This species has been moving into and out of the San Rafael River (USU 2013). Bonytails have dispersed into the San Rafael River from release sites in the Colorado or Green rivers and likely made greater use of the river historically. Critical habitat occurs in the Green River about 9 miles north of the TMA and in the Colorado River about 24 miles south of the TMA (DOI 2018a). For more details on habitat, threats, and trends, see Arizona Ecological Services (USFWS 2009) and page viii of Bonytail (*Gila elegans*) Recovery Goals: Amendment and Supplement to the Bonytail Chub Recovery Plan (USFWS 2002a).
- Colorado pikeminnow (*Ptychocheilus lucius*) – Endangered: Designated critical habitat for this species spans the approximately 4,026 acres of the Green River that form the eastern boundary of the TMA (DOI 2018b). This species has also been moving into and out of the San Rafael River (USU 2013). The Colorado pikeminnow is known to occur in the Green River (from Lodore Canyon to the Colorado River confluence) and is also known to occur in the San Rafael River from 2.8 miles downstream of the Hatt Ranch diversion to the Green River confluence. 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 2011a).

- Humpback chub (*Gila cypha*) – Endangered: In Utah, humpback chub occur in a few whitewater areas of the Green River (BLM 2008b). Designated critical habitat occurs in the Green River about 9 miles north of the TMA and in the Colorado River about 24 miles south of the TMA (DOI 2018c). Humpback chub may utilize the Green River in the eastern boundary of the TMA. That section of the river is part of a proposed management unit (CSU 2007). For more details on habitat, threats, and trends, see pages 3 to 11 of Humpback Chub (*Gila cypha*) 5-Year Review: Summary and Evaluation (USFWS 2018a).
- Razorback sucker (*Xyrauchen texanus*) – Endangered: The razorback sucker is an endemic fish species to the Colorado River System, including the Green River. In the TMA, the razorback sucker has been recorded in the San Rafael and Green Rivers. For more details on habitat, threats, and trends see the Species Status Assessment for the Razorback Sucker *Xyrauchen texanus* (USFWS 2018b). Designated critical habitat for this species includes approximately 73 miles of the Green River that forms the eastern boundary of the TMA (DOI 2018e). This species has also been moving into and out of the San Rafael River (USU 2013).

Though not ESA-listed, bluehead sucker (*Catostomus discobolus*), flannelmouth sucker (*Catostomus latipinnis*), and roundtail chub (*Gila robusta*) are native fish species that exist in the TMA and were considered during route evaluation. All three are BLM sensitive and part of a range-wide conservation agreement (BLM 2011). These fish exist in the lower San Rafael River at low densities and are thought to occur only as a result of immigration from the upper San Rafael River and the Green River. These species also occur in the portions of the Green River in the TMA. For details on habitat, threats, and trends for these 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). For details on non-fish species dependent on waterways and riparian areas, see sections 3.2.7-3.2.8.

3.2.4.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

The direct and indirect effects common to all alternatives are the same for fish habitat as they are for water quality, riparian areas, and wetlands because all TMA fish and habitat is dependent on water quality, riparian area and wetland health. For more details on these effects, see section 3.2.3.

Potential effects that use of the travel route networks would have on ESA-listed fish species include habitat modification from continued erosion and sedimentation from routes in/near aquatic areas resulting in impairment of water quality and alteration of water levels and fish passage. Also, compaction of riparian and wetland soils from OHV travel and maintenance activities can cause reduced infiltration, breakdown of vegetation capillary action, and drying up or dusting of wetlands and riparian areas. OHV use and maintenance activities can disturb surfaces, increasing sedimentation, salinity, and contaminant delivery to streams which affects their ability to function properly and support fish. OHV use during wet periods, particularly in

washes or streams, can result in surface rutting or head-cutting that can concentrate and accelerate water flow, erosion, and sediment transport, thereby reducing water quality. Such erosion and head-cutting can lead to channel incision and subsequent lowering of the water table, ultimately causing streams to lose access to their floodplains.

Designations that limit, decommission, or reclaim closed routes on or near waterways, riparian areas, and wetlands can reduce or stop the perpetuation of the effects described above by reducing or eliminating OHV use, or limiting the size of the OHV.

TMP implementation activities that could affect ESA-listed fish species include route maintenance (i.e., surface and ditch blading, drainage structure installations, etc.), ripping and seeding of closed routes, and sign placement (digging post holes). These effects are likely to be temporary because they occur infrequently, and only last until the soils stabilize. Some of the activities listed above and other implementation activities would have a positive effect on water resources. For example, sign placement could encourage managed travel on stable designated routes less disruptive to waterways; drainage structures installed at appropriate intervals and locations (i.e., with adequate buffer areas at outlets) could help minimize route-related erosion and sediment transport into waterways; and seeding and planting of closed routes could help reestablish native vegetation communities, thereby improving the soils' resiliency to water impairment-related erosion. Alternatives B-D are likely to benefit endangered fish due to the closing of existing routes as well as the low number of travel routes in each network that are in proximity to the Green and San Rafael Rivers.

Impact Indicators

The miles of evaluated routes within the mapped Area of Impact (AOI), which is the same area for all four listed fish species, were used as indicators of impacts to ESA-listed fish. AOI data was sourced from the USFWS IPaC system. Because stream crossings have a greater impact to fish species and their habitats than evaluated routes outside the stream bed, the number of crossings was also used to assess impacts.

Tables 3.6, 3.7, and 3.8 inform the effects analysis. The miles of designated evaluated routes, by proposed alternative, within mapped AOI of ESA-listed fish, within the Green River Floodplain, and the number of stream crossings in AOI and critical habitat are indicators of each alternative's potential to minimize effects on ESA-listed and native fish species in the TMA.

Table 3.6: Miles of Routes within Mapped AOI of ESA-Listed Fish in the TMA
(the far-left column notes the miles and percentages of total evaluated routes within AOI)

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
ESA-Listed Fish (29.22 miles; 2.5% of Evaluated Routes)	Open to OHV in AOI	9.40	32.2%	10.25	35.1%	23.22	79.5%	26.87	92.0%
	Closed to OHV in AOI	0.00	0.0%	18.97	64.9%	6.00	20.5%	2.35	8.0%
	Other Evaluated Routes in AOI	19.82	67.8%	-	-	-	-	-	-

Table 3.7: Miles of Routes within the Green River¹¹ Floodplain (Critical Habitat)
 (the far-left column notes the miles and percentages are out of total evaluated route miles within floodplain)

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Green River Floodplain (0.26 miles; 0.02% of Evaluated Routes)	Open to OHV in Floodplain	0.01	3.8%	0.24	92.3%	0.26	100%	0.26	100%
	Closed to OHV in Floodplain	0.00	0.0%	0.02	7.7%	0.00	0.0%	0.00	0.0%
	Other Evaluated Routes in Floodplain	0.25	96.2%	-	-	-	-	-	-

Table 3.8: Number of Stream Crossings in AOI and Critical Habitat

		Alt. A	Alt. B	Alt. C	Alt. D
Designation		Miles	Miles	Miles	Miles
Stream Crossings Open in AOI		1 (bridge)	2 (1 bridge, 1 ford)	2 (1 bridge, 1 ford)	2 (1 bridge, 1 ford)
Stream Crossings Closed in AOI		0	0	0	0
Other Evaluated Route Stream Crossings in AOI		1 (ford)	0	0	0
Stream Crossings Open in Critical Habitat		0	0	0	0
Stream Crossings Closed in Critical Habitat		0	0	0	0

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions and would not reduce or minimize OHV use-related effects to ESA-listed and native fish species in the TMA.

Alternative B

Under Alternative B, 18.97 miles (64.9%) of evaluated routes within the fish AOI are designated OHV-closed; 0.02 miles (7.7%) of evaluated routes within the Green River floodplain (critical habitat) are designated OHV-closed; and 2 stream crossings in AOI (a bridge and a ford) are included on designated OHV-open routes. These designations would likely reduce OHV use-related effects on ESA-listed and native fish species in the TMA. Overall, Alternative B would present the greatest number of route closures and likely have the greatest reduction of OHV use-related effects on ESA-listed and native fish species in the TMA when compared to Alternatives A, C, and D.

Alternative C

Under Alternative C, 6.0 miles (20.5%) of evaluated routes within the fish AOI are designated OHV-closed; 0 miles (0%) of evaluated routes within the Green River floodplain (critical habitat) are designated OHV-closed; and 2 stream crossings in AOI (a bridge and a ford) are included on designated OHV-open routes. These designations would likely reduce OHV use-related effects on ESA-listed and native fish species in the TMA. Overall, Alternative C would

¹¹ The San Rafael River floodplain is not included in this table because it is not designated critical habitat. However, the San Rafael River habitat is accounted for in the AOI table.

result in a reduction of OHV use-related effects on ESA-listed and native fish species in the TMA to a greater degree than Alternatives A and D, but to a lesser degree than Alternative B.

Alternative D

Under Alternative D, 2.35 miles (8.0%) of evaluated routes within the fish AOI are designated OHV-closed; 0 miles (0%) of evaluated routes within the Green River floodplain (critical habitat) are designated OHV-closed; and 2 stream crossings in AOI (a bridge and a ford) are included on designated OHV-open routes. These designations would likely reduce OHV use-related effects on ESA-listed and native fish species in the TMA. Overall, Alternative D would result in a reduction of OHV use-related effects on ESA-listed and native fish species in the TMA to a greater degree than Alternative A, but to a lesser degree than Alternatives B and C.

Based upon the effects described above and detailed in the Biological Assessment, the BLM determined the proposed action *May Affect* but is *Not Likely to Adversely Affect* the bonytail chub, Colorado pikeminnow, humpback chub, or razorback sucker and their designated critical habitat. The USFWS concurred with this determination in the BO dated May 14, 2020.

Cumulative Effects

The geographic scope of cumulative effects analysis (i.e., the cumulative effects analysis area) includes the HUC 10 watersheds encompassing the TMA¹² and the Green River from Interstate 70 to its confluence downstream with the Colorado River. This boundary was chosen because water quality cumulative effects are usually analyzed at the project area level plus the watershed scale down to the next largest confluence, which is the confluence of the Green River and the Colorado River. It is recognized that actions upstream could be affecting conditions in the TMA, but decisions in this project will not have an upstream effect.

Past, present, and reasonably foreseeable actions, plans, or projects impacting fish in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers. Recurrent seasonal snowmelt runoff and monsoon events also deliver sediment and add to water quality impairment.

Cumulative effects from soil displacing or compacting and water redirecting activities lead to surface 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

¹² Cottonwood Wash (114,940 acres), Dugout Creek (58,888 acres), Horseshoe Canyon (88,400 acres), Iron Wash (130,303 acres), Lost Spring Wash-Saleratus Wash (136,333 acres), Lower San Rafael River (247,444 acres), Moonshine Wash (95,697 acres), Outlet Muddy Creek (144,413 acres), Robbers Roost Canyon (53,173 acres), Salt Wash-Green River (157,692 acres), Taylor Canyon-Green River (188,392 acres), and Upper Dirty Devil River (103,284 acres) comprising 1,518,959 acres

destruction. These impacts result in fish habitat degradation including water quality impairment and decreases in riparian and wetland health.

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

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to fish habitat by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to fish habitat. Summarily, there would be no cumulative increase to fish habitat impacts within the cumulative effects analysis area from OHV travel under any action alternative.

3.2.5 Native Vegetation and Invasive Plants/Noxious Weeds

How would the alternatives minimize effects to native vegetation and affect the germination and spread of invasive plants and noxious weeds?

3.2.5.1 Affected Environment

Map 4 in the 2008 RMP (BLM 2008c) shows vegetation cover types in the PFO and depicts the TMA as having primarily grass-like and desert brush vegetation cover with some non-vegetation regions. All 1,180.8 miles of the evaluated routes are in these vegetation types. For details on special status plants in the TMA, see section 3.2.6.

The TMA contains two areas of critical environmental concern (ACECs) for which relict vegetation comprises relevant and important values (BLM 2008b). These ACECs are Big Flat Tops (192 BLM acres in the TMA; contains no routes but is within 0.5 miles of network routes) and Bowknot Bend (1,087 BLM acres in the TMA; contains no routes, but one route is immediately outside of its western edge). For more information on these ACECs, see page 3-87 of the Price Proposed RMP/EIS (BLM 2008b). The 2008 RMP closed these areas to OHV use to protect relict vegetation (BLM 2008b). Since no routes exist there, and no routes will be constructed there, no impact from route designation will occur and they are not carried forward for further discussion in this EA.

The TMA contains small isolated patches of noxious weeds and widespread invasive species (mainly located along routes and trails). Of the 1,136 routes in the TMA, 934 routes (82.2% of the network) are in or within ¼ mile of areas with invasive vegetation. 171 routes (15.1% of the network) are in or within ¼ mile of areas with noxious weeds. Waterways in the TMA also provide corridors for weed establishment and spread. The Emery County Weed Board identified the Russian olive (*Elaeagnus angustifolia*) as noxious in Emery County. Extensive tamarisk (*Tamarix ramosissima*) and Russian olive infestations exist along the San Rafael and Green Rivers in the TMA, resulting in vegetation communities far removed from their natural riparian vegetation state. Occurrences of Russian knapweed (*Acroptilon repens*), camelthorn (*Alhagi maurorum*), and Ravenna grass (*Saccharum ravennae*) have reached high levels in river

corridors adjacent to the TMA. San Rafael River restoration efforts have removed extensive tamarisk stands from the TMA, but re-sprouts and secondary weeds are a concern. Additional invasive plants and noxious weeds in the TMA include cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomeratus*), and Russian thistle (*Salsola tragus*). For more information on invasive plants and noxious weeds in the PFO's jurisdiction, see pages 3-22 to 3-24 of the Price Proposed RMP/EIS (BLM 2008b). Travel routes provide access for authorized invasive species and weed monitoring and treatment activities.

3.2.5.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

Potential effects on native vegetation from use of any of the alternative route networks include crushing or damage of native vegetation from travel-related disturbance (driving on partially vegetated routes, roadside parking and camping, etc.) as well as general loss of plants and loss of health and vigor from travel-related dusting and disturbance along routes. Use of route networks may also contribute to competition/displacement of native vegetation from the growth and spread of invasive plants and noxious weeds, many of which thrive in disturbed areas. OHVs can serve as vectors for weeds along travel routes through transport of weed seeds or plant parts on OHV frames and tires.

TMP implementation activities that could affect native vegetation include route maintenance (surface and ditch grading and drainage structure replacement or installation, etc.) ripping and seeding closed routes, and sign placement (digging post holes). Seeding and planting on closed routes could accelerate reclamation and help to reestablish native vegetation communities. If implementation is proposed that requires new surface disturbance, additional site specific NEPA would be required before the activity could occur.

Route networks with open or limited designations can contribute to the introduction and spread of invasive plants and noxious weeds, displacing native species and disrupting proper ecosystem functions. Conversely, closed or limited designations that prohibit OHV use wholly or in part can reduce the potential for the spread of invasive and noxious plants, thereby benefitting native vegetation species by limiting or eliminating OHV travel.

Impact Indicators

Table 2.1 (repeated below from Chapter 2) summarizes overall evaluated route mileage designations by alternative and was used to inform analysis because native vegetation and invasive and noxious plants occur throughout the entire TMA. Moreover, Table 3.9 below was used to inform effects analysis from OHV use in or near invasive plants and noxious weeds. Often, the same routes are associated with both invasive vegetation and noxious weeds. Overall evaluated route mileage designations and numbers of routes in or within ¼ mile of invasive plants and noxious weeds were used as indicators of the networks' potential effects on native vegetation. Overall TMA numbers of routes in or within ¼ mile of invasive plants and noxious weeds were used as indicators of the alternative's potential effects on weeds.

Table 2.1: Miles of Routes by Designation and Alternative

(the far-left column notes the miles and 1,180.8 total evaluated route miles; percentages are % of total evaluated miles)

Designation	Alt. A		Alt. B		Alt. C		Alt. D		
	Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent	
All Routes (1180.8 miles; 100% of Evaluated Routes)	OHV-Open	302.6	25.6%	331.9	28.1%	636.3	53.9%	746.8	63.3%
	OHV-Limited	0.0	0.0%	5.4	0.5%	119.6	10.1%	120.5	10.2%
	OHV-Closed	0.0	0.0%	843.3	71.4%	424.8	36.0%	313.3	26.5%
	Other Evaluated Routes	878.0	74.4%	-	-	-	-	-	-

Table 3.9: Number of Routes in or within ¼ Mile of Invasive Plant or Noxious Weed Areas

(the far-left column notes the percentages of total evaluated routes associated with plants noted in far-left column)

Designation	Alt. A		Alt. B		Alt. C		Alt. D		
	Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent	
Invasive Plants (934 routes; 82.2% of Evaluated Routes)	OHV-Open	132	14.1%	115	12.3%	353	37.8%	465	49.8%
	OHV-Limited	0	0.0%	3	0.3%	43	4.6%	43	4.6%
	OHV-Closed	0	0.0%	816	87.4%	538	57.6%	426	45.6%
	Other Evaluated Routes	802	85.9%	-	-	-	-	-	-
Noxious Weeds (171 routes; 15.1% of Evaluated Routes)	OHV-Open	36	21.1%	43	25.1%	90	52.6%	112	65.5%
	OHV-Limited	0	0.0%	3	1.8%	19	11.1%	21	12.3%
	OHV-Closed	0	0.0%	125	73.1%	62	36.3%	38	22.2%
	Other Evaluated Routes	135	78.9%	-	-	-	-	-	-

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions and would not reduce OHV use-related effects to native vegetation nor help minimize OHV use-related spread of invasive plants and noxious weeds.

Alternative B

Under Alternative B, 843.3 miles (71.4%) of the 1,180.8 miles of evaluated routes in the TMA’s native plant communities would be designated as OHV-closed; 816 evaluated routes (87.4%) within ¼ mile of invasive plant areas would be designated as OHV-closed; and 125 evaluated routes (73.1%) within ¼ mile of noxious weed areas would be designated as OHV-closed. Overall, Alternative B would result in the greatest number of routes and miles being designated as OHV-closed, including in invasive plant and noxious weed areas. Alternative B would minimize OHV use-related impacts to native plants and help reduce OHV-use related spread of invasive plants and noxious weeds to a greater degree than Alternatives A, C and D.

Alternative C

Under Alternative C, 424.8 miles (36.0%) of the 1,180.8 miles of evaluated routes in the TMA’s native plant communities would be designated as OHV-closed; 538 evaluated routes (57.6%) within ¼ mile of invasive plant areas would be designated as OHV-closed; and, 62 evaluated

routes (36.3%) within ¼ mile of noxious weed areas would be designated as OHV-closed. Alternative C would minimize OHV use-related impacts to native plants and help reduce OHV-use related spread of invasive plants and noxious weeds to a greater degree than Alternatives A and D, but to a lesser degree than Alternative B.

Alternative D

Under Alternative D, 313.3 miles (26.5%) of the 1,180.8 miles of evaluated routes in the TMA's native plant communities would be designated as OHV-closed; 426 evaluated routes (45.6%) within ¼ mile of invasive plant areas would be designated as OHV-closed; and, 38 evaluated routes (22.2%) within ¼ mile of noxious weed areas would be designated as OHV-closed. Alternative D would minimize OHV use-related impacts to native plants and help reduce OHV-use related spread of invasive plants and noxious weeds to a greater degree than Alternative A, but to a lesser degree than Alternatives B and C.

Cumulative Effects

The geographic scope of cumulative effects analysis for native vegetation and invasive and noxious weeds is the TMA as well as the Green River 5 miles downstream from the TMA boundary. This geographic scope was chosen because direct effects to native vegetation are restricted to the native vegetation populations that are within the TMA where the route use occurs and because it contains the area's most common vectors for transporting weed seed (vehicles, livestock, and waterways). Past, present, and reasonably foreseeable actions, plans, or projects impacting native vegetation in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers.

Cumulative effects from past, present, and reasonably foreseeable projects on native vegetation include dusting, crushing or damage of plants from livestock or wildlife grazing, travel or bedding and roadside camping or parking, and spread of noxious weeds and invasive species from wildlife, livestock, or vehicle travel.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be 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 do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to native vegetation by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to native vegetation. Summarily, there would be no cumulative increase to native

vegetation impacts within the cumulative effects analysis area from OHV travel under any action alternative.

3.2.6 Special Status Plants

How would the alternatives minimize potential effects to special status plants and their habitats?

3.2.6.1 Affected Environment

Details on habitat, threats, and trends for the ESA-listed species as well as the BLM sensitive species listed below in this section can be found in a Biological Resource Evaluation developed by Price BLM resource staff (Appendix J), the “Special Status Species” section of the Price Proposed RMP/EIS (BLM 2008b, pages 3-36 to 3-49), and NatureServe Explorer (NSE 2018-2019). The biological evaluation also notes when species are present in the TMA and when they are narrow endemics. All species below have at least the potential to occur in the TMA. Details on habitat and threats for the Jones cycladenia and Wright fishhook cactus can be found in the “Species Accounts, Effects, and Conclusions” section of the 2008 RMP Biological Opinion (USFWS 2008a, pages 20-148). When applicable, additional habitat/threat/trend information sources are listed under each species.

The San Rafael Desert was subject to a 15-year study which reported 333 species of bee. A quarter of the bee species are endemic to the Colorado Plateau, and many have been found only in the San Rafael Desert. It’s believed not all San Rafael Desert bee species were identified in that study (Griswold, Parker, and Tepedino 1998). Davidson et al. in “Selecting Wilderness Areas to Conserve Utah’s Biological Diversity” estimated that the San Rafael Desert, which is approximately 2.0% of Utah by land area, is habitat for approximately 33% of Utah’s bee species and 84% of Utah’s known but undescribed bee species. The shifting dunes of the San Rafael Desert are also home to a diverse assembly of predatory, soil nesting, Sphecid wasps (*Philanthus* spp.). This diversity results from a variety of factors including soil substrates suitable for ground-nesting and a diverse plant community. In the San Rafael Desert, around one-third of all bee species in the San Rafael Desert pollinate flowers from only one specific plant family, often preferring a single genus, and, occasionally, evolving to a level of specialization where the bee seeks out only a single species of plant for pollen and nectar provisioning. Declines in specialist pollinator populations occur most frequently in those species with specialized habitat and floral resource requirements (Winfrey et al. 2009). Declines in pollinator populations are then mirrored by declines in the populations of the plants reliant on their pollination services (Biesmeijer et al. 2006, Hadley and Betts 2011, Huang and D’Odorico 2020). In recognition of the importance of plants to pollinators and pollinators to plants, this EA assumes that the presence of and impacts to endemic pollinator habitat are equivalent to the presence of and impacts to the special status plant species and their habitats described below.

Habitat for the following ESA-listed plants has been found in the TMA:

- Barneby reed-mustard (*Schoenocrambe barnebyi*) – Endangered: Barneby reed-mustard cactus is endemic to central Utah. No occupied habitat has been identified within the TMA. Two populations of *S. barnebyi* are known, one on BLM lands near the Muddy Creek in the southern portion of the San Rafael Swell and one in Capitol Reef National Park. The majority of the known occupied sites are on cool, steep, north-facing slopes, along mid- or upper-slopes in pinyon pine/juniper communities. For this project, the

defined AOI represents Barneby reed-mustard potential habitat and covers 30,842 acres throughout the far western portions of the TMA (BLM 2020, Appendix C, Map 13). This habitat has not had surveys performed during the appropriate period for identification. Therefore, for the purposes of this analysis all the identified potential habitat is assumed to be occupied. Approximately 93.5 miles of routes are in or within 300 feet of this habitat. For more details on habitat and threats, see Utah Reed-Mustards: Clay Reed-Mustard (*Schoenocrambe arigllaceae*) Barneby Reed-Mustard (*Schoenocrambe barnebyi*) Shrubby Reed-Mustard (*Schoenocrambe suffrutescens*) Recovery Plan (USFWS 1994b) and *Schoenocrambe barnebyi* (Barneby Reed-Mustard) 5-Year Review (USFWS 2011b).

Table 3.10: Miles of Routes in or within 300 Feet of Barneby Reed-Mustard Habitat and Acres of Modeled Habitat Affected by Route Miles

(the far-left column notes the miles and percentages derived of total evaluated route miles within habitat and total acres of modeled habitat)

Barneby reed-mustard		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Miles in Habitat: 93.5 miles (7.9% of Evaluated Routes)	OHV-Open + Limited	44.7	47.8%	39.6	42.4%	71.4	76.4%	81.5	87.2%
	OHV-Closed	0	0	54.0	57.8%	22.1	23.6%	12.0	12.8%
	Other Evaluated Routes	48.8	52.2%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 30,842	OHV-Open + Limited	2196.1	7.1%	1890.6	6.2%	3905.1	12.7%	4550.9	14.8%
	OHV-Closed	0	0	3221.5	10.4%	1207.1	3.9%	561.2	1.8%
	Other Evaluated Routes	2916.0	9.5%	-	-	-	-	-	-

- Jones Cycladenia (*Cycladenia humilis* var. *jonesii*) – Threatened: Jones cycladenia is a long-lived clonally reproducing perennial species found within the Colorado Plateau ecoregion. The species grows on steep, gypsiferous, saline soils. No populations of the species have been located within the TMA, but modeled habitat is extensive throughout the TMA, the majority of which has not been surveyed for the species. The nearest occupied habitat is the Hatt Ranch/Greasewood Draw population, located approximately 1.4 miles to the west of the TMA. As the majority of modeled habitat has not been surveyed, for purposes of this analysis all modeled habitat is assumed to be occupied. Approximately 686 miles of routes are in or within 300 feet of Jones cycladenia modeled habitat, derived from elevations between 4,000’ and 6,000’ and the Chinle and Summerville geologic formations, which covers approximately 260,119 acres throughout the central and southern portions of the TMA (BLM 2020, Appendix C, Map 10). For details on habitat, threats, and trends see the Recovery Outline for the Jones Cycladenia (USFWS 2008b).

Table 3.11: Miles of Routes in or within 300 Feet of Jones Cycladenia Habitat and Acres of Modeled Habitat Affected by Route Miles

(the far-left column notes the miles and percentages of total evaluated route miles within habitat and total acres of modeled habitat)

Jones cycladenia		Alt. A		Alt. B		Alt. C		Alt. D	
		Designation	Miles	Percent	Miles	Percent	Miles	Percent	Miles
Miles in Habitat: 685.8 (58.1% of Evaluated Routes)	OHV-Open + Limited	183.7	26.8%	167.8	24.5%	396.4	57.8%	470.2	68.6%
	OHV-Closed	0	0	518.0	75.5%	289.4	42.2%	215.5	31.4%
	Other Evaluated Routes	502.1	73.2%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 260,119	OHV-Open + Limited	12698.0	4.9%	11633.5	4.5%	26733.3	10.3%	31357.7	12.1%
	OHV-Closed	0	0	30988.2	11.9%	15888.4	6.1%	11265.2	4.3%
	Other Evaluated Routes	29923.7	11.5%	-	-	-	-	-	-

- Navajo sedge (*Carex specuicola*) – Threatened: Navajo sedge is restricted to sandstone hanging garden communities in northeastern Arizona and southeastern Utah. The nearest known population of the species is approximately 80 miles to the south of the project area. For this project, the “Glen Canyon Group” (Jg) geological unit represents potential Navajo sedge habitat. Within the TMA this potential habitat has not been extensively surveyed and for the purposes of this analysis all modeled habitat is assumed to be occupied. This potential habitat covers approximately 32,963 acres throughout the central and southern portions of the TMA (BLM 2020, Appendix C, Map 11). Approximately 28.0 miles of routes are in or within 300 feet of this habitat. For more details on habitat and threats, see the Natural Resources Conservation Service (NRCS) plant guide on Navajo sedge (NRCS 2011a) and the USFWS ECOS profile on Navajo sedge (USFWS 2019a).

Table 3.12: Miles of Routes in or within 300 Feet of Navajo Sedge Habitat and Acres of Modeled Habitat Affected by Route Miles

(the far-left column notes the miles and percentages of total evaluated route miles within habitat and total acres of modeled habitat)

Navajo sedge		Alt. A		Alt. B		Alt. C		Alt. D	
		Designation	Miles	Percent	Miles	Percent	Miles	Percent	Miles
Miles in Habitat: 28.0 (2.4% of Evaluated Routes)	OHV-Open + Limited	3.5	12.5%	6.7	23.9%	25.1	89.6%	25.9	92.5%
	OHV-Closed	0	0	21.3	76.1%	2.9	10.4%	2.1	7.5%
	Other Evaluated Routes	24.5	87.5%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 32,179	OHV-Open + Limited	189.1	0.6%	331.5	1.0%	1304.4	4.1%	1323.2	4.1%
	OHV-Closed	0	0	1090.3	3.4%	117.4	0.4%	98.6	3.8%
	Other Evaluated Routes	1232.7	3.8%	-	-	-	-	-	-

- San Rafael Cactus (*Pediocactus despainii*) – Endangered: San Rafael cactus is endemic to central Utah. No occupied habitat has been identified within the project area. The closest known populations occur approximately 13.7 miles to the west of project area. Occurs almost exclusively within Emery County, primarily in the central and SE portion. For this project, the defined AOI represents San Rafael cactus potential habitat and covers 242,855 acres throughout the northern and central portions of the TMA (BLM 2020, Appendix C, Map 12). This habitat has not had surveys performed during the appropriate period for identification. Therefore, for the purposes of this analysis all the identified potential habitat is assumed to be occupied. Approximately 811 miles of routes are in or within 300 feet of this habitat. For more details on habitat and threats, see the Winkler cactus (*Pediocactus winkleri*) and San Rafael cactus (*Pediocactus despainii*) Draft Recovery Plan (USFWS 2015c).

Table 3.13: Miles of Routes in or within 300 Feet of San Rafael Cactus Habitat and Acres of Modeled Habitat Affected by Route Miles

(the far-left column notes the miles and percentages of total evaluated route miles within habitat and total acres of modeled habitat)

San Rafael cactus		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Miles in Habitat: 810.7 (68.7% of Evaluated Routes)	OHV-Open + Limited	225.8	27.9%	223.3	27.5%	526.6	64.9%	610.7	75.3%
	OHV-Closed	0	0	587.4	72.5%	284.1	35.0%	200.0	24.7%
	Other Evaluated Routes	584.8	72.1%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 242,855	OHV-Open + Limited	15122.7	6.2%	14885.2	6.1%	34223.0	14.1%	39262.4	16.2%
	OHV-Closed	0	0	34948.2	14.4%	15610.4	6.4%	10570.9	4.4%
	Other Evaluated Routes	34710.7	14.3%	-	-	-	-	-	-

- Ute ladies’-tresses (*Spiranthes diluvialis*) – Threatened: Ute ladies’-tresses is a perennial orchid found in wetlands including along perennial streams and rivers, in groundwater-fed meadows, and along human created wetland systems (USFWS 2005). The range of the species includes Colorado, Nevada, Utah, Idaho, Montana, Nebraska, Washington, Wyoming, and British Columbia. The closest previously identified population is approximately 30 miles to the southeast of the project area. For this project, riparian areas that maintain moisture until July and August represent Ute ladies’-tresses habitat. This habitat was identified from the normalized difference vegetation index calculated from the average mosaic of LandSat 8 images captured in July and August between 2013 and 2019. This remotely identified habitat has not had surveys performed during the appropriate period for identification. Therefore, for the purposes of this analysis all the identified potential habitat is assumed to be occupied. The identified habitat covers approximately 4,192 acres within the TMA (BLM 2020, Appendix C, Map 12). Approximately 3.6 miles of routes are in or within 300 feet of this habitat.

Table 3.14: Miles of Routes in or within 300 Feet of Ute Ladies’-Tresses Habitat and Acres of Modeled Habitat Affected by Route Miles

(the far-left column notes the miles and percentages of total evaluated route miles within habitat and total acres of modeled habitat)

Ute ladies’-tresses		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Miles in Habitat: 3.6* (0.3% of Evaluated Routes)	OHV-Open + Limited	1.1	30.6%	1.1	30.6%	2.9	80.6%	3.3	91.7%
	OHV-Closed	0	0	2.5	69.4%	0.8	21.7%	0.3	8.6%
	Other Evaluated Routes	2.5	69.4%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 4,192*	OHV-Open + Limited	22.7	0.5%	22.8	0.5%	79.8	1.9%	91.6	2.2%
	OHV-Closed	0	0	71.6	1.7%	14.6	0.3%	3.2	0.1%
	Other Evaluated Routes	72.1	1.7%	-	-	-	-	-	-

*Note: During analysis in GIS for the potential effects to Ute ladies’-tresses, approximately 1.6 miles of routes were inadvertently missed due to calculation discrepancies resulting from differences in map projections. The error changed the modeled habitat from 4,192 acres to 2,548 acres. And it changed the miles of routes within modeled habitat and the 300-foot buffer from 3.6 miles to 5.3 miles. Further coordination with USFWS determined that the addition of 1.6 routes within the 300-foot buffer is not expected to affect the species because the additional miles of routes are outside the floodplain and in many cases separated by substantial elevation difference. The additional 1.6 miles of routes determined to be within the 300-foot buffer from the modeled habitat were already considered throughout the EA, and the conservation measures, monitoring, and maintenance activities described in the TMP Implementation Guide were applied.

- Wright fishhook cactus (*Sclerocactus wrightiae*) – Endangered: Wright fishhook cactus is endemic to central Utah. No occupied habitat has been identified within the project area. However, known populations occur approximately 2.5 miles from the southwest corner of the project area. For this project, the “Summerville, Entrada, Carmel, Arapien, Twin Creek and other Formations” (J1) geological unit represents Wright fishhook cactus habitat and covers 105,484 acres throughout the central and southern portions of the TMA (BLM 2020, Appendix C, Map 13). This habitat has not had surveys performed during the appropriate period for identification. Therefore, for the purposes of this analysis all the identified potential habitat is assumed to be occupied. Approximately 340 miles of routes are in or within 300 feet of this habitat. There is also occupied habitat within Wayne and Emery Counties just outside the TMA; thus, there is high potential for Wright fishhook cactus to be in the TMA. For more details on habitat and threats, see the NRCS plant guide on Wright fishhook cactus (NRCS 2011b) and the Wright Fishhook Cactus (*Sclerocactus wrightiae* L. Benson) 5-Year Review: Summary and Evaluation (USFWS 2008c).

Table 3.15: Miles of Routes in or within 300 Feet of Wright Fishhook Cactus Habitat and Acres of Modeled Habitat Affected by Route Miles

(the far-left column notes the miles and percentages of total evaluated route miles within habitat and total acres of modeled habitat)

Wright fishhook cactus		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Miles in Habitat: 340.3 (28.8% of Evaluated Routes)	OHV-Open + Limited	88.1	25.9%	69.6	20.5%	188.6	55.4%	227.5	66.9%
	OHV-Closed	0	0	270.7	79.5%	151.7	44.6%	112.7	33.1%
	Other Evaluated Routes	252.2	74.1%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 105,484	OHV-Open + Limited	6621.0	6.3%	4077.4	3.9%	10625.5	10.1%	12736.4	12.0%
	OHV-Closed	0	0	13708.7	13.0%	7160.7	6.8%	5034.5	4.7%
	Other Evaluated Routes	18953.0	18.0%	-	-	-	-	-	-

- Cisco milkvetch (*Astragalus sabulosus*): Species is endemic to Grand County and known to occur within salt desert shrub communities on the Mancos Shale Formation. There are no recorded observations within the TMA, but populations have been found adjacent to the TMA and modeled habitat is contiguous from Grand County to the San Rafael Desert. Potential Cisco milkvetch habitat covers approximately 77,606 acres within the TMA. Approximately 325.2 miles of routes are in or within 300 feet of this habitat. The Cisco milkvetch is not ESA-listed but has an ESA status of “Under Review” (USFWS 2019a).
- Entrada rushpink (aka rushpink skeletonplant) (*Lygodesmia grandiflora* var. *entrada*): Species is endemic to Emery, Grand, and San Juan Counties and typically occurs on the Entrada formation in mixed desert shrub communities and pinyon-juniper woodlands. Individuals have been recorded within the TMA. Modeled habitat is lacking so the following geologic substrates were used to predict potential habitat: “Summerville, Entrada, Carmel, Arapien, Twin Creek and other Formations” (J1) geological unit. Potential Entrada rushpink habitat covers approximately 105,484 acres within the TMA. Approximately 340.3 miles of routes are in or within 300 feet of this habitat.
- Flat-top buckwheat (aka Smith’s buckwheat) (*Eriogonum corymbosum* var. *smithii*): Species is endemic to the Colorado Plateau, occurring within Emery and Wayne Counties, most often on stabilized sand dunes derived from the Entrada Formation and associated with desert shrub and desert grassland communities. Individuals have been recorded within the TMA and modeled habitat is extensive throughout the southern half of the TMA. Potential Flat-top buckwheat habitat covers approximately 268,869 acres within the TMA. Approximately 674.4 miles of routes are in or within 300 feet of this habitat.
- Jones indigo bush (aka Jones dalea) (*Psoralea polydenius* var. *jonesii*): Species is endemic to Emery and Grand Counties occurring on Mancos Shale and occasionally on sandy gravel terraces. Individuals have been recorded within the TMA. Modeled habitat

is lacking so the following geologic substrate was used to predict occurrence: “Indianola, Mancos, Frontier, Straight Cuffs, Iron Springs and other Formations” (K2) geological unit. Potential Jones indigo bush habitat covers approximately 24,971 acres within the TMA. Approximately 87.2 miles of routes are in or within 300 feet of this habitat.

- Psoralea or scurfpea globemallow (*Sphaeralcea psoraloides*): Species is endemic to the Canyonlands of Utah, mostly occurring in Emery and Wayne Counties with some recorded observations in Grand County. It is commonly found on saline or gypsiferous soils and associated with desert scrub and pinyon-juniper communities. Individuals have been recorded within the TMA. Modeled habitat is lacking so the following geologic substrates were used to predict suitable habitat: “Summerville, Entrada, Carmel, Arapien, Twin Creek and other Formations” (J1), “Morrison Formation” (J2), “Dakota, Cedar Mountain, Kelvin and other Formations” (K1), and “Indianola, Mancos, Frontier, Straight Cuffs, Iron Springs and other Formations” (K2) geologic units. Potential Psoralea globemallow habitat covers approximately 174,449 acres within the TMA. Approximately 573.3 miles of routes are in or within 300 feet of this habitat.
- Stage station milkvetch (*Astragalus sabulosus* var. *vehiculus*): Species is a Utah endemic found adjacent to the TMA in Grand County on Morrison Formation-derived substrates and with desert shrub communities. There are no recorded observations within the TMA, but populations have been found adjacent to the TMA and modeled habitat is contiguous from Grand County to the San Rafael Desert. Potential Stage station milkvetch habitat covers approximately 8,069 acres within the TMA. Approximately 39.8 miles of routes are in or within 300 feet of this habitat.
- Trotter’s oreoxis (aka Trotter’s alpineparsley) (*Oreoxis trotteri*): Species is endemic to Wayne County and is associated with warm desert shrub and mixed juniper communities. Individuals have been recorded within the TMA and modeled habitat covers significant portions of the TMA. Potential Trotter’s oreoxis habitat covers approximately 200,999 acres within the TMA. Approximately 509 miles of routes are in or within 300 feet of this habitat.
- Utah spurge (aka Paria spurge) (*Euphorbia nephradenia*): Species is endemic to the Colorado Plateau, occurring in Emery, Garfield, Kane and Wayne counties in Utah and Colorado. Individuals have been recorded within the TMA often on stabilized sand dunes primarily derived from the Entrada Formation and associated with mixed desert shrub and grassland communities. Modeled habitat is lacking so the following geologic substrates were used to predict potential habitat: “Summerville, Entrada, Carmel, Arapien, Twin Creek and other Formations” (J1), “Morrison Formation” (J2), and “Surficial Eolian Deposits” (Qe) geological units. Potential Paria spurge habitat covers 299,474 BLM-managed acres throughout much of the TMA. Potential Paria spurge habitat covers approximately 341,032 acres within the TMA. Approximately 907.6 miles of routes are in or within 300 feet of this habitat.
- Pollinator habitat: The majority of bee species, including the BLM sensitive *Bombus occidentalis* or Western bumblebee, are ground nesting and require soils with

characteristics favorable for nests and tunnels, which are used to house, most often, only a single progeny along with the nectar and pollen necessary to provision it. Sandy substrates, like the windblown dunes of the San Rafael Desert, are preferentially selected for these nests and dense aggregations have often been observed on and around sand dunes (Griswold, Parker, and Tepedino 1998). Modeled habitat is lacking for bees and other pollinators within the TMA, but since sandy soils are a key factor supporting pollinator diversity within the TMA the following geologic units were used to predict coarsely textured substrate as a proxy for pollinator preferred habitat: “Alluvial fan deposits,” “Alluvial river or stream terrace deposits,” “Alluvial stream and wash deposits (all levels),” “Eolian and alluvial deposits,” “Eolian sand deposits,” “Eolian sand dune deposits.” Impacts to pollinator habitat and thus to pollinators and plant-pollinator mutualisms are assessed using the same 300-ft buffer utilized for the Special Status Plants. Potential pollinator habitat covers approximately 251,492 acres within the TMA. Approximately 697 miles of routes are in or within 300 feet of this habitat.

3.2.6.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

The special status plant species and their endemic pollinators within the TMA evolved with a specific set of habitat characteristics which may be threatened by OHV use and other recreational activities such as roadside camping, hiking, mountain biking, etc. OHV and anthropogenic-related use can impact special status plants and their pollinators through direct impacts to individuals, including crushing of plants or pollinators and illegal collection; indirect changes in physiological processes via fugitive dust deposition, including reduced stomatal conductance, increased transpiration rates, increased leaf temperature, decreased photosynthetic rates, and decreased reproductive rates (Farmer 1993, Goosens and Buck 2009, USFWS 2010); and alteration in suitable habitat resulting from destruction of vegetation, soil compaction, increased soil erosion, increased spread of noxious weeds, hydrologic changes from headcuts, reduced infiltration, and destruction of biocrusts (USGS 2005, Assaeed et al. 2019, USGS 2007). Soil compaction alters habitat suitability for special status species by changing soil characteristics, reducing pore spaces and increasing soil density, which results in reduced water infiltration, reduced seedling establishment, and increased competition with roadside weeds more adapted to disturbed conditions (Rosmarino and Robertson 2003, USGS 2005). These soil changes exacerbate the introduction and spread of invasive or noxious weeds that result from OHV use. Invasive plants compete with native plants in or near the evaluated routes. Reduced populations of native species and increases in non-native invasive species can be directly linked to OHV recreation (USGS 2007). Habitat alteration, fragmentation, and deterioration means increased competition for water, space, and nutrients, which results in decreased reproductive success for special status plants. In this way, the relatively small and disparate effects of individual OHV incursions can take on additive properties and result in large-scale habitat alteration.

The action alternatives clarify and structure opportunities for OHV use in or near special status species habitats that could improve conditions for special status plants. Such clarifying and structuring activities include installing new signs, route maintenance (grading, installing water control structures, surfacing, etc.), route decommissioning or reclamation (including ripping the ground and planting seed, grading/recontouring), installing fencing or barriers, or mulching on closed routes. BMPs and Species-Specific Conservation Measures would be applied to any areas

where future surveys locate any individuals of listed species. Installation of signs, barriers, and other permanent structures outside of existing disturbed areas are not included under the action alternatives and would be subject to additional NEPA.

Impact Indicators

Tables 3.16 and 3.17 below were used to inform effects analysis. The tables present three comparable metrics for gauging the evaluated routes' potential for effects on the Threatened, Endangered, and BLM Sensitive species and by extension their pollinators. These metrics (Miles, Acres Affected, and Percent Affected) present data for both a broadscale and a species-level comparison between the evaluated routes' potential to impact special status plant species and their habitats. It is important to note that most acreage within the TMA has not been surveyed for special status habitats or their pollinators and the habitat models are thus unavoidably broad, but useful for comparison of effects between species. These metrics assume that the impacts associated with OHV and other anthropogenic disturbances described in preceding sections (soil compaction, soil erosion, dusting, spread of invasive weeds, hydrologic changes resulting from headcuts, destruction of biocrusts, crushing of plants, illegal collection, etc.) will impact species evenly across the length of the route, the area of the route buffer, and within modeled habitat. These metrics are not intended to be applicable to fine-scale or site-specific impacts.

- **Miles:** Evaluated route miles that cross or are within 300 ft of modeled special status plant habitat. More miles equate to greater potential for the direct effects of OHV routes (habitat loss, crushing, poaching, headcuts, etc).
- **Acres Affected:** Acres of a species' modeled habitat within 300 ft of an Evaluated Route. quantifies the acres of the TMA within a route's zone of influence, or indirect effect (fugitive dust, spread of noxious or invasive weeds, habitat fragmentation, etc.). In the summary section, averages are presented because many species' habitats overlap and calculating "total habitat" affected would result in more Acres Affected than there are acres within the TMA.
- **Percent:** Percentage of a species' modeled habitat that is potentially impacted by the direct and indirect effects associated with Evaluated Routes. Provides species-level context for assessing each evaluated route's Miles and Acres Affected. For Example: "20,000 Navajo Sedge Acres Affected" would represent more than 60% of all Navajo Sedge modeled habitat within the TMA, but "20,000 Jones Cycladenia Acres Affected" would account for less than 8% of all Jones Cycladenia habitat modeled inside the TMA.

Also, under Alternative A, Other Evaluated Routes are included with designated OHV-open routes because it is assumed that their use will continue due to lack of clarity of the network. For analysis purposes, the habitat that other evaluated routes pass through or influence is therefore considered subject to the effects, outlined above, that OHVs have on the natural environment and ecological communities.

Table 3.16: Miles of OHV-Open or Limited and Other Available Routes in or within 300 Feet of ESA-Listed Plant and their Pollinator’s Habitats, Acres Affected by the Miles of Available Routes, and Percentage of Total Modeled Habitat Denoted by Acres Affected

Species	Habitat within TMA (acres)	Alt. A OHV-Open and Other Evaluated Routes			Alt. B OHV-Open and Limited Routes			Alt. C OHV-Open and Limited Routes			Alt. D OHV-Open and Limited Routes		
		Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent
Barneby reed-mustard	30,842	93.5	5,112	16.6%	39.6	1,890.6	6.1%	71.4	3,905.1	12.7%	81.5	4,550.9	14.8%
Jones cycladenia	260,119	685.8	42,622	16.4%	167.8	11,633.5	4.5%	396.4	26,733.3	10.3%	470.2	31,357	12.0%
Navajo sedge	32,179	28	1,422	4.4%	6.7	331.5	1.0%	25.1	1,304.4	4.1%	25.9	1,323.2	4.1%
San Rafael cactus	242,855	810.7	49,833	20.5%	223.3	4,077.4	3.9%	526.5	10,626	10.1%	610.7	12,573	11.9%
Ute ladies'-tresses	4, 192	3.6	95	2.3%	1.1	22.8	0.5%	2.9	79.8	1.9%	3.3	91.6	2.2%
Wright fishhook cactus	105,484	340.3	25,574	24.2%	69.6	4,077.4	3.9%	188.6	10,625.5	10.1%	227.5	12,736.4	12.7%

Table 3.17: Miles of OHV-Open or Limited and Other Available Routes in or within 300 Feet of BLM Sensitive Plant and their Pollinator’s Habitats, Acres Affected by the Miles of Available Routes, and Percentage of Total Modeled Habitat Denoted by Acres Affected

Species	Habitat within TMA (acres)	Alt. A OHV-Open and Other Evaluated Routes			Alt. B OHV-Open and Limited Routes			Alt. C OHV-Open and Limited Routes			Alt. D OHV-Open and Limited Routes		
		Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent
Bolander's camissonia	107,568	279.8	17,747	16.5%	55.6	3,943	3.7%	150.6	10,546	9.8%	181.1	12,494	11.6%
Cisco milkvetch	77,606	325.2	20,217	26.1%	97.7	6,888	8.9%	234	15,422	19.9%	268.4	17,395	22.4%
Entrada rushpink	105,484	340.3	25,574	24.2%	69.6	4,077	3.9%	188.6	10,626	10.1%	224.7	12,573	11.9%
Flat-top buckwheat	268,869	674.4	43,332	16.1%	148.9	10,490	3.9%	381.5	26,635	9.9%	453.2	31,277	11.6%
Jones indigo bush	24,971	87.2	1,411	5.7%	34.6	2,308	9.2%	67.4	4,461	17.9%	72.9	4,751	19%
Psoralea globemallow	174,449	573.3	35,681	20.5%	146.6	10,163	5.8%	360.9	24,219	13.9%	424	28,018	16.1%
Stage Station milkvetch	8,069	39.8	2441	30.3%	11.4	870	10.8%	30.7	1,956	24.2%	37.5	2,355	29.2%
Trotter's alpineparsley	200,998	509	30,617	15.2%	126.8	8,721	4.3%	308.7	19,171	9.5	355.3	22,065	11%
Utah spurge	341,032	907.6	57,670	16.9%	234.6	15,705	4.6%	542.5	36,804	10.8%	635.3	42,675	12.5%
Pollinators	251,492	697.4	42,653	17.0%	189.1	12,379	4.9%	426.3	27,996	11.1%	495.1	32,226	12.8%

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions, resulting in a total of 74,623 acres in or within 300 feet of a designated OHV-open or other available route, which comprise approximately 17% of the total area within the TMA.

Species-specific information is included in the table above; however, an average of 20,776 acres (18.4%) of modeled habitat per Threatened or Endangered species is within 300 feet of a designated OHV-open or other available route. For BLM Sensitive plant habitat, Alternative A affects an average of 27,723 acres (17.8%) of modeled habitat within 300 feet of a designated OHV-open or BLM system/county route per special status plant species. Of all the alternatives, Alternative A leaves the most habitat exposed to OHV use and OHV-associated impacts outlined above (trampling, soil disturbance, dusting, spread of noxious weeds, etc.).

With its lack of comprehensive designations, Alternative A does little to reduce OHV-use related effects such as trampling, soil disturbance, dusting, spread of noxious weeds, etc. Overall,

Alternative A is projected to have little to no likelihood for minimizing adverse effects to special status plant species.

Alternative B

Under Alternative B in special status plant habitats, 321 evaluated route miles would be designated OHV-open or OHV-limited and 859 route miles would be designated as OHV-closed. Alternative B would potentially affect 21,875 acres (5%) of special status plant modeled habitat compared to 74,623 acres (17%) potentially affected by Alternative A, which would be a 70.7% reduction.

Species-specific information is included in the table above; however, Alternative B affects an average of 5,473.5 acres (4.9%) of modeled habitat per Endangered or Threatened Species, which is a reduction of 73.7% compared to Alternative A. For BLM Sensitive plant and pollinator habitat, Alternative B affects an average of 7,554 acres (4.8%) of modeled habitat per species, a 72.8% reduction compared to Alternative A.

Alternative B closes more evaluated route miles in or proximate to special status plant habitats than Alternatives A, C, or D. This alternative would be the most effective alternative at minimizing OHV use-related effects such as trampling, soil disturbance, dusting, spread of noxious weeds, etc. Alternative B minimizes effects to special status plants to a greater degree than alternatives A, C, and D.

Alternative C

Under Alternative C in special status plant habitats, 746 evaluated route miles would be designated OHV-open or OHV-limited and 434 route miles would be designated as OHV-closed. Alternative C would potentially affect 50,226 acres (11.4%) of special status plant modeled habitat compared to 74,623 acres (17%) potentially affected by Alternative A, which would be a 36.8% reduction.

Species-specific information is included in the table above; however, Alternative C affects an average of 12,812 acres (11.4%) of modeled habitat per Endangered or Threatened Species, which is a 38.3% reduction compared to Alternative A. For BLM Sensitive plant and pollinator habitat, Alternative C affects an average of 17,783 acres (11.4%) of modeled habitat per species, a 35.9% reduction compared to Alternative A.

Alternative C closes more evaluated route miles in or proximate to special status plant habitats than Alternatives A and D, but fewer than Alternative B. These closures would reduce the adverse effects on plant habitats which can result from OHVs (trampling, soil disturbance, dusting, spread of noxious weeds, etc.). Alternative C minimizes effects to special status plants to a greater degree than Alternatives A and D, but to a lesser degree than Alternative B.

Alternative D

Under Alternative D in special status plant habitats, 866 evaluated route miles would be designated OHV-open or OHV-limited and 314 route miles would be designated as OHV-closed. Alternative D would potentially affect 57,667 acres (13.1%) of special status plant modeled

habitat compared to 74,623 acres (17%) potentially affected by Alternative A, which would be a 22.7% reduction.

Species-specific information is included in the tables above; however, Alternative D affects an average of 14,850 acres (13.2%) of modeled habitat per Endangered or Threatened Species, which is a 28.5% reduction compared to Alternative A. For BLM Sensitive plant and pollinator habitat, Alternative D affects an average of 20,583 acres (13.2%) of habitat per species, a 25.8% reduction compared to Alternative A.

Alternative D closes more evaluated route miles in or proximate to special status plant habitats than Alternative A, but fewer than Alternatives B and C. These closures would reduce the adverse effects on plant habitats which can result from OHVs (trampling, soil disturbance, dusting, spread of noxious weeds, etc.). Alternative D minimizes effects to special status plants to a greater degree than Alternative A, but to a lesser degree than Alternatives B and C.

Based upon the effects described above and detailed in the Biological Assessment, the BLM determined Alternative D *May Affect* and is *Likely to Adversely Affect* Jones cycladenia, Ute ladies'-tresses, Wright fishhook cactus, San Rafael cactus, and Barneby reed-mustard; there is no designated or proposed critical habitat for these species. The BLM determined Alternative D *May Affect* and is *Likely to Adversely Affect* Navajo sedge but would have *No Effect* on its critical habitat. The USFWS concurred with these determinations in the BO dated May 14, 2020.

Cumulative Effects

The cumulative effects analysis area for special status plants and their pollinators in the TMA is the species' occupied, suitable, and potential habitat (modeled habitat, geologic units, etc.) within the TMA and those portions of Wayne, Grand, and Emery Counties adjacent to the TMA. Because the TMA and suitable adjacent habitat often represents the entire range for a given species, this cumulative impact area was delineated for analysis to capture the outsized impacts that actions within the species' habitat could have on the persistence of the species.

Past, present, and reasonably foreseeable actions, plans, or projects impacting special status plants and pollinators and their habitats in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other OHV-access related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers. Although the impacts to individual species' habitats will be less than the impacts to the overall TMA, using this TMA cumulative action description makes it easier to account for adjacent cumulative effects like invasive weeds, fugitive dust, and noise.

Cumulative effects from past, present, and reasonably foreseeable projects on special status plants and their pollinators include dusting, crushing or damage of plants or pollinators from livestock or wildlife grazing, travel or bedding and roadside camping or parking, and spread of noxious weeds and invasive species from wildlife, livestock, or vehicle travel.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions, and an overall incremental change to sensitive plant and pollinator species and their habitats within the cumulative effects analysis area is not anticipated.

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to sensitive plant and pollinator species and their habitats by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to sensitive plant and pollinator species and their habitats. Summarily, there would be no cumulative increase to impacts on sensitive plant and pollinator species and their habitats within the cumulative effects analysis area from OHV travel under any action alternative.

3.2.7 Special Status Animals

How would alternatives minimize effects on special status animal species and their habitats?

3.2.7.1 Affected Environment

The animal species listed below are listed under the ESA and have the potential to occur in the TMA. Details on habitat, threats, and trends for the ESA-listed species below as well as the BLM sensitive species listed lower in this section can be found in a Biological Resource Evaluation developed by Price BLM resource staff (Appendix J), the “Special Status Species” section of the Price Proposed RMP/EIS (BLM 2008b, pages 3-36 to 3-49), the Price RMP Biological Opinion (USFWS 2008a), the Utah Sensitive Species List (UDWR 2017a), NatureServe Explorer (NSE 2019), and BLM Instruction Memorandum No. UT IM-2019-005. All species listed below have at least the potential to occur in the TMA. Additional habitat/threat/trend information sources are listed under each species.

- Mexican spotted owl (*Strix occidentalis lucida*) - Threatened: The Mexican spotted owl is a medium-sized owl that occurs in the forested mountains and canyonlands of the southwestern United States and Mexico. Within the Colorado Plateau Ecological Management Unit that encompasses the TMA, the species primarily inhabits deep, steep-walled canyons and hanging canyons. Within the TMA suitable habitat is primarily located within Labyrinth Canyon Wilderness area in the southeastern portion of the analysis area along the Green River and tributary canyons. The nearest recorded nest site is located approximately 1.4 miles to the east of the TMA. Neither protocol surveys nor habitat evaluation have occurred within the majority of the modeled suitable habitat. Therefore, all modeled habitat is assumed to be suitable occupied habitat for this analysis. Within the TMA, habitat is currently impacted by 252.9 miles of routes in or within ½ mile of Mexican spotted owl modeled habitat (USU 2014, Lewis¹³) greater than 2.5 acres

¹³ The 2014 Lewis ensemble model with classification greater than zero was chosen over the competing Willey and Spotskey models (1997, 2000). The classification thresholds developed for this model balances maximizing proper

in size (USFWS 2012a). Modeled habitat primarily occurs in the southeastern portion of the TMA. Modeled habitat covers 20,128 acres within ½ mile of the TMA (BLM 2020, Appendix C, Map 3). Designated critical habitat for the Mexican spotted owl occurs approximately 0.46 miles from the southeastern part of the TMA’s outer boundaries (DOI 2018d). The nearest route within the TMA is located 2.8 miles outside of critical habitat. For additional details on Mexican spotted owl habitat, threats, and trends see the *Mexican Spotted Owl Recovery Plan* (USFWS 2012a).

Table 3.18: Miles of Routes in or within ½ Mile of Mexican Spotted Owl Modeled Habitat and Acres of Modeled Habitat Affected by Route Miles
(the far-left column notes the miles and percentages derived of total evaluated route miles within habitat and total acres of modeled habitat)

Mexican spotted owl		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Miles in Habitat: 252.9 (21.4 % of Evaluated Routes)	OHV-Open + Limited	66.9	26.5%	58.2	23.0%	154.9	61.2%	178.5	70.6%
	OHV-Closed	0	0	194.7	77.0%	98.0	38.8%	74.4	29.4%
	Other Evaluated Routes	186.0	73.5%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 20,128	OHV-Open + Limited	2861.0	14.2%	2846.0	14.1%	6286.7	31.2%	6626.0	32.9%
	OHV-Closed	0	0	4319.0	21.5%	878.3	4.4%	537.9	2.6%
	Other Evaluated Routes	4308.0	21.4%	-	-	-	-	-	-

- Southwestern willow flycatcher (*Empidonax trailii extimus*) – Endangered: The southwestern willow flycatcher is a small Neotropical migratory bird that exclusively nests in dense tree and shrub riparian habitats. In the TMA, riparian regions that are at least 0.25 acres in size and a minimum of 30 feet wide are considered potential habitat and were delineated using the calculated normalized difference vegetation index from the average mosaic NAIP imagery from 2010 to 2016. Potential habitat covers 5,100 acres within ½ mile of the TMA and is found primarily along the perennial streams within the analysis area (BLM 2020, Appendix C, Map 4). This habitat is currently impacted by 199.5 miles of routes that exist in or within ½ mile. For more details on habitat, threats, and trends, see the Cornell Lab of Ornithology (CLO 2017) and the Final Recovery Plan for the Southwestern Willow Flycatcher (USFWS 2002c).

classification and minimizing false positive classifications. The three models that feed into the ensemble model all outperform the Willey and Spotskey 1996 model and strongly outperform the 2000 model in accurately classifying known nest locations. The use of ensemble model where any of the three input models is classified as suitable habitat provides a conservative estimate of the extent of suitable habitat within the TMA.

Table 3.19: Miles of Routes in or within ½ Mile of Southwestern Willow Flycatcher Modeled Habitat and Acres of Modeled Habitat Affected by Route Miles
 (the far-left column notes the miles and percentages derived from total routes within habitat of total evaluated route miles of modeled habitat)

Southwestern willow flycatcher		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Miles in Habitat: 199.5 (16.9 % of Evaluated Routes)	Designation								
	OHV-Open + Limited	63.1	31.6%	68.4	34.3%	140.1	70.2%	167.3	83.6%
	OHV-Closed	0	0	131.1	65.7%	59.5	29.8%	32.1	16.4%
	Other Evaluated Routes	136.4	68.4%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 5,100	OHV-Open + Limited	1347.1	26.4%	1591.6	32.2%	1953.5	38.3%	2066.8	40.5%
	OHV-Closed	0	0	594.6	11.7%	232.7	4.6%	108.5	2.1%
	Other Evaluated Routes	839.1	16.5%	-	-	-	-	-	-

- Yellow-billed cuckoo (western distinct population segment) (*Coccyzus americanus occidentalis*) - Threatened: The yellow-billed cuckoo is a riparian obligate species of western North America. The species nests in low to moderate elevation deciduous riparian woodlands (USFWS 2015b). Breeding has not been detected within the TMA. However, possible breeding has been identified on the Green River within five miles of the TMA and at least one vocalization has been recorded along the San Rafael River within the TMA (2014). For analysis, potential habitat is considered as the riparian regions within the TMA that are at least 12 acres in size and a minimum of 100 feet by 100 feet in dimension (USFWS 2015a). These areas were delineated using the calculated normalized difference vegetation index from the average mosaic NAIP imagery from 2010 to 2016. This potential habitat covers 4,354 acres within ½ mile of the TMA, is found primarily along the perennial streams within the analysis area (BLM 2020, Appendix C, Map 6), and is currently impacted by 77.7 miles of routes in or within ½ mile. A National Park Service fact sheet (NPS 2014) provides additional details on cuckoo habit, threats, and trends.

Table 3.20: Miles of Routes in or within ½ Mile of Western Yellow-Billed Cuckoo Modeled Habitat and Acres of Modeled Habitat Affected by Route Miles

(the far-left column notes the miles and percentages derived of total evaluated route miles within habitat and total acres of modeled habitat)

Western yellow-billed cuckoo		Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Miles in Habitat: 77.7 (6.6 % of Evaluated Routes)	OHV-Open + Limited	26.4	34.0%	27.2	35.0%	58.3	75.0%	70.3	90.5%
	OHV-Closed	0	0	50.5	65.0%	19.4	25.0%	7.3	9.4%
	Other Evaluated Routes	51.3	66.0%	-	-	-	-	-	-
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Habitat Acres in TMA: 4,354	OHV-Open + Limited	1148.2	26.4%	1287.8	29.6%	1557.1	35.8%	1660.3	38.1%
	OHV-Closed	0	0	487.7	11.2%	218.4	5.0%	115.2	2.6%
	Other Evaluated Routes	627.3	14.4%	-	-	-	-	-	-

BLM Utah Sensitive animals listed below also occur in the TMA:

- **Bald eagle (*Haliaeetus leucocephalus*):** Species occurs throughout Canada, the United States, and south into central Mexico. Though a rare breeder in Utah, individuals have been observed within the TMA and throughout Utah in the winter, preferring areas near open water. In November-March, wintering bald eagles use the San Rafael River and Green River corridors. Areas with well-developed riparian vegetation were considered potential habitat and were delineated using the calculated normalized difference vegetation index from the average mosaic NAIP imagery from 2010 to 2016 and covers 4,279 acres within the TMA. This habitat has been previously fragmented by 243 miles of open or undesignated routes in or within 1 mile. For more details on habitat and threats, see the Cornell Lab of Ornithology (CLO 2017).
- **Burrowing owl (*Athene cunicularia*):** 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. Species has been observed within the TMA and modeled habitat covers 364,490 acres of the TMA (USGS 2018). This habitat is currently impacted by 1,180 miles of route network in or within ¼ mile. For more details on habitat, threats, and trends, see the Cornell Lab of Ornithology (CLO 2017).
- **Cornsnake (aka Great Plains ratsnake) (*Elaphe guttata*):** Little is known about this species' use of habitats, but individuals have been documented to occur along the Colorado and Green River corridors, implying the importance of riparian habitat. Riparian habitats occur along river corridors throughout the TMA. Modeled habitat covers 3,839 acres of the TMA and has been previously impacted by 193.6 miles of routes in or within 660 feet (BLM2008c).
- **Ferruginous hawk (*Buteo regalis*):** 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. Species has been observed within the TMA, and modeled habitat is extensive within the TMA, covering 219,891 acres (USGS 2018). This habitat is currently impacted by 1,167 miles of routes in or within ½ mile. For more details on habitat, threats, and trends, see the Cornell Lab of Ornithology (CLO 2017).

- Fringed myotis (*Myotis thysanodes*): This bat occurs primarily within the Colorado Plateau of southern and eastern Utah. Individuals have been encountered in varied habitats, including mixed conifer and aspen, desert riparian, and pinyon-juniper. Populations tend to be associated with areas having rocky outcroppings, cliffs, and canyons. Species has been observed within the TMA and modeled habitat covers 269,897 acres of the TMA (USGS 2018). This habitat has been previously impacted by 1,180 miles of routes in or within ¼ mile. For more details on habitat, threats, and trends, see pages 7-13, 85-91, and 97-107 of *The Bats of Utah: A Literature Review* (UDWR 2000).
- Spotted bat (*Euderma maculatum*): This species occurs in various habitats from desert to montane coniferous stands, including open ponderosa pine, pinyon-juniper woodland, canyon bottoms, riparian and river corridors, meadows, open pasture, and hayfields. Species has been observed within the TMA and modeled habitat covers 73,990 acres of the TMA (USGS 2018). This habitat has been previously impacted by 1,062 miles of routes in or within ¼ mile. For more details on habitat, threats, and trends, see pages 7-13, 85-91, and 97-107 of *The Bats of Utah: A Literature Review* (UDWR 2000).
- Townsend's big-eared bat (*Corynorhinus townsendii*): This species occurs in a wide variety of habitats including sagebrush steppe, pinyon-juniper, mountain shrub, and mixed conifer associations. Species has been observed within the TMA and modeled habitat covers 419,973 acres of the TMA (USGS 2018). This habitat has been previously impacted by 1,180 miles of routes in or within ¼ mile. For more details on habitat, threats, and trends, see pages 7-13, 85-91, and 97-107 of *The Bats of Utah: A Literature Review* (UDWR 2000).
- Golden eagle (*Aquila chrysaetos*): Species is known to inhabit open and semi-open country especially in hilly or mountainous regions in areas with sufficient mammalian prey base. Species has been observed within the TMA, and modeled habitat is extensive throughout the TMA, covering 319,760 acres (USGS 2018). This habitat is currently impacted by 1,180 miles of the route network in or within ½ mile. For more details on habitat, threats, and trends, see the Cornell Lab of Ornithology (CLO 2017).
- Great Plains toad (*Bufo cognatus*): Species occurs throughout the state, where it prefers desert, grassland, and agricultural habitats. Species has been observed within the TMA, and modeled habitat is extensive within the TMA, covering 194,809 acres. This habitat is currently impacted by 1,098 miles of routes in or within 660 feet of Great Plains toad habitat, which covers 169,905 BLM-managed acres within the TMA (USGS 2018).
- Kit fox (*Vulpes macrotis*): 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 within the TMA, including a 2018 study performed by the BLM, which observed kit fox presence across the northern portions of the TMA (BLM 2018). Modeled habitat is extensive within the TMA, covering 400,360 acres. This habitat is currently impacted by 1,180 miles of open or undesignated routes in or within ¼ mile.
- Monarch butterfly (*Danaus plexippus*): Species is widespread throughout the U.S. during the summer months, wintering in warmer areas in Mexico and California. They require nectar-producing flowers for foraging habitat and milkweed for breeding habitat. Species has been observed within the TMA, and potential habitat is present. Given this species' requirement for milkweed and floral resources throughout the summer, and in light of the extreme aridity of the San Rafael Desert, riparian areas were considered as the suitable

proxy for habitat. Modeled habitat covers 3,839 acres within the TMA and is currently fragmented by 253 miles of open or undesignated routes in or within ¼ mile. For more details on habitat, threats, and trends, see Conservation Status and Ecology of the Monarch Butterfly in the United States (NSE and XSIC 2015).

- Western red bat (*Lasiurus blossevillii*): Species roosts in trees and is closely associated with well-developed riparian habitats, showing preference for mature cottonwood and willow stands as suitable roosting sites. Species has been recorded within the TMA, and modeled habitat is extensive within the TMA. Modeled habitat covers 3,839 acres within the TMA and is currently fragmented by 253 miles of open or undesignated routes in or within ¼ mile. For more details on habitat, threats, and trends see pages 52-58 of The Bats of Utah: A Literature Review (UDWR 2000).
- White-tailed Prairie Dog (*Cynomys leucurus*): 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, and inhabit areas with flat to gently rolling slopes in grasslands and high desert scrub. Species has been observed within the TMA, modeled habitat is extensive throughout the TMA, and PFO designated crucial habitat is found within the TMA. Modeled habitat occurs on 80,660 acres of the TMA with 6,959 acres designated as critical habitat by the Price Field Office (BLM 2008b, USGS 2018). This habitat is currently impacted by 869.4 miles of routes in or within ¼ mile of modeled habitat and 63 miles of routes in or within ¼ mile of PFO designated crucial habitat.

3.2.7.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

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

Disturbance from OHV use and human presence can also result in indirect impacts to special status species. Because many animal species respond to humans in the same ways they respond to predators, OHV use can trigger behavioral changes like increased flight and vigilance, and result in the disruption or displacement of other essential behaviors including breeding, nesting, foraging, hunting, and predator-avoidance activities (Trombulak and Frissell 2000, USGS 2007, Larson et al. 2016). An example of an indirect impact of OHVs that can alter behavior is the noise they produce, which 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 single user passing by to more extended disturbances like those resulting from high traffic volumes on a busy holiday or dispersed camping taking place within nesting or foraging habitat. Accordingly, species' responses may also range from brief, immediate responses, such as alerting or flushing, to more long-term responses like abandonment of preferred habitat (FHWA 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, USGS 2007).

Impacts from OHV use affect habitat as well, further reducing resource availability through the introduction of non-native species, reductions in native vegetative cover, and detrimental changes to the physical and chemical environment like altered and amplified erosion patterns, reduced water infiltration, reduced water quality, reduced soil fertility, and increases in pollutants (Trombulak and Frissell 2000, USGS 2005, USGS 2007).

These reductions in habitat quality and connectivity exacerbate the direct and indirect impacts to individuals detailed above and can result in profound effects to native wildlife populations, species richness, and community composition, (Trombulak and Frissell 2000, USGS 2007, Larson et al. 2016). Reduced density, diversity and biomass of lizards, birds, small prey species like desert cottontails and kangaroo rats, and even special status predators like the BLM sensitive kit fox have been associated with OHV use areas (USGS 2007, Jones et al. 2017). Specialist species, like the kit fox and other special status animals analyzed in this section, are particularly vulnerable to ecosystem alterations. The environmental changes outlined above have historically favored generalist species, like coyotes and ravens, at the expense of specialist species, like kit foxes and burrowing owls (Wilson and Willis 1975, With and Crist 1995, McKinney 1997, Hoffmeister et al. 2005). For more details on species-specific travel-related effects, see the Price Proposed RMP/EIS (BLM 2008b), the Price Biological Opinion (USFWS 2008a), the Utah Sensitive Species List (UDWR 2017a), the Mexican Spotted Owl Recovery Plan (USFWS 2012a), the Cornell Lab of Ornithology (CLO 2017), and NatureServe Explorer (NSE 2019).

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

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

Impact Indicators

Tables 3.21 and 3.22 below were used to inform effects analysis. The tables present three comparable metrics for judging evaluated route's potential to have effects on the Threatened, Endangered, and BLM Sensitive species across Alternatives. These metrics (Miles, Acres Affected, and Percent Affected) present data for both a broadscale and a species-level comparison between evaluated route's potential to impact special status animal species and their modeled habitat. It is important to note that, though the species analyzed are complex organisms interacting with a varied environment, the habitat models used to assess effects are, for the most part, broad generalizations which can over-predict or under-predict species presence at the site level. However, these models are a quantitative way to compare the indeterminate effects of different route network alternatives on special status animal species and their habitats. The metrics derived from the habitat models assume that the impacts associated with OHVs and other route-related anthropogenic disturbance will impact species evenly across the length of the route, the area of the route buffer, and within modeled habitat. These metrics are not intended to be applicable to fine-scale or site-specific impacts.

- Miles:** Evaluated route miles that cross or affect special status animal habitat that falls within the species-specific effects buffer around open or undesignated routes. More miles equate to greater potential for the direct effects of OHV routes (vehicle collisions, injury, poaching, burrow or nest destruction, etc).
- Acres Affected:** Acres of a species' modeled habitat within the species-specific route buffer ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ mile) around an Evaluated Route. This metric quantifies the acres of the TMA within a route's indirect effect zone of impact (increased vigilance, noise disturbance, non-native vegetation, habitat alteration, etc). In the summary section, averages are presented because the species' modeled habitats often overlap and calculating "total habitat" affected would result in more Acres Affected than there are acres within the TMA. Three different buffer distances are used, as response to a route's zone of effect often differs between species and a single value is not sufficient to quantify the Evaluated Route's potential effects (With and Crist 1995). Because species-specific research is generally lacking, buffers used are approximations that serve as useful proxies for quantifying a route network's potential to impact the landscape.
- Percent:** Percentage of a species' modeled habitat that is potentially impacted by the direct and indirect effects associated with Evaluated Routes. This metric provides species-level context for assessing Acres Affected. For Example, "5,000 Southwestern Willow Flycatcher Acres Affected" would represent more than 98% of all the Southwestern Willow Flycatcher habitat modeled within the TMA, but "5,000 Mexican Spotted Owl Acres Affected" would account for less than 25% of all Mexican Spotted Owl habitat modeled within the TMA.

Also, under Alternative A, Other Evaluated Routes are included with designated OHV-open and BLM system and county roads because it is assumed that their use will continue due to lack of clarity of the network. For analysis purposes, the habitat that other evaluated routes pass through or influence is therefore considered subject to the effects, outlined above, that OHVs have on the natural environment and ecological communities.

Table 3.21: Miles of OHV-Open or Limited and Other Available Routes in or within Threatened or Endangered Species-Specific Route Buffers, Acres Affected by the Miles of Available Routes, and Percentage of Total Modeled Habitat Denoted by Acres Affected

Species	Habitat within TMA (acres)	Alt. A OHV-Open and Other Evaluated Routes			Alt. B OHV-Open and Limited Routes			Alt. C OHV-Open and Limited Routes			Alt. D OHV-Open and Limited Routes		
		Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent
Mexican Spotted Owl	20,128	252.9	7,164	35.6%	58.2	2,846	14.1%	154.9	6,286.7	31.2%	175.3	6,581	32.7%
Southwestern Willow Flycatcher	5,100	199.5	2,186.2	42.9%	27.2	1,287.8	31.2%	140.1	1,953.5	38.3%	166.8	2,066.8	40.5%
Yellow-billed Cuckoo	4,354	77.7	1,775.5	40.8%	68.4	1,591.6	29.6%	58.3	1,557.1	35.8%	69.8	1,660.3	38.1%

Table 3.22: Miles of OHV-Open or Limited and Other Available Routes in or within BLM Sensitive Species-Specific Route Buffers, Acres Affected by the Miles of Available Routes, and Percentage of Total Modeled Habitat Denoted by Acres Affected

Species	Habitat within TMA (acres)	Alt. A OHV-Open and Other Evaluated Routes			Alt. B OHV-Open and Limited Routes			Alt. C OHV-Open and Limited Routes			Alt. D OHV-Open and Limited Routes		
		Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent
Bald Eagle	4278.5	242.9	2,845	66.5%	98	2,484.5	58.1%	194.9	2,642.9	61.8%	211.7	2,658.9	62.1%
Burrowing Owl	364,490	1168.1	237,449	65.1%	317.1	92,989.5	25.5%	735.5	185,367	51%	855	202,653	55.6%
Cornsnake	3,839	193.6	1,469.8	38.3%	80.3	350.5	9.1%	160.6	1,227	32%	175	1,415	36.9%
Ferruginous Hawk	219,891	1167	179,016	81.4%	317	97,489.7	44.3%	735.6	157,234	71.6%	855	164,695	75%
Fringed Myotis	269,897	1167	139,069	51.5%	316.6	50,978.7	18.9%	735	105,192	39%	854.4	116,262	43%
Golden Eagle	319,760	1180	319,760	100%	321	177,185	55.4%	746	308,267	96.4%	866	319,760	100%
Great Plains Toad	194,809	1098	69,964	36%	306.5	26,328	13.5%	708.4	53,320	27.4%	822.6	59,379.7	30.5%
Kit Fox	400,360	1180	239,868	59.9%	321	94,133.2	23.5%	746	188,014	47%	866	205,260	51.3%
Monarch Butterfly	3,839	253.2	2,107.2	54.9%	91	776.2	20.2%	200	1,794.1	46.7%	217	2,028.8	52.8%
Spotted Bat	73,990	1062	34,743	47%	299	15,233	20.6%	689.5	29,101	39.3%	799.2	31,843.4	43%
Townsend's Big-eared B	419,973	1180	239,868	57.1%	321	94,133	22.4%	746	188,014	44.8%	866	205,260	49%
Western Red Bat	3,839	253.2	2,107.2	54.9%	91	776.2	20.2%	200	1,794.1	46.7%	217	2,028.8	52.8%
White-tailed Prairie Dog	80,660	869.4	53,532	66.4%	277.8	26,600	33%	607.4	46,005	57%	686.7	49,536	61.4%

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions, resulting in a total of 4,291 acres in or within the footprint (assumed average of 30 foot route width) of a designated OHV-open or other available route, which comprise approximately 0.98% of the total area within the TMA. Numbers below illustrate route network's zone of effects.

- Area within 1/8 mile (660 feet): 144,823.5 acres, 32.9% of the TMA
- Area within 1/4 mile (1,320 feet): 239,868.2 acres, 54.5% of the TMA
- Area within 1/2 mile (2,640 feet): 350,067.6 acres, 79.6% of the TMA

Species-specific information is included in the table above; however, an average of 3,708.6 acres (39.7%) of habitat is within the species-specific buffer of a designated OHV-open or other available route per Endangered or Threatened animal species. For BLM sensitive animal species, Alternative A impacts an average of 117,061.5 (59.9%) acres of modeled habitat within the species-specific buffer of a designated OHV-open or other available route per species. Alternative A leaves the most habitat exposed to OHV use and the associated impacts outlined above (direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.).

With its lack of comprehensive designations, Alternative A does little to reduce OHV use-related effects to special status animal species such as collision mortality; destruction of foraging, burrowing, or nesting habitats; and disruption or displacement of breeding, nesting, and foraging activities. Overall, Alternative A is projected to have little to no likelihood for minimizing adverse effects to special status animal species.

Alternative B

Under Alternative B in special status animal habitats, 321 route miles would be designated OHV-open or OHV-limited and 859 route miles would be designated OHV-closed. Alternative B would potentially affect 1,167 acres (0.27%) of special status animal modeled habitat compared to 4,291 acres (0.27%) potentially affected by Alternative A, which would be a 73% reduction.

- Within 1/8 mile: 47,794.4 acres, 10.9% of the TMA, a 67% reduction
- Within 1/4 mi: 94,133.2 acres, 21.4% of the TMA, a 60.8% reduction
- Within 1/2 mile: 177,184.5 acres, 40.3% of the TMA, a 49.4% reduction

Species-specific information is included in the table above; however, Alternative B affects an average of 1,908.5 acres (25%) of modeled habitat per Endangered or Threatened species, which is a 48.5% reduction compared to Alternative A. For BLM Sensitive species, Alternative B impacts an average of 52,266 acres (28.1%) of modeled habitat per species, a 55.4% reduction compared to Alternative A.

Alternative B closes more evaluated route miles in or proximate to special status animal habitats than Alternatives A, C, or D. Alternative B would be the most effective alternative at minimizing OHV use-related effects to special status animal species.

Alternative C

Under Alternative C in special status animal habitats, 746 evaluated route miles would be designated OHV-open or OHV-limited and 434 route miles would be designated OHV-closed. Alternative C would potentially affect 2,712.7 acres (0.62%) of special status animal modeled habitat compared to 4,291 acres (0.98%) potentially affected by Alternative A, which would be a 36.8% reduction.

- Within 1/8 mile: 104,101.3 acres, 23.7% of the TMA, a 28.1% reduction
- Within 1/4 mi: 188,013.5 acres, 42.8% of the TMA, a 21.6% reduction
- Within 1/2 mile: 308,266.9 acres, 70.1% of the TMA, a 11.9% reduction

Species-specific information is included in the table above; however, Alternative C impacts an average of 3,265.8 acres (35.1%) of modeled habitat per Endangered or Threatened Species, which is an 11.9% reduction compared to Alternative A. For BLM Sensitive animal habitat, Alternative C impacts an average of 97,559.4 acres (50.8%) of modeled habitat per species, a 16.7% reduction compared to Alternative A.

Alternative C closes more evaluated route miles in or proximate to special status animal habitats than Alternatives A and D, but fewer than Alternative B. These closures reduce the adverse effects on animal habitats which can result from OHV-facilitated use (collision mortality, destruction of foraging, burrowing, or nesting habitats, and disruption or displacement of breeding, nesting, and foraging activities). Alternative C minimizes OHV use-related effects to special status animal species to a greater degree than Alternatives A and D, but to a lesser degree than Alternative B.

Alternative D

Under Alternative D in special status animal habitats, 866 route miles would be designated OHV-open or OHV-limited and 314 route miles would be designated OHV-closed. Alternative D would potentially affect 3,149 acres (0.72%) of special status animal modeled habitat compared to 4,291 acres (0.98%) potentially affected by Alternative A, which is a 26.6% reduction compared to Alternative A.

- Within 1/8 mile: 117,232.4 acres, 26.7% of the TMA, a 19.1% reduction
- Within 1/4 mi: 205,260.1 acres, 46.7% of the TMA, a 14.4% reduction
- Within 1/2 mile: 320,760.6 acres, 72.9% of the TMA, an 8.4% reduction

Species-specific information is included in the table above; however, Alternative D impacts an average of 3,436 acres (37.1%) of modeled habitat per Endangered or Threatened Species, which is a 7.3% reduction compared to Alternative A. For BLM Sensitive animal species, Alternative D impacts an average of 104,829.3 acres (54.9%) of habitat per species, a 10.4% reduction compared to Alternative A.

Alternative D closes more evaluated route miles in or proximate to special status animal habitats than Alternative A, but fewer than Alternatives B and C. These closures are projected to reduce the adverse effects on animal habitats which can result from OHV-facilitated use (collision mortality, destruction of foraging, burrowing, or nesting habitats, and disruption or displacement of breeding, nesting, and foraging activities). Alternative D minimizes OHV use-related effects to special status animal species to a greater degree than Alternative A, but to a lesser degree than Alternatives B and C.

Based upon the effects described above and detailed in the Biological Assessment, the BLM determined Alternative D *May Affect* and is *Likely to Adversely Affect* the Mexican spotted owl and yellow-billed cuckoo but would have *No effect* on their designated critical habitat. The BLM determined Alternative D *May Affect* but is *Not Likely to Adversely Affect* the southwestern willow flycatcher and would have *No effect* on its designated critical habitat. The USFWS concurred with these determinations in the BO dated May 14, 2020.

Cumulative Effects

For the Mexican spotted owl, the geographic scope of cumulative effects analysis is the modeled habitat in the TMA as well as the USFWS critical habitat that lies to the north (Unit CP-15) and south (Unit CP-14) of the TMA. This scope was chosen because it reflects species populations and movements.

For the southwestern willow flycatcher and the yellow-billed cuckoo, the geographic scope of cumulative effects analysis is the modeled habitat in the TMA as well as riparian areas up and downstream from the TMA, including the upper reaches of the San Rafael River and the Green River down to its confluence with the Colorado River. This scope was chosen because of the species' reliance on riparian habitats for nesting, foraging, and movement.

The geographic scope of cumulative effects analysis for BLM sensitive animals is modeled habitat and predicted range in the TMA plus a 10-mile buffer. This scope was chosen because TMA and a 10-mile buffer around it accommodate species movements and provide a good picture of movement behavior and populations.

Past, present, and reasonably foreseeable actions, plans, or projects impacting special status animals in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other OHV access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers. Although the impacts to individual species' habitats will be less than the impacts to the overall TMA, using this TMA cumulative action description makes it easier to account for adjacent cumulative effects like invasive weeds, fugitive dust, and noise.

Cumulative effects to special status animals from past, present, and reasonably foreseeable projects include disturbance or displacement; loss of prey; reduced reproductive success; alterations in species richness and community composition; damage to nesting, burrowing, brooding, and foraging habitat; mortality; and habitat fragmentation.

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

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to special status wildlife and their habitats by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to special status wildlife and their habitats. Summarily,

there would be no cumulative increase to impacts on special status wildlife their habitats within the cumulative effects analysis area from OHV travel under any action alternative.

3.2.8 General Wildlife and Migratory Birds Including Raptors

How would alternatives minimize impacts to general wildlife species and migratory birds and their habitats?

3.2.8.1 Affected Environment

The TMA contains a variety of migratory birds and general wildlife that is summarized below. For more detailed information on general wildlife (including mule deer, pronghorn, and desert bighorn), migratory birds, and their habitats, see the “Wildlife” section of the Price Proposed RMP/EIS (BLM 2008b, pages 3-51 to 3-59) and NatureServe Explorer (NSE 2019). Wildlife species that have crucial or substantial habitat in the TMA includes:

- **Desert bighorn sheep (*Ovis canadensis nelsoni*):** Desert bighorn inhabit remote and rugged terrain—slickrock canyons, rocky slopes, and canyonlands. They are native to Utah and were well known to the prehistoric inhabitants of the state; they inhabited nearly every mountain range in the state prior to European settlement (UDWR 2018). Today, desert bighorn generally occur in southern Utah and do not migrate. The UDWR estimates the current population to be around 2,900 animals in the state (2018). Within the TMA, desert bighorn habitat is concentrated in the southeastern part, and much of it is along the Green River. Approximately 27,360 acres of year-long desert bighorn habitat exists within the TMA, approximately 20,087 acres of which are crucial (see glossary in Appendix Q for definition) (UDWR 2019). Desert bighorn habitat is currently impacted by 27.1 miles of network routes located in or within ¼ mile.
- **Mule deer (*Odocoileus hemionus*):** Mule deer are a native species found throughout the TMA and the state of Utah. They tend to migrate between summer and winter ranges, but they are more populous in shrublands and areas of rough, broken terrain with abundant browse and cover (BLM 2008b). UDWR has identified increasing mule deer herd numbers as one of its top priorities on a state-wide basis. The current UDWR deer-management plan (effective 2014-2019) identifies protecting and restoring crucial habitats as one of the most important measures to improve the health of mule deer populations. Loss and degradation of habitat—including from OHV use, route construction, spread of invasive plant species, and wildland fire—pose the largest threats to mule deer populations. For more details on habitat, threats, and trends, see the Utah Mule Deer Statewide Management Plan (UDWR 2014). The TMA contains approximately 56,359.1 acres of substantial mule deer habitat but no crucial habitat (UDWR 2019), and this habitat is currently impacted by 192.7 miles of travel routes in or within ¼ mile of this substantial habitat.
- **Pronghorn (*Antilocapra americana*):** Pronghorn historically ranged widely west of the Mississippi. The late 1800s saw drastic declines in population due to fencing, habitat loss, and unregulated hunting, but populations have since recovered and recent estimates place the North American population around 800,000, including nearly 16,000 in Utah. Pronghorn primarily inhabit grasslands and shrub steppe biomes with succulent forb vegetation and available water (UDWR 2017b). For more details on habitat, threats, and trends, see the Utah Pronghorn Statewide Management Plan (UDWR 2017b). Pronghorn habitat covers nearly the entire TMA, except for some of its southeastern portions.

Approximately 409,131 acres of year-long pronghorn habitat exists within the TMA, approximately 229,281 acres of which are considered crucial (UDWR 2019). Pronghorn habitat is currently impacted by 1,174 miles of routes in or within ¼ mile.

- **Migratory Bird Habitat:** Various migratory birds (including raptors, waterfowl, game birds, 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). However, not all birds protected by the MBTA migrate. Some MBTA species are covered in the “Special Status Animals” section (3.2.7) in this EA; bald eagle, golden eagle, ferruginous hawk, burrowing owl, Mexican spotted owl, and yellow-billed cuckoo. In Utah, especially in the more arid areas, lowland riparian habitat is especially important for migratory bird species. Approximately 3,839 acres of riparian areas occur within the TMA, and is currently impacted by 193.6 miles in or within 660 feet of riparian areas. For more details on riparian areas in the TMA, see section 3.2.3. As part of addressing the MBTA, the BLM and USFWS have developed listings of Birds of Conservation Concern (BCC), which are high conservation priority MBTA species that are not already protected by the ESA. See Appendix K for a list of MBTA species present or potentially present in the TMA that are of particular concern because they are on the BCC list or warrant special attention in the TMA. For details on migratory bird habitat, threats, and trends in the TMA and PFO, see pages 3-55 to 3-59 of the Price Proposed RMP/EIS (BLM 2008b).

3.2.8.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

Potential effects that the use of the alternative route networks may have on general wildlife and migratory birds are consistent with the impacts outlined in greater detail within the section on special status animals (section 3.2.7) and include direct mortality or injury stemming from collisions with OHVs; behavioral modifications like increased flight and vigilance which place increased metabolic demands on individuals while simultaneously reducing their ability to access preferred foraging areas; noise disturbance which can impair important life cycle components like mating calls; prey sounds, or ability to detect predators; and alteration, fragmentation, and degradation of habitat caused by OHVs and other anthropogenic activities (Trombulak and Frissell 2000, FHWA 2004, USGS 2005, USGS 2007, Ortega 2012, Larson et al. 2016, Gutzwiller, D’Antonio, and Monz 2017, Jones et al. 2017). An additional consideration for big game, like the desert bighorn, mule deer, and pronghorn discussed in this section, is the use of OHV routes to facilitate both poaching and legal harvest of game species. OHV routes allow hunters and other non-consumptive recreationists to access greater percentages of the landscape relative to more traditional methods of travel because of the greater distances that can be covered (USGS 2005, USGS 2007). For more details on species-specific travel-related effects, see the Price Proposed RMP/EIS (BLM 2008b), the Utah Mule Deer Statewide Management Plan (UDWR 2014), the Utah Pronghorn Statewide Management Plan (UDWR 2017b), the USFWS’s Migratory Bird Program website (USFWS 2020), NatureServe Explorer (NSE 2019), and a series of scientific journal articles (Bedrosian 2012; Herring, Eagles-Smith, and Buck 2017; Kelly et al. 2011; McTee et al. 2017).

TMP implementation activities that could affect general wildlife, migratory birds, and their habitats include route maintenance (grading, installing water control structures, surfacing, etc.);

route reclamation (including ripping the ground and planting seed, grading/recontouring); or installing signs, fencing, or barriers (digging post holes). Seeding and planting on closed routes could accelerate reclamation and help to reestablish habitat. If implementation is proposed that requires new surface disturbance, additional site specific NEPA would be required before the activity could occur.

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

Impact Indicators

Table 3.23 below was used to inform effects analysis. The tables present three comparable metrics for judging evaluated route's potential to have effects on General Wildlife and Migratory Bird species across Alternatives. These metrics (Miles, Acres Affected, and Percent Affected) present data for both a broadscale and a species-level comparison between evaluated route's potential to impact animal species and their habitats. The metrics derived from the Utah state-designated and riparian area modeled habitat assume that the impacts associated with OHVs and other route-related anthropogenic disturbance will impact species evenly across the length of the route, the area of the route buffer, and within delineated habitat areas. These metrics are not intended to be applicable to fine-scale or site-specific impacts.

- **Miles:** Evaluated route miles that cross or affect habitat that falls within the species-specific effects buffer around open or undesignated routes. More miles equate to greater potential for the direct effects of OHV routes (vehicle collisions, injury, poaching, burrow or nest destruction, etc).
- **Acres Affected:** Acres of a species' modeled habitat within the species-specific route buffer around an Evaluated Route. This metric quantifies the acres of the TMA within a route's indirect effect zone of impact (increased vigilance, noise disturbance, increase in non-natives, habitat alteration, etc). In the summary section, averages are presented because species' habitats often overlap and calculating "total habitat" affected would result in more Acres Affected than there are acres within the TMA.
- **Percent:** Percentage of a species' modeled habitat that is potentially impacted by the direct and indirect effects associated with Evaluated Routes. This metric provides species-level context for assessing Acres Affected. For Example, "20,000 Desert Bighorn Sheep Acres Affected" would represent more than 73% of all the Desert Bighorn Sheep habitat within the TMA, but "20,000 Pronghorn Acres Affected" would account for less than 5% of all Pronghorn habitat within the TMA.

Table 3.23: Miles of OHV-Open or Limited and Other Available Routes, in or within Threatened or Endangered Species-Specific Route Buffers, Acres Affected by the Miles of Available Routes, and Percentage of Total Modeled Habitat Denoted by Acres Affected

Species	Habitat within TMA (acres)	Alt A OHV-Open and Other Evaluated Routes			Alt B OHV-Open and Limited Routes			Alt C OHV-Open and Limited Routes			Alt D OHV-Open and Limited Routes		
		Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent	Miles	Acres Affected	Percent
Desert Bighorn	27,360	27.1	3070.8	11.2%	14.1	2,709.3	9.9%	26.6	2,961	10.8%	27	2,962.2	10.8%
Mule Deer	56,359	192.7	18105.5	32.1%	81.5	10,705.5	19%	155.1	15,923	28.3%	171.6	17,236.7	30.6%
Pronghorn	409,130	1174	236,948	57.9%	314.1	91,405	22.3%	739.4	185,209	45.3%	859.5	202,456	49.5%
Migratory Birds	3,839	193.6	1,469.8	38.3%	80.3	350.5	9.1%	160.6	1,227	32%	175	1,415	36.9%

Previous sections (3.2.6 and 3.2.7) have presented quantifications of the alternatives’ direct and indirect footprints on the landscape, which are also presented below, but have not discussed other habitat metrics. The additional metric of Route Density will be considered in the Alternative summary sections below.

- **Route Density:** Route density is calculated by dividing the square miles of the habitat area by the miles of Evaluated Routes in the habitat for a given alternative. This metric provides another way of looking at the information previously presented and can be useful for comparing the Alternative’s impacts to habitat and species populations. It can also help illustrate which habitats are experiencing disproportionate impacts, which is indicated by a higher route density than the average for the alternative. (Wilderness Society 2006)

Also, under Alternative A, Other Evaluated Routes are included with designated OHV-open and BLM system and county roads because it is assumed that their use will continue due to lack of clarity of the network. For analysis purposes, the habitat that other evaluated routes pass through or influence is therefore considered subject to the effects, outlined above, that OHVs have on the natural environment and ecological communities.

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions. Numbers below illustrate the route network’s zone of effects.

- Area within 1/8 mile (660 feet): 144,823.5 acres, 32.9% of the TMA
- Area within a 1/4 mile (1,320 feet): 239,868.2 acres, 54.5% of the TMA
- Route Density: 1.72 miles of route per square mile of habitat

Species-specific information is included in the table above; however, an average of 86,041 acres (33.8%) of habitat is within 1/4 mile of a designated OHV-open or other available route per big game species. For migratory bird, Alternative A impacts 1,470 acres (38.3%) of modeled habitat

within 1/8 mile of a route. Alternative A leaves the most habitat exposed to OHV use and the OHV associated impacts outlined above (direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.).

- Desert Bighorn Habitat Route Density: 0.63
- Mule Deer Habitat Route Density: 2.19
- Pronghorn Habitat Route Density: 1.84
- Migratory Bird Habitat Route Density: 32.28

With its lack of comprehensive designations, Alternative A does little to reduce OHV use-related effects to general wildlife such as habitat fragmentation, collisions and mortality, breeding disruption, displacement, loss of security and foraging cover, etc. Overall Alternative A is projected to have little to no likelihood for minimizing adverse effects to general wildlife, migratory birds, and their associated habitats.

Alternative B

Under Alternative B in general wildlife and migratory bird habitats, 321 route miles would be designated OHV-open or OHV-limited and 859 route miles would be designated OHV-closed. Alternative B would result in a 72.8% reduction in OHV-open or OHV-limited route miles compared to Alternative A.

- Within 1/8 mile: 47,794.4 acres, 10.9% of the TMA, a 67% reduction.
- Within 1/4 mile: 94,133.2 acres, 21.4% of the TMA, a 60.8% reduction.
- Route Density: 0.47 miles of route per square mile of habitat, a 72.8% reduction.

Species-specific information is included in the table above; however, Alternative B impacts an average of 34,940 acres (17.1%) habitat within 1/4 mile of a route per big game species, which is a 59.4% reduction compared to Alternative A. For migratory bird habitat, Alternative B impacts 350.5 acres (9.1%) of modeled habitat within 1/8 mile of a route, a 76.2% reduction compared to Alternative A.

- Desert Bighorn Habitat Route Density: 0.33, a 48% reduction.
- Mule Deer Habitat Route Density: 0.93, a 57.7% reduction.
- Pronghorn Habitat Route Density: 0.49, a 73.2% reduction.
- Migratory Bird Habitat Route Density: 13.39, a 58.5% reduction.

Alternative B closes more evaluated route miles in or proximate to general wildlife and migratory bird habitats than Alternatives A, C, or D. Alternative B would be the most effective alternative at minimizing OHV use-related effects to general wildlife and migratory birds.

Alternative C

Under Alternative C in general wildlife and migratory bird habitats, 746 evaluated route miles would be designated OHV-open or OHV-limited and 434 route miles would be designated OHV-closed. Alternative C would result in a 32.7% reduction in available routes compared to Alternative A.

- Within 1/8 mile: 104,101.3 acres, 23.7% of the TMA, a 28.1% reduction.
- Within 1/4 mile: 188,013.5 acres, 42.8% of the TMA, a 21.6% reduction.
- Route Density: 1.09 miles of route per square mile of habitat, a 36.8% reduction.

Species-specific information is included in the table above; however, Alternative C impacts an average of 68,031 acres (28.1%) of habitat within ¼ mile of a route per big game species, a 20.9% reduction compared to Alternative A. For migratory bird habitat, Alternative C impacts 1,227 acres (32%) of modeled habitat within ⅛ mile of a route, a 16.5% reduction compared to Alternative A.

- Desert Bighorn Habitat Route Density: 0.62, a 1.8% reduction.
- Mule Deer Habitat Route Density: 1.76, a 19.5% reduction.
- Pronghorn Habitat Route Density: 1.16, a 37% reduction.
- Migratory Bird Habitat Route Density: 26.77, a 17% reduction.

Alternative C closes more evaluated route miles in or proximate to general wildlife and migratory bird habitats than Alternatives A and D, but fewer than Alternative B, with the exception of desert bighorn crucial habitat. These closures reduce the adverse effects on animal habitats which can result from OHV-facilitated use (collision and mortality, breeding disruption, and habitat fragmentation). Alternative C minimizes OHV use-related effects to general wildlife and migratory birds to a greater degree than Alternatives A and D, but to a lesser degree than Alternative B.

Alternative D

Under Alternative D in general wildlife and migratory bird habitats, 866 route miles would be designated OHV-open or OHV-limited and 314 route miles would be designated OHV-closed. Alternative D would result in a 26.6% reduction of available routes compared to Alternative A.

- Within ⅛ mile: 117,232.4 acres, 26.7% of the TMA, a 19.1% reduction.
- Within ¼ mile: 205,260.1 acres, 46.7% of the TMA, a 14.4% reduction.
- Route Density: 1.26 miles of route per square mile of habitat, a 26.6% reduction.

Species-specific information is included in the table above; however, Alternative D impacts an average of 74,218 acres (30.3%) of habitat within ¼ mile of a route per big game species, a 13.7% reduction when compared to Alternative A. For migratory bird habitat, Alternative D impacts 1,415 acres (36.9%) within ⅛ mile of a route, a 3.7% reduction compared to Alternative A.

- Desert Bighorn Habitat Route Density: 0.63, a 0.4% reduction.
- Mule Deer Habitat Route Density: 1.95, a 10.9% reduction.
- Pronghorn Habitat Route Density: 1.34, a 26.8% reduction.
- Migratory Bird Habitat Route Density: 29.17, a 9.6% reduction.

Alternative D designates more routes as closed than Alternative A, but fewer than Alternatives B and C. These closures are projected to reduce the adverse effects on plant habitats which can result from OHV-facilitated use (collision and mortality, breeding disruption, and habitat fragmentation). Alternative D minimizes OHV use-related effects to general wildlife and migratory birds to a greater degree than Alternative A, but to a lesser degree than Alternatives B and C.

Cumulative Effects

The cumulative impact analysis area for general wildlife and migratory birds is the TMA and the habitat areas adjacent to the TMA. This analysis boundary area, which includes migratory bird

habitat along the Green and San Rafael River watersheds and desert bighorn and pronghorn habitat within UDWR's San Rafael and La Sal Mountain Wildlife Management Units, captures the contiguous or crucial habitat used by potentially affected wildlife for breeding, nesting, migrating, and wintering.

Past, present, and reasonably foreseeable actions, plans, or projects impacting general wildlife and migratory birds in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers.

Cumulative effects to general wildlife and migratory birds from past, present, and reasonably foreseeable projects are similar to those discussed earlier for special status animals and include behavioral changes that result in 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; damage, loss of, fragmentation, or alteration to nesting, burrowing, brooding, and foraging habitat; and mortality.

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions, and an overall incremental change to general wildlife and migratory birds and their habitats within the cumulative effects analysis area is not anticipated.

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to general wildlife and migratory birds and their habitats by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to general wildlife and migratory birds and their habitats. Summarily, there would be no cumulative increase to impacts on general wildlife and migratory birds and their habitats within the cumulative effects analysis area from OHV travel under any action alternatives.

3.2.9 Lands with Wilderness Characteristics (LWCs)

How would alternatives minimize impacts to LWCs?

3.2.9.1 Affected Environment

LWCs have high degrees of naturalness, provide opportunities for solitude and primitive and unconfined recreation, and may have supplemental values (ecological, geological, or other scientific, educational, or historical values). They also contain at least 5,000 contiguous roadless acres or are of sufficient size to allow for their preservation and use in an unimpaired condition.

The TMA contains 11 LWC units that cover 230,488 TMA BLM acres and contain 525 evaluated route miles (approximately 44.5% of the total evaluated miles). For details on route designations by alternative for each LWC unit, see Appendix L.

- Labyrinth Canyon A: Inventoried in 2016, comprising 19,775 acres and containing 14.4 miles of existing routes. Supplemental values include scenic quality, historic sheep trails and homesteads, cultural sites, and rock art.
- Labyrinth Canyon B: Inventoried in 2016, comprising 11,077 acres and containing 0.0 miles of existing routes. Supplemental values include scenic quality, historic features, rock art, cultural sites, and extensive riparian areas along the river and tributaries.
- San Rafael River A: Inventoried in 2016, comprising 6,355 acres and containing 14.6 miles of existing routes. Supplemental values include cultural resources and prehistoric and historic artifact scatters.
- San Rafael River B: Inventoried in 2016, comprising 24,248 acres and containing 71.4 miles of existing routes. Supplemental values include cultural resources, lithic scatters, rock art, historic corral, and diverse habitat including extensive riparian areas.
- San Rafael River C: Inventoried in 2016, comprising 7,163 acres and containing 11.9 miles of existing routes. Supplemental values include cultural resources, lithic scatters, rock art, and historic cabins and corrals.
- San Rafael River D: Inventoried in 2016, comprising 66,849 acres and containing 145.2 miles of existing routes. Supplemental values include cultural resources, lithic scatters, rock art, and historic cabins and corrals.
- San Rafael River E: Inventoried in 2016, comprising 9,201 acres and containing 9.9 miles of existing routes. Supplemental values include cultural resources and lithic scatters.
- Sweetwater Reef A: Inventoried in 2016, comprising 69,348 acres and containing 185.4 miles of existing routes. Supplemental values include lithic scatters, rock art, and historic cabins and corrals located near springs.
- Unit 005: Inventoried in 2016, comprising 5,616 acres and containing 26.4 miles of existing routes. Supplemental values include paleontological and cultural resources.
- Unit 006: Inventoried in 2016, comprising 9,112 acres and containing 20.0 miles of existing routes. There are no identified supplemental values.
- Unit 007: Inventoried in 2016, comprising 8,694 acres and containing 14.7 miles of existing routes. Supplemental values include cultural and paleontological resources.

Two LWCs (Sweetwater Reef A and Labyrinth Canyon B) extend south into the Richfield Field Office's jurisdiction. The Labyrinth Canyon A and Labyrinth Canyon B LWCs are within the Labyrinth Wilderness. Current LWC boundaries are based on inventories completed in 2018 and differ from the LWC boundaries that were presented in the Price Proposed RMP/EIS (BLM 2008b). Note: The BLM conducts inventories for presence of LWCs, then decisions are made at the RMP level as to whether or not the BLM will manage specifically to protect, preserve, and maintain the wilderness characteristics in a given area. For inventoried LWCs in this TMA, the BLM, in the 2008 RMP, decided to manage them for multiple uses rather than solely to protect, preserve, and maintain their wilderness characteristics (2008 RMP pages 3-63 to 3-65). The Price Proposed RMP/EIS LWCs were not carried forward into the Final 2008 RMP and the BLM decided to manage them for multiple uses rather than manage them solely to maintain their

wilderness characteristics (BLM 2008c). See pages 3-63 to 3-65 of the Price Proposed RMP/EIS for more information on those LWCs.

3.2.9.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

Consistent with BLM Manual 6310, “Human impacts outside the area will not normally be considered in assessing the naturalness of the area” (BLM 2012, page 7). Also, as directed in BLM Manual 6310, “Caution should be used in assessing the effect of relatively minor human impacts on naturalness. Avoid an overly strict approach to assessing naturalness” (page 7). The assumption is that the continued use of a route, in the same manner and degree as at the time of inventory, would not substantially contribute to impacts to the LWC. Activity that occurs on cherry-stemmed routes technically occurs outside the LWC unit. Recreation activity such as dispersed roadside camping and parking off a designated route may occur along cherry-stemmed routes where it has occurred in the past. However, wilderness characteristics were found in the units regardless of this casual use. In addition, since wilderness characteristics were found to exist despite the existing routes, the existence of the route does not impact the naturalness, size, or supplemental values. Therefore, potential effects that OHV use of the evaluated routes may have on LWCs include degradation or loss of solitude, or primitive recreation as more users access these areas resulting in more frequent human encounters, more noise, and loss of opportunity to experience primitive recreation during the duration of the travel-related activity. Since cherry-stemmed routes are not considered to be inside LWC units, the use of cherry-stemmed routes does not contribute to impacts to LWC units. OHV access and the presence of OHVs could also lead to a loss of solitude and opportunity to experience primitive recreation. Travel route designations that reduce, restrict, or eliminate OHV use in the LWC would reduce the OHV-related effects of noise and loss of solitude and primitive recreation and could help reduce the overall network footprint within or near LWC areas. Limiting OHV use to open routes or limiting them by OHV type would confine soil and vegetation disturbance caused by OHVs to existing routes, and result in no additional change to the natural character of the LWC lands. Implementation actions for closed routes could include the placement of closure signs, reclamation, or installation of barricades. For routes designated for OHV use (OHV-open or OHV-limited), actions may include signing and maintenance conducted with hand tools or machinery. The effects of these implementation actions include short term effects from noise and loss of solitude for the duration of the implementing action (for example, the installation of the sign, or the reclamation of the route). Route closure will reduce the overall footprint of the route network in the natural areas. In some cases, designating routes for OHV use could result in enhanced network operation and maintenance, helping to better manage OHV-related disturbances on the landscape. In all cases, more site-specific NEPA analysis for maintenance activities that might occur outside of the existing travel route footprint would be conducted as needed.

Route networks with OHV-open or OHV-limited designations can contribute to the perpetuation of OHV-use related effects as previously disclosed. Conversely, OHV-closed and OHV-limited designations that prohibit OHV use wholly or in part can reduce or eliminate the perpetuation of the OHV-use effects.

Impact Indicators

Many evaluated routes in the LWC units are not cherry-stemmed. Table 3.24, below, informs the effects analysis. It shows evaluated route miles that are within LWCs as represented by GIS data. Such evaluated miles were used as indicators of an alternative’s impact to LWCs. For details on miles and designations for each LWC unit individually, see Appendix L.

Table 3.24: Miles in LWCs
(the far-left column notes the miles and percentages of total evaluated route miles in LWC overall)

	Designation	Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Lands with Wilderness Characteristics (513.8 miles; 43.5% of Evaluated Routes)	OHV-Open	37.7	7.3%	4.8	0.9%	186.8	36.4%	249.3	48.5%
	OHV-Limited	0.0	0.0%	0.0	0.0%	63.2	12.3%	63.1	12.3%
	OHV-Closed	0.0	0.0%	508.9	99.1%	263.8	51.3%	201.4	39.2%
	Other Evaluated Routes	476.1	92.7%	-	-	-	-	-	-

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions and would not reduce or minimize OHV use-related effects to LWCs.

Alternative B

Under Alternative B, 508.9 miles, or 99.1%, of evaluated routes in LWCs would be designated OHV-closed. The closure of these routes would likely reduce OHV use-related effects to LWCs. Alternative B would close the greatest number of evaluated route miles in LWCs, and would likely have the greatest reduction of the aforementioned OHV use-related effects to LWCs when compared to Alternatives, A, C, and D.

Alternative C

Under Alternative C, 263.8 miles, or 51.3%, of evaluated routes in LWCs would be designated OHV-closed. The closure of these routes would likely reduce the aforementioned OHV use-related effects to LWCs. While Alternative C would close fewer route miles in LWCs than Alternative B, it would close more route miles than both Alternatives A and D, and likely have reduced OHV use-related effects to LWCs when compared to Alternatives A and D.

Alternative D

Under Alternative D, 201 miles, or 39.1%, of evaluated routes in LWCs would be designated OHV-closed. The closure of these routes would likely reduce OHV use-related effects to LWCs, as detailed in Section 3.2.9.2. While Alternative D closes the fewest number of evaluated route miles among the action alternatives, the proposed closures would likely reduce the aforementioned OHV use-related effects to LWCs when compared to the likely effects of Alternative A.

Cumulative Effects

The geographic scope of cumulative effects analysis is the LWC unit boundaries in the TMA as well as the Sweetwater Reef A and Labyrinth Canyon B LWC areas that extend from the TMA

into the Richfield Field Office's management jurisdiction south of the TMA. This scope was chosen because LWC inventories identified wilderness characteristics that are within these units, and, by definition, activities occurring outside the boundaries do not affect wilderness characteristics inside the boundaries. However, much of the entire TMA lies within inventoried LWCs.

Past, present, and reasonably foreseeable actions, plans, or projects impacting LWCs in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers. Although the impacts to land with wilderness characteristics will be less than the impacts to the overall TMA, using this TMA cumulative action description makes it easier to account for cumulative effects like invasive weeds, fugitive dust, and noise.

The LWC units were found to contain wilderness characteristics despite the existence and maintenance of the existing routes. Therefore, cumulative impacts include noise and loss of solitude during the duration of the vehicle travel-related activity. Ongoing vehicle travel-related activities degrade wilderness characteristics through noise and loss of solitude during the time of the activity.

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

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to LWCs and their wilderness characteristics by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to LWCs and their wilderness characteristics. Summarily, there would be no cumulative increase to impacts on LWCs and their wilderness characteristics within the cumulative effects analysis area from OHV travel under any action alternatives.

3.2.10 Visual Resources

How would the alternatives minimize impacts to visual resources?

3.2.10.1 Affected Environment

Visual resources in the TMA are located within a mostly natural landscape featuring a flat plateau cut by valleys and canyons. The TMA also has red rock outcrops and buttes, two rivers

with scenic desert corridors, proximity to renowned night sky viewing areas, and high points offering 360-degree views and views of distant peaks.

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

Visual resources in the TMA are managed in accordance with the 2008 RMP. Visual resource management (VRM) is a process the BLM uses to identify and 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, and Class IV is assigned to areas where decisions have been made to provide for activities that involve major landscape character modification. VRM classes are assigned through RMPs and can be used as a basis for management (BLM 1986).

TMA BLM lands have been assigned to visual resource classes under both the VRI and VRM systems. The areas of highest visual quality as identified by the Price inventory are VRI II along the Green River, VRI II and III along Highway 24, VRI III along Interstate 70, and VRI I, II and III in the designated wilderness. The remainder of the TMA is VRI IV. Similarly, VRM II exists along the Green River, VRM II and III exists in the designated wilderness, and VRM III exists at the junction of Interstate 70 and Highway 24. The remainder of the TMA is VRM IV. For more details on visual resources management in the PFO and TMA, see pages 3-34 to 3-36 of the Price Proposed RMP/EIS (BLM 2008b). For more details on visual resource classes and how they are determined, see the BLM's Visual Resource Inventory manual (BLM 1986). For more details on the visual resource inventory that covers the project area, see the BLM's Visual Resource Inventory for Price Field Office dated November 2011.

3.2.10.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

Potential effects that the alternatives and related use may have on visual resources include degradation of visual quality from perpetuation of disruption to the natural appearance of landscapes when the routes do not follow natural landscape contours or change natural color and form from road cuts and fills and from OHV presence during time of use. Other route use-related activities that can affect visual resources include littering and dumping, invasive or noxious weed expansion, and erosion scars.

TMP implementation activities that could affect visual resources include route maintenance (surface and ditch grading and drainage structure replacement or installation), ripping and

seeding closed routes, and sign placement (digging post holes). Seeding and planting on closed routes could accelerate reclamation and help to reestablish form, line, and color. If implementation is proposed that requires new surface disturbance, additional site-specific NEPA would be required before the activity could occur.

Alternatives with OHV-open or OHV-limited designations can contribute to the perpetuation of OHV use-related effects as previously disclosed. Conversely, OHV-closed and OHV-limited designations that prohibit OHV use wholly or in part can reduce or eliminate the perpetuation of the OHV use-effects, thereby benefitting visual resources.

Impact Indicators

Tables 3.25 and 3.26, below, inform the effects analysis. They present the miles of routes in VRI and VRM Classes II in the TMA. Only 0.4 miles of evaluated routes are in VRM Class I, and they are closed in all action alternatives. Only 2.8 *feet* of open routes are in VRI Class I, so any impacts would be negligible, and are not analyzed further. Analysis was not based on VRM classes III and IV because they allow for changes in form, line, and color. Therefore, they would not be as useful for informing analysis of potential adverse impacts.

Table 3.25: Miles in Class II VRM Lands

(the far-left column notes the miles and percentages of total evaluated routes that are in VRM Class II lands)

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
VRM Class II (27 miles; 2.3% of Evaluated Routes)	OHV-Open	8.6	31.7%	14.3	52.8%	22.3	82.7%	23.1	85.3%
	OHV-Limited	0.0	0.0%	0.0	0.0%	0.2	0.6%	0.2	0.9%
	OHV-Closed	0.0	0.0%	12.8	47.2%	4.5	16.7%	3.7	13.8%
	Other Evaluated Routes	18.5	68.3%	-	-	-	-	-	-

Table 3.26: Miles in Class II VRI Lands

(the far-left column notes the miles and percentages of total evaluated routes that are in VRI Class II lands)

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
VRI Class II (50.7 miles; 4.3% of Evaluated Routes)	OHV-Open	17.6	34.8%	17.6	34.7%	29.4	58.0%	33.6	66.4%
	OHV-Limited	0.0	0.0%	0.0	0.0%	11.3	22.3%	8.5	16.8%
	OHV-Closed	0.0	0.0%	33.1	65.3%	10.0	19.7%	8.5	16.8%
	Other Evaluated Routes	33.0	65.2%	-	-	-	-	-	-

Alternative A (Current Condition)

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

Alternative A would allow for the most OHV use in VRI and VRM Class II areas within the TMA, and therefore has the least likelihood to minimize adverse effects to visual resources among the alternatives.

Alternative B

Under Alternative B the aforementioned effects from OHV use and maintenance of the routes would continue to occur on those routes designated OHV-open or OHV-limited. Alternative B would designate the least number of routes as available for OHV use in VRI and VRM Class II areas within the TMA, and therefore does the most to minimize adverse effects to visual resources among the alternatives.

Alternative C

Under Alternative C the aforementioned effects from OHV use and maintenance of the routes would continue to occur on those routes designated OHV-open or OHV-limited. Alternative C does more to minimize adverse effects to visual resources than Alternatives A and D, but less than Alternative B.

Alternative D

Under Alternative D the aforementioned effects from OHV use and maintenance of the routes would continue to occur on those routes designated OHV-open or OHV-limited. Alternative D does more to minimize adverse effects to visual resources than Alternative A, but less than Alternatives B and C.

Cumulative Effects

The geographic scope of cumulative effects analysis is bounded to the east by the Green River's east canyon rim, to the south by the TMA boundary, to the north by I-70, and to the west by State Highway 24 to Goblin Valley Road. This scope was chosen because on the eastern side of the TMA, high quality visual values can be seen from a great distance; to the south and west, there is nothing significant in the foreground or midground compared to the visual quality in the TMA; and to the north it is interrupted by the city of Green River and the I-70 corridor.

Past, present, and reasonably foreseeable actions, plans, or projects impacting visual resources in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other OHV access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers.

The VRI I and II areas were found to contain high quality visual resources despite the existing routes. Likewise, the VRM I and II areas are managed for high quality visual resources despite the existing routes. The VRM classes III and IV allow for changes in form line and color. Therefore, cumulative impacts include changes in form, line, or color of the landscape from maintenance and use of existing routes for OHV travel and related activities and other authorized access. 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.

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

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to visual resources by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to visual resources. Summarily, there would be no cumulative increase to impacts on visual resources within the cumulative effects analysis area from OHV travel under any of the action alternatives.

3.3 Key Issue 2: Providing for safe recreation opportunities and experiences while reducing conflicts between recreation users and authorized users

3.3.1 Recreation

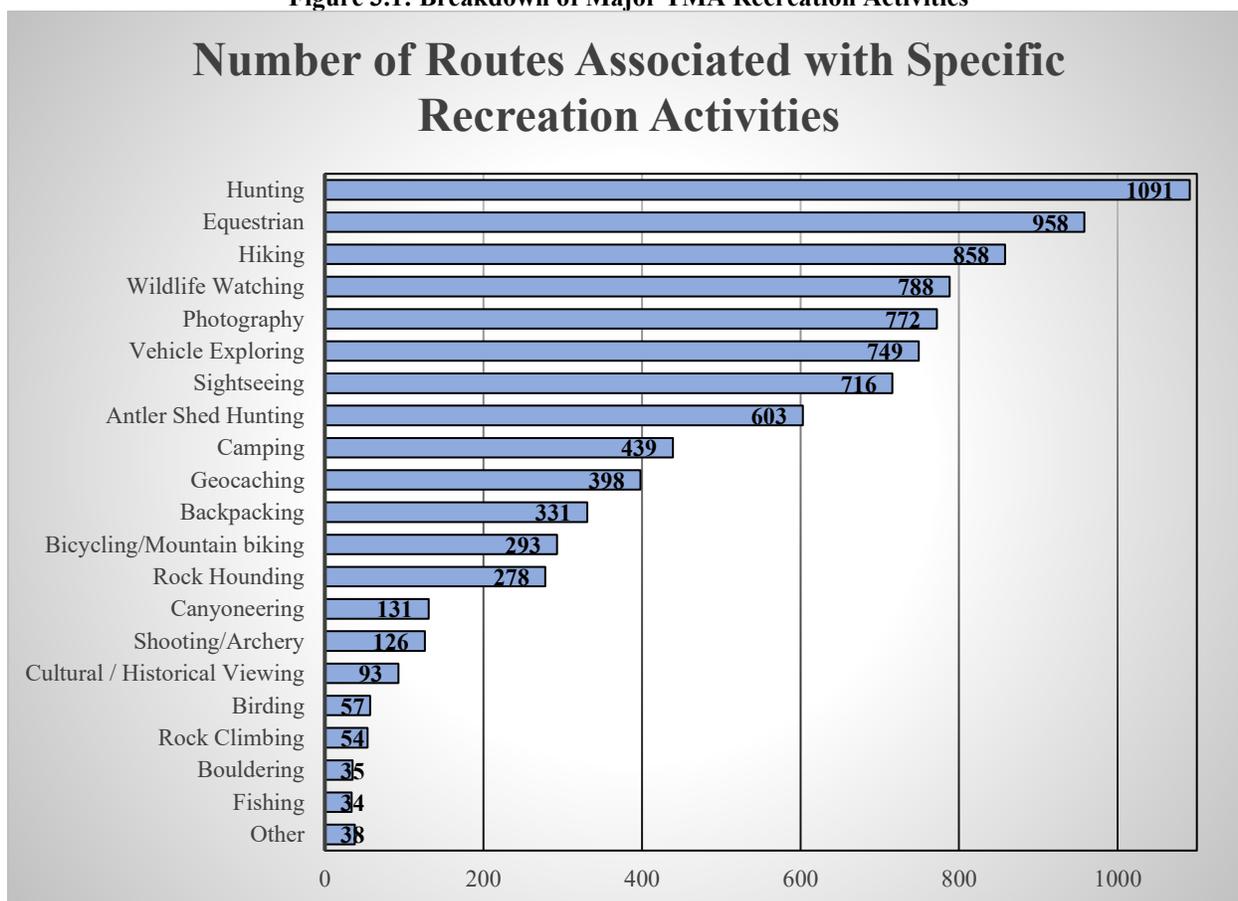
How would recreation experiences be impacted by the proposed route designation alternatives?

3.3.1.1 Affected Environment

The 1180.8 existing miles of evaluated routes in the TMA largely originated from mining, ranching, and recreation-related activities. As discussed in section 1.1, approximately 55% of the TMA was designated as open to cross country travel in a 1991 RMP, which resulted in the lawful establishment of new routes. The 2008 RMP limited travel in that area to designated routes but did not formally designate any existing routes within the former open area as open, limited or closed to OHV use. Recreation opportunities on TMA BLM lands originate on, or are accessed by, those existing routes to the extent that they are suitable for travel by 4WD OHVs, 2WD OHVs, ATVs, UTVs, motorcycles, horses, or hikers.

Developed recreation facilities in the TMA include kiosks, signs, Junes Bottom Trailhead, and Five Hole Arch Trailhead. Various modes of recreation—both motorized and nonmotorized—occur throughout the TMA. Some OHV users seek motorized experiences on the evaluated routes as their primary form of recreation activity. For others, the evaluated routes provide access to locations for other forms of recreation such as hiking or camping. In either case, the evaluated routes are critical to maintain and provide a diverse array of recreation opportunities and experiences, including common recreation activities such as driving for pleasure, ATV/UTV riding, hunting, horseback riding, hiking, wildlife watching, and dispersed camping. Less common forms of recreation associated with evaluated routes include sledding, hang gliding, base jumping, and river running. Figure 3.1 below shows the number of evaluated routes associated with specific recreation activities other than OHV use itself, which may occur on some or all evaluated routes in the TMA. Most routes are associated with more than one recreation activity. Mine-related hazards can impact the safety of recreation, and 21 evaluated routes are within ¼ mile of mine-related hazards. For more information on recreation in the PFO and TMA, see pages 3-72 to 3-76 of the Price Proposed RMP/EIS.

Figure 3.1: Breakdown of Major TMA Recreation Activities



Note: A breakdown of activities grouped into the “Other” category can be found in Appendix M: Number of Routes Providing Access to Scarce Recreation Opportunities in the TMA

Approximately 19 miles of the evaluated routes are in the Labyrinth Canyon Special Recreation Management Area (SRMA), and 10 evaluated routes lead to the SRMA. This SRMA “has unique cultural landscape features” and its 64-mile flatwater river segment “traverses open rolling terrain and transitions into a deeply incised dramatic canyon” (BLM 2015). Primary recreation activities that fall under BLM targeted outcomes for this SRMA include backcountry river-running and hiking, rock art viewing, cultural site visitation, swimming, and camping (BLM 2008c).

3.3.1.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

The direct effects that the alternatives would have on recreation are reduced or increased access for desired or actual recreation opportunities and experiences as well as reduced or increased use conflicts with other travel route users seeking different experiences. Routes designated OHV-open would benefit OHV users and OHV-facilitated recreational activities (including recreationists who cannot access public lands except by vehicle or OHV due to physiological restrictions) by providing OHV access, but could be detrimental to recreationists that value non-motorized forms of recreation due to noise or other impacts from OHV use. Routes designated OHV-closed would not benefit OHV users or OHV-facilitated recreational activities because

OHV access would be prohibited, but the closure could benefit recreationists who prefer non-motorized access and recreation. Recreation users seeking non-motorized recreation experiences and opportunities such as those shown in Figure 3.1 (e.g., equestrian, hiking, etc.), may also use the open and limited OHV routes and will use them to access preferred recreation locations. Mixing user types may jeopardize user safety when there is inadequate sight or stopping distance or when different users encounter one another. For example, OHV users could encounter mountain bike users on a blind corner or hill, or dirt bike users could panic equestrians' horses. Also, designations limiting OHV access to a particular OHV type would preclude the restricted OHV type and their users from that route but would provide unique OHV opportunities for the allowed OHV type by reducing or preventing intra-OHV conflicts. All the alternatives would contribute varying degrees of access for a variety of recreational activities which may rely on or be facilitated by OHV access. Current and future recreational use is not anticipated to decrease under any alternative so alternatives with fewer OHV-open miles could accumulate OHV users on open or limited routes, increasing potential for user conflicts. Route designations could also contribute to recreation users' exposure to safety hazards (e.g., some routes may lead to abandoned mines). Designating evaluated routes as OHV-open or OHV-limited exposes users to hazards associated with mines, such as falls into mine shafts, shaft cave-ins, hazardous chemicals or equipment at mine sites, etc. Designating routes as OHV-closed prevents OHV access altogether, though non-OHV access could still occur.

Continued OHV use of routes within the SRMA may diminish the unique cultural and heritage experiences associated with this SRMA as well as the variety of other non-motorized recreation such as backcountry river-running, hiking, rock art viewing, cultural site visitation, swimming, and camping. and hiking. However, limiting or closing those routes could restrict OHV-facilitated access to locations that provide those same forms of recreation.

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

In the TMA, roadside camping would be allowed within 30 meters on either side of the centerline of designated routes that are open to public use, unless otherwise indicated. The 2008 RMP allows "dispersed camping throughout the PFO without permit, unless otherwise designated by the BLM" (BLM 2008b). The same decision also states, "Determine and designate areas for dispersed camping and associated access routes with the cooperation of the counties" (BLM 2008b). OHV access to roadside dispersed camp sites may only occur where there is evidence the site has been used in the past. Examples of this may include (but are not limited to) vehicle tracks, rock fire rings, parking areas, etc. This does not apply to areas where motorized travel is prohibited (e.g., Wilderness areas).

Impact Indicators

Table 2.1 (repeated here from Chapter 2) presents total proposed evaluated route miles as an indicator of overall OHV access to and within the San Rafael TMA. Table 3.27 refines the proposed mileage to detail proposed limitations for specific OHV modes of travel to indicate how alternatives may differ in facilitating diverse and unique OHV recreation outcomes. Table 3.28 presents the number of evaluated routes, by designation, that may expose users to known mine-related hazards. Table 3.29 details evaluated routes proposed for designation within the Labyrinth Canyon SRMA to indicate how alternatives may differentially impact recreation opportunities within the SRMA.

Table 2.1: Miles of Routes by Designation and Alternative

(the far-left column notes 1,180.8 total evaluated miles in each alternative; percentages are % of total evaluated route miles)

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
All Routes (1180.8 miles; 100.0% of Evaluated Routes)	OHV-Open	302.6	25.6%	331.9	28.1%	636.3	53.9%	746.8	63.3%
	OHV-Limited	0.0	0.0%	5.4	0.5%	119.6	10.1%	120.5	10.2%
	OHV-Closed	0.0	0.0%	843.3	71.4%	424.8	36.0%	313.3	26.5%
	Other Evaluated Routes	878.0	74.4%	-	-	-	-	-	-

Table 3.27: Miles of Evaluated Routes Limited to Specific OHV Travel Modes

OHV Limit	Alt. A Miles	Alt. B Miles	Alt. C Miles	Alt. D Miles
UTV	0	5.4	18.9	36.8
ATV	0	0	14.8	7.8
Singletrack	0	0.0	85.9	75.9
Total	0	5.4	119.6	120.5

Table 3.28: Number of Evaluated Routes Leading to or within ¼ Mile of Mine-Related Hazards

(the far-left column notes the miles and percentages of total evaluated routes that are within ¼ mile of mine-related hazards)

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent
Mine-Related Hazard (21 routes; 1.8% of Evaluated Route)	OHV-Open	5	23.8%	5	23.8%	9	42.9%	13	61.9%
	OHV-Limited	0	0.0%	0	0.0%	2	9.5%	0	0.0%
	OHV-Closed	0	0.0%	16	76.2%	10	47.6%	8	38.1%
	Other Evaluated Routes	16	76.2%	-	-	-	-	-	-

Table 3.29: Number of Routes Leading to the Labyrinth Canyon SRMA
 (the far-left column notes the miles and percentages of total evaluated routes leading to the SRMA)

	Designation	Alt. A		Alt. B		Alt. C		Alt. D	
		Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent
Labyrinth Canyon SRMA (10 routes; 0.9% of Evaluated Routes)	OHV-Open	6	60.0%	7	70.0%	9	90.0%	9	90.0%
	OHV-Limited	0	0.0%	0	0.0%	1	10.0%	1	10.0%
	OHV-Closed	0	0.0%	3	30.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	4	40.0%	-	-	-	-	-	-

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions. Alternative A would not specify modes of travel on any routes, and would not reduce user conflicts. Alternative A does the least to reduce exposure to mining-related hazards of the alternatives. Also, Alternative A would be the least restrictive to OHV use within the Labyrinth Canyon SRMA. While this allowance may lead to user conflicts, it may also enhance OHV-facilitated access into the SRMA.

Alternative B

Alternative B would designate the least number of miles as available for OHV use within the TMA, and therefore be the most restrictive for OHV access in all alternatives. The restriction of OHV access would likely reduce the potential of OHV and non-motorized user conflicts. While Alternative B would provide for single-track-specific and UTV-specific routes, it would provide fewer specific motorized recreation opportunities compared to Alternatives C and D. Alternative B would reduce exposure to mining-related hazards more than Alternatives A, C, and D. Also, Alternative B would be the most restrictive to OHV use within the Labyrinth Canyon SRMA. While this restriction may reduce user conflicts, it may also limit OHV-facilitated access into the SRMA for a diversity of other recreation experiences.

Alternative B is the only alternative with potential to lead to accumulation of OHV users due to its closure of routes that are currently receiving at least some level of use.

Alternative C

Alternative C would provide more miles as available for OHV use within the TMA than Alternative B, but fewer than Alternatives A or D. The restriction of OHV access would likely reduce the potential of OHV and non-motorized user conflicts to a lesser degree than alternative B, but to a greater degree than Alternatives A and D. Alternative C would provide for more single-track specific and UTV-specific routes than Alternatives A and B, but fewer than Alternative D. Alternative C would reduce exposure to mining-related hazards more than Alternative D, but less than Alternatives A and B. Alternative C would provide fewer miles available for OHV use to and within the Labyrinth SRMA than Alternatives A and D, but more than Alternative B.

Alternative D

Alternative D would designate more miles as available for OHV use within the TMA than Alternatives B and C, but leave fewer miles available to OHV use than Alternative A. The restriction of OHV access would likely reduce the potential of OHV and non-motorized user conflicts to a lesser degree than alternative B and C, but to a greater degree than Alternative A. Alternative D would provide for more singletrack-specific and UTV-specific routes than the other Alternatives. Alternative D would reduce exposure to mining-related hazards more than Alternative A, but less than Alternatives B and C. Alternative D would provide fewer miles available for OHV use to and within the Labyrinth SRMA than Alternative A, but more than Alternatives B and C. While this restriction may reduce user conflicts to a lesser degree than Alternatives B and C, it may also enhance OHV-facilitated access into the SRMA for a diversity of recreation experiences.

Cumulative Effects

The geographic scope of cumulative effects analysis includes the TMA plus lands to the west extending to the eastern face of the San Rafael Reef geological unit, and lands to the south into Wayne County to the Lower San Rafael Road (EM 1010) to a point where it loops back into the TMA. The western boundary extension was chosen because recreation activities occur on both sides of Highway 24 simultaneously, and not independently. The southern boundary extension was chosen because this is a popular loop route for recreationists.

Past, present, and reasonably foreseeable actions, plans, or projects impacting recreation in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers.

Cumulative effects to recreation and the SRMA arise from conflicts with other routes users including recreationists, grazing permittees, mineral lessees or permittees, and landowners. The conflicts occur between different types of recreationists on a single route as previously described. Cumulative conflicts from other authorized users of the cumulative impact area can intensify these conflicts given that some of the users (for example, grazing permittees and mineral lessees or permittees) may be driving larger vehicles such as livestock semi-trucks; a larger number of vehicles such as rig transport and crew vehicles needed to drill an oil well, which can further crowd the routes which access recreation opportunities; or heavy equipment transportation such as graders or dozers. Cumulative safety impacts include 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).

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions. Alternatives B-D clarify the route network, facilitate enforcement, and would provide for travel on designated OHV-open or OHV-limited routes. Alternatives B-D reduce cumulative travel-related effects on recreation

proportional to the designated OHV-limited or closed miles of routes because those designations limit or exclude OHV-related human activity. Proportional to their limitations or closures, Alternatives B-D would provide incremental benefits to non-motorized forms of recreation when added to other past, present, or reasonably foreseeable actions, plans, or projects, but concentrate present and foreseeable OHV use on open and limited routes proportional to the closures.

3.3.2 Livestock Grazing

How would the proposed route designations impact livestock grazing operations?

3.3.2.1 Affected Environment

Nearly the entire TMA (except for some lands near the far southeastern boundary) and its 1,180.8 miles of evaluated routes overlap livestock grazing allotments. All 10 grazing allotments in the TMA are available for grazing and authorized for use by cattle (BLM 2019). Based on BLM GIS data, the TMA BLM lands contain 67 range improvement sites (many of which are water sources), approximately 89 miles of linear range improvement features (many of which are fences), and approximately 9 miles of range administrative routes. Also, 207 routes (18.2% of the network) provide access to corrals, gates, cattleguards, salt licks, tanks/troughs, or windmills/wells. Routes in the area are utilized by grazing permittees and BLM range staff for compliance checks, monitoring, range improvement inspections, and range improvement project maintenance. For overall details on livestock grazing in the PFO, see pages 3-66 to 3-72 of the Price Proposed RMP/EIS (BLM 2008b). For more details on the specific allotments in the TMA (Buckmaster, Dugout, Horsebench, Iron Wash, Jeffery Well, Little Valley, Pasture Canyon, San Rafael River, Saucer Basin, and Sweetwater), see the reports available through the BLM's Rangeland Administration System (RAS) at <https://reports.blm.gov/reports/ras/> (BLM 2019).

3.3.2.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

All of the alternatives may present conditions of conflict between recreation users and livestock operators (i.e., vandalism to facilities, open gates, OHV collisions with grazing animals, disturbance and displacement of grazing animals from OHV and recreation use, etc.). Heavy OHV traffic can interfere with cattle truck or water truck access to the allotments or livestock (blocking routes or access gates for instance). OHV use of routes can also contribute to proliferation of invasive species and noxious weeds in rangelands via transportation of weed seeds on OHV undercarriages and tires. These invasive species and weeds can outcompete native vegetation for available nutrients and impair forage quality for grazing. Some of these weeds are toxic to livestock. For details on the alternatives' impacts on invasive and noxious weeds, see section 3.2.5. 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 would 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 because the grazing permit authorizes such access. The need for continued authorized use is why a route that is closed to OHV access may not be reclaimed, which is why sign installation is an integral part of TMP implementation.

TMP implementation activities that could affect livestock grazing include route maintenance (surface and ditch grading and drainage structure replacement or installation, etc.), ripping and seeding closed routes, and sign placement (digging post holes). Active reclamation of closed routes could accelerate reclamation and help to reestablish browse for the livestock but could also limit the permittee’s ability to access straying livestock. However, routes that exist for other authorized uses, such as access to livestock facilities, would not be reclaimed. In such a case, sign installation would direct recreationists to their destinations and educate recreationists on allowable uses for a particular route. If implementation is proposed that requires new surface disturbance, additional site specific NEPA analysis would be required before the activity could occur.

Impact Indicators

Table 3.30, below, informs the effects analysis by presenting the numbers of evaluated routes which provide key access to range improvements. These evaluated routes are an indicator of the continuation or reduction (OHV-limited or closed) of effects the alternatives may have on both range improvements and livestock itself, which may often be concentrated at/near certain improvements (e.g., salt licks).

Table 3.30: Number of Routes Providing Access to Corrals, Gates, Cattleguards, Salt Licks, Tanks/Troughs, or Windmills/Wells

(the far-left column notes the miles and percentages of total evaluated routes associated with range improvements)

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent
Range Improvements (207 routes; 18.2% of Evaluated Routes)	OHV-Open	83	40.1%	77	37.2%	166	80.2%	189	91.3%
	OHV-Limited	0	0.0%	0	0.0%	5	2.4%	4	1.9%
	OHV-Closed	0	0.0%	130	62.8%	36	17.4%	14	6.8%
	Other Evaluated Routes	124	59.9%	-	-	-	-	-	-

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. The effects described above from OHV use and maintenance of the routes would continue to occur on these routes. Consequently, Alternative A is not expected to reduce conflicts with grazing.

Alternative B

Under Alternative B the most evaluated routes providing access to key range improvements are unavailable for OHV use. Consequently, Alternative B is expected to have the least adverse effects to livestock grazing, but also reduces the ease of access for allotment management to the greatest degree of the alternatives.

Alternative C

Alternative C is expected to reduce adverse effects to livestock grazing to a greater degree than Alternatives A and D, but to a lesser degree than Alternative B. Alternative C also reduces the ease of access for allotment management to a greater degree than Alternatives A and D, but to a lesser degree than Alternative B.

Alternative D

Alternative D is expected to reduce adverse effects to livestock grazing to a greater degree than Alternative A, but to a lesser degree than Alternatives B and C. Alternative D also reduces the ease of access for allotment management to a greater degree than Alternatives B and C, but to a lesser degree than Alternative A.

Cumulative Effects

The geographic scope of cumulative effects analysis for livestock management is comprised of all the grazing allotments that overlap the TMA. This scope was chosen because public OHV use of the routes within those allotments can affect the permittees' ability to manage their livestock on those allotments (e.g., recreation users leaving gates open when livestock are present).

Past, present, and reasonably foreseeable actions, plans, or projects impacting livestock grazing in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers. They also include an inventory of range improvements (and access routes to them) which will be completed in the Labyrinth Canyon Wilderness Area in compliance with the John D. Dingell, Jr. Conservation, Management, and Recreation Act.

Cumulative effects to livestock management from past, present, and reasonably foreseeable actions include disruption to livestock and rangelands from vehicle use whether authorized or recreational, weed spread, herd or trailing disruptions by vehicles, interference with or vandalism of range facilities, and conflicts between route users due to large numbers of users (such as are needed to drill an oil well) or size of vehicles (such as cattle trucks) on the same route as the permittees.

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

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to rangeland and grazing operations by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to rangeland and grazing operations. Summarily, there would be no cumulative increase to impacts on rangeland or grazing operations within the cumulative effects analysis area from OHV travel under any of the action alternatives.

3.3.3 Minerals

How would proposed route designation alternatives impact mineral development?

3.3.3.1 Affected Environment

Note: Access to leased, patented, or permitted mineral development sites in the TMA is included in the sites' plan of operations and is not changed by any OHV designations resulting from this project.

Within the TMA, there are 18 oil and gas leases and 60 oil and gas wells that have been plugged and abandoned. Therefore, they are not considered in this EA. The TMA also contains 45 uranium mining claims and 10 mineral material sites (sand, gravel, and stone). Uranium development occurs in the TMA and may expand in the future. Mineral material sites are further divided into community pits, free use permits, and negotiated sales sites. A community pit is a relatively small, defined area from which the BLM can make disposals of mineral materials to individuals. Free use permits are authorized for any Federal, State, or territorial agency, unit, or subdivision (including municipalities, or non-profit organizations) for extraction and use of mineral materials. Negotiated sales are where the BLM sells—not less than fair market value and without advertising or calling for bids—mineral materials not greater than 200,000 cubic yards in any individual sale. There is one community pit, one negotiated sales site, and 8 free use permits in the TMA. Carbon County holds one of the free use permits and Emery County holds 7 of the free use permits. The counties have a continuing need for new free use permits and/or expansion of existing pits. For more details on oil/gas and mineral development in the PFO in general, see pages 3-78 to 3-84 of the Price Proposed RMP/EIS (BLM 2008b). Under the alternatives, access will be maintained for authorized users.

3.3.3.2 Environmental Effects

Direct or Indirect Effects Common to All Alternatives

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, preservation, or gain of access to mineral development leases or sites. Even routes that are designated OHV-closed could still be available for authorized use. Potential effects of alternative OHV access on mineral development activities include perpetuation or reduction of conflicts such as vandalism, disruption, or trespass access from recreation users. Mineral development sites often contain equipment or chemicals that are hazardous if not handled properly, or facilities with OSHA regulated access. Restricting OHV access to these sites would benefit the operator by reducing liability and benefit the recreating public by removing access to those hazards. In addition, heavy OHV traffic could conflict with mineral site development traffic, which may consist of semi-trucks, heavy equipment, or work crew vehicles.

TMP implementation actions that may also affect mineral development include route maintenance (surface and ditch grading and drainage structure replacement or installation, etc.), and sign placement (digging post holes). Route maintenance may temporarily block access to mineral sites. However, maintenance actions would likely also enhance access to these sites. Routes that exist for authorized mineral uses would not be reclaimed even if designated as OHV-closed so long as the mineral use justifies the need for the route. Instead, sign installation would direct recreationists to their destinations and educate recreationists on allowable uses for a

particular route. If implementation is proposed that requires new surface disturbance, additional site specific NEPA considerations would be required before the activity could occur.

Impact Indicators

Table 3.31 was used to inform analysis and presents the number of evaluated routes providing access to mineral materials sites and mining claims. The number of evaluated routes providing access to these sites is an indicator of the alternative’s effects on mineral development activities.

Table 3.31: Number of Routes Providing Primary Access to Mining Claims and Mineral Materials Sites
(the far-left column notes the number and percentages of the total evaluated routes providing primary access to the mining sites)

Designation		Alt. A		Alt. B		Alt. C		Alt. D	
		Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent
Mineral Materials Site (5 routes; 0.4% of Evaluated Routes)	OHV-Open	4	80.0%	3	60.0%	5	100.0%	5	100.0%
	OHV-Limited	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	OHV-Closed	0	0.0%	2	40.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	1	20.0%	-	-	-	-	-	-
Mining Claim (14 routes; 1.2% of Evaluated Routes)	OHV-Open	5	35.7%	5	35.7%	11	78.6%	13	92.9%
	OHV-Limited	0	0.0%	0	0.0%	1	7.1%	0	0.0%
	OHV-Closed	0	0.0%	9	64.3%	2	14.3%	1	7.1%
	Other Evaluated Routes	9	64.3%	-	-	-	-	-	-

Alternative A (Current Condition)

Under Alternative A, there would be no route designation changes in the TMA. Impacts from ongoing OHV usage would be a continuation of current conditions. The effects described above from OHV use and maintenance of the routes would continue to occur on these routes. Thus, among the alternatives, Alternative A does the least to reduce negative OHV effects to mineral operations and protect the public from health and safety risk due to exposure to mineral operations.

Alternative B

Under Alternative B, more evaluated routes providing access to key mineral material sites and mining claims would be designated OHV-closed than by the other alternatives. Thus, among the alternatives, Alternative B does the most to reduce negative OHV effects to mineral operations and protect the public from health and safety risk due to exposure to mineral operations.

Alternative C

Under Alternative C, more evaluated routes providing access to key mineral material sites and/or mining claims would be designated OHV-closed than Alternatives A and D, but fewer than Alternative B. Among the proposed alternatives, Alternative C would more reduce negative OHV use effects to mineral operations and protect the public from health and safety risk due to exposure to mineral operations than Alternatives A and D, but less than Alternative B.

Alternative D

Under Alternative D, more evaluated routes providing access to key mineral material sites and/or mining claims would be designated OHV-closed than Alternative A, but fewer than Alternatives B and C. Among the alternatives, Alternative D would reduce more negative OHV effects to mineral operations and protect the public from health and safety risk due to exposure to mineral operations than Alternative A, but less than Alternatives B and C.

Cumulative Effects

The geographic scope of cumulative effects analysis for mineral development is the TMA. This scope was chosen because it aligns with the San Rafael Desert Master Leasing Plan boundary containing a recent report projecting mineral development potential in the area.

Past, present, and reasonably foreseeable actions, plans, or projects impacting mineral development in the TMA include the 2003 San Rafael Route Designation Plan; the 2008 RMP route designations; the ongoing San Rafael River restoration (USU 2013); 30 reasonably foreseeable oil and gas wells including four pending Applications for Permit to Drill; Fossil Point Road and associated recreation/visitation to the Fossil Point trailhead site; and other vehicle access-related activities such as mineral site development, livestock grazing operations, mining operations, expanding OHV-related recreational use on other land ownerships, and agricultural activities along the confluence of the San Rafael and Green Rivers.

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

Alternatives B-D do not propose any new construction of routes or other surface disturbing activities. To a different degree, each action alternative would reduce overall impacts to mining operations by closing and/or limiting a number of evaluated routes. Additionally, Alternatives B-D all propose managing the selected network through the TMP Implementation Guide, which would clarify the route network through activities including signing, reclamation, and adaptive management protocols. These implementation strategies would further reduce the overall impacts to mining operations. Summarily, there would be no cumulative increase to impacts on mining operations within the cumulative effects analysis area from OHV travel under any of the action alternatives.

4 CONSULTATION AND COORDINATION

4.1 List of Preparers

4.1.1 Bureau of Land Management

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

Name	Title
Ann Glubczynski	Planning and Environmental Coordinator, Green River District Office
Connie Leschin	Realty Specialist, Price Field Office
Veronica Kratman	Realty Specialist, Price Field Office
Dana Truman	Assistant Field Office Manager/Wildlife Biologist/Botanist, Price Field Office
Kegen Benson	Wildlife Biologist, Price Field Office
Jacob Palma	Planning and Environmental Coordinator, Price Field Office
Jaydon Mead	Realty Specialist, Price Field Office
Jerrad Goodell	Aquatic Ecologist, Green River District Office
Kelly Buckner	Planning and Environmental Coordinator, Green River District Office
Michael Knight	GIS Specialist, Price Field Office
Mike Glasson	Geologist, Price Field Office
Rebecca Anderson	Geologist, Price Field Office
Mike Tweddell	Natural Resource Specialist, Price Field Office
Myron Jeffs	Outdoor Recreation Specialist, Price Field Office
Natalie Fewings	Archaeologist, Price Field Office
Stephanie Bauer	Rangeland Management Specialist, Price Field Office
Stephanie Howard	NEPA & GIS Branch Chief, Green River District Office
Derek Eysenbach	Planning and Environmental Specialist, Utah State Office
Evan Glenn	Outdoor Recreation Planner, Utah State Office
Julie Suhr Pierce	Socioeconomic Specialist, Great Basin Zone
Nathan Thomas	Archaeologist, Utah State Office

4.1.2 Interdisciplinary Team Involvement and Cooperators

BLM resource and resource use disciplines represented on the IDT during route evaluation included: cultural resources, soils, water quality, riparian and wetlands, geology and minerals, paleontology, GIS, hydrology, law enforcement, natural resources, outdoor recreation planning, public health and safety, minerals, native vegetation and rangeland management, noxious weeds and invasive species, lands and realty, and environmental planning and NEPA. An Emery County economic development coordinator and public lands liaison also participated in the route evaluation process. Cooperating Agencies involved with this project included Emery County, the Utah School and Institutional Trust Lands Administration (SITLA), and the State of Utah Public Lands Policy Coordinating Office (PLPCO). After evaluation, these cooperators reviewed the preliminary alternative travel route networks and provided feedback on the preliminary route designations and the draft alternative route networks. Designations on roads that cross BLM office boundaries were coordinated with the adjacent offices.

4.1.3 Advanced Resource Solutions, Inc. (ARS)

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

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

4.2 Public Review

Public scoping occurred from January 21 to February 21, 2015 to solicit input from the public on the issues, impacts, and potential alternatives that could be addressed in this EA. Public meetings were held at the John Wesley Powell Museum in Green River, Utah on January 21, 2015 and at the Emery County Courthouse in Castle Dale, Utah on January 22, 2015. Scoping comments were considered during the preparation of this EA. See the [Scoping Report](#) for a summary of the findings. The draft alternative maps, baseline monitoring report, scoping report, and route reports associated with this project were posted to the Internet on June 25, 2019 for public review. The EA was posted on the BLM website and available for public review and comment on December 13, 2019. The 30-day public comment period was held from December 13, 2019 through January 13, 2020, in accordance with the 2017 Settlement Agreement. Updated route reports were also posted at this time. Public open houses were held December 16, 17, and 18, 2019. The BLM received 185 public comment letters. The comments and responses can be found in Appendix P. The EA has been updated to address issues raised in the comments.

4.3 Consultation

4.3.1 National Preservation Historic Act (NHPA) Section 106

The BLM conducted NHPA consultation in accordance with the 2018 Travel PA. These consultation efforts included seeking input and agreement with Indian tribes and consulting parties regarding BLM's Class I Inventory, cultural resource potential models, the Area of Potential Effect, the need to conduct additional cultural resource surveys, and BLM's finding of effect. BLM's consultation efforts are documented in Appendix G. Conformance to Section 106 Of The National Historic Preservation Act Through The Travel And Transportation Programmatic Agreement.

4.3.2 Endangered Species Act Section 7

The BLM has had ongoing coordination and communication with the USFWS throughout the development of this TMP. On March 5, 2019, the BLM contacted the USFWS about Travel Management Planning in Utah and discussed the process for consultation. As part of this exchange, the USFWS requested to receive information as soon as possible. As a Cooperating Agency on the development of this TMP, the USFWS received the administrative draft of the EA on July 27, 2019. The BLM contacted the USFWS on November 14, 2019, to provide a progress update on the TMP.

On January 8, 2020, the BLM submitted a draft biological assessment and a request for informal consultation to the USFWS. On January 9, 2020, the USFWS advised the BLM that formal consultation pursuant to section 7 of the Endangered Species Act is necessary to ensure that the

development of this TMP does not jeopardize listed species or destroy or adversely modify critical habitat. The BLM submitted a revised biological assessment on February 13, 2020 and received the USFWS' Biological Opinion (BO) on May 14, 2020. The BO determined several species would not be adversely affected by the travel network. However, the following species were likely to be adversely affected: Mexican spotted owl (*Strix occidentalis lucida*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Jones cycladenia (*Cycladenia humilis* var. *jonesii*), Navajo sedge (*Carex specuicola*), Ute ladies'-tresses (*Spiranthes diluvialis*), Wright fishhook cactus (*Sclerocactus wrightiae*), San Rafael cactus (*Pediocactus despainii*), and Barneby reed mustard (*Schoenocrambe barnebyi*). The BO determined the TMP would not likely jeopardize the continued existence of those species.

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APPENDIX B. ABBREVIATIONS AND ACRONYMS

2WD	Two-wheel drive
4WD	Four-wheel drive
ACEC	Area of critical environmental concern
ARS	Advanced Resource Solutions, Inc.
ATV	All-terrain vehicle
BCC	Birds of conservation concern
BLM	Bureau of Land Management
BMP	Best management practice
CAPE	Commercial, administrative, and property owner access—and economics
CFR	Code of Federal Regulations
CLO	Cornell Lab of Ornithology
CSU	Colorado State University
DOI	U.S. Department of the Interior
DR	Decision record
DWR	Utah Division of Wildlife Resources
DWSPZ	Drinking water source protection zone
ECOS	Environmental Conservation Online System
EIS	Environmental impact statement
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of no significant impact
GPO	U.S. Government Publishing Office
GPS	Global positioning system
HPTP	Historic Properties Treatment Plan
I-70	Interstate 70
ID	Interdisciplinary
IMACS	Intermountain Antiquities Computer System
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
PFO	Price Field Office
PLPCO	State of Utah Public Lands Policy Coordinating Office
RAS	Rangeland Administration System
RMP	Resource management plan
ROW	Right-of-way
SARA	Super Fund Amendments and Reauthorization Act
SHPO	Utah State Historic Preservation Office
SITLA	Utah School and Institutional Trust Lands Administration
SRMA	Special recreation management area
SRP	Special recreation permit

SUWA	Southern Utah Wilderness Alliance
TDS	Total dissolved solids
TMA	Travel management area
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
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USU	Utah State University
UTV	Utility terrain vehicle
UW	University of Wyoming
VRI	Visual resource inventory
VRM	Visual resource management
WSA	Wilderness study area
XSIC	Xerces Society for Invertebrate Conservation

APPENDIX C. ADDITIONAL POLICIES, STATUTES, AND GUIDANCE

In addition to the 2008 RMP, authorities and policies guiding this TMP effort include, but are not limited to, the following:

- The 2017 Settlement Agreement. In the 2017 Settlement Agreement, the BLM agreed, among other things, to issue a new TMP for the San Rafael Desert TMA.
- Presidential Executive Orders 11644 and 11989, which require federal land management agencies to “establish policies and provide for procedures that will 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” (Order 11644) and “whenever he [agency head] determines that the use of off-road vehicles will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands, immediately close such areas or trails to the type of off-road vehicle causing such effects...” (Order 11989).
- 43 CFR Part 8340: Off-Road Vehicles including 43 CFR 8342.1, Designation Criteria, Subparts 8340-8342.3, which states:
 - The authorized officer shall designate all public lands as either open, limited, or closed to off-road vehicles. All designations shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands; and in accordance with the following criteria:
 - (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
 - (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
 - (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
 - (d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.
- BLM’s *Travel and Transportation Management Manual* MS-1626
- The BLM’s 2001 *National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands*
- 43 CFR 8364.1: Closures and Restrictions
- BLM’s 2008 *National Environmental Policy Act Handbook* (H-1790-1)
- BLM’s 2012 *Travel and Transportation Handbook* (H-8342)
- Federal Land Policy and Management Act (FLPMA)
- 2019 John D. Dingell, Jr. Conservation, Management, and Recreation Act

APPENDIX D. SCOPING DETAILS

Scoping Process

Internal and external scoping were used to identify issues related to travel management in the Project Area. Internal scoping was conducted via a BLM interdisciplinary team of resource specialists analyzing potential consequences of the range of travel management alternatives during the route evaluation process and during meetings held throughout the development of this EA. More detail on the route evaluation process can be found in section 2.1. External scoping was conducted with individual members of the public, outside agencies and other interested parties. Details on public scoping can be found in the [San Rafael Desert Travel Management Plan Scoping Report](#).

Various scoping issues were identified, but only key issues receive analysis in the EA.

Identified Scoping Issues

Route/travel-related issues that were identified via internal and external scoping fall under the underlined topic headings listed below. In general, issues are tied to potential impacts of individual route designations. Not all issues raised in scoping were brought forth for analysis in the EA.

- Air quality: Route use contributing to fugitive dust impacts (site-specific and general) and general dust impacts; winter ozone levels; erosion; compromised clean air; tailpipe emissions.
- Cultural sites: Site protection; concentration/increased use on routes when other routes are closed and potential effects based on such increased use; access (related to research/inventory); public overuse; potential for illegal collection and/or vandalism of artifacts/sites; maintenance of routes through sites that were never inventoried; ability to carry out Euro-historic events/uses (e.g., reenactments); tribal group access to federal/tribal lands; public access to tribal areas.
- Hydrology: Travel-related erosion impacts on water quality and waterway appearance; salinity from salting/dust abatement measures; OHV travel in washes and small streams impacting stability and resulting in headcutting; access to areas conducive to illegal dumping in waterways.
- Lands and realty: Allowing proposed route networks' support of commercial and public purposes activities (power, fuels, water transmission, property access, leases, etc.); authorized use access; ensuring reasonable access to lands; ensuring open and limited routes serve right-of-way (ROW) holders; offering reasonable access for a spectrum of opportunities and experiences.
- Minerals: Concern over closure of routes accessing known economically viable mineral resources and concern over closures denying permittees, leases, etc. their valid existing rights; access to current and future gravel pit sites.
- Oil and gas resources: Public use of routes resulting in open gates, reclamation route trespass, safety, reduced efficiency, etc.; access for existing authorized uses for maintenance and operation; industry capability to explore/develop and export new/existing energy sources/products; quantity/location of routes supporting oil and gas operations; public concern over route closure.

- Rangeland management: Blocking of access that impacts agency ability to administer public land programs; motorized access to rangeland facilities for operation and maintenance; route-related invasive plant proliferation displacing desirable forage; livestock operator access to improvements; public vandalism of livestock-related improvements.
- Recreation: Need for identification/negotiation of easements (or other legal instruments) for ensuring public access across landlocked areas; greater potential for activity conflicts caused by greater concentration of users on remaining routes when limits/closures are applied to routes; ability of public to access lands for recreation; non-motorized vs. motorized perspectives on experience opportunities; trespass, noise, dust in interface areas; supply/availability of open OHV play areas; desire for non-motorized mountain bike trail systems to be developed on public lands; BLM ability to: provide variety of recreation experiences (including expansion of opportunities) tied to varying route types, maintain special recreation permit (SRP) access, provide opportunities for non-motorized activities without conflict with OHV use, reduce conflicts among OHV users, and maintain existing recreation access points for San Rafael River.
- Soils: Route-related adverse impacts to soils via erosion/compaction (especially primitive routes) and contributions to salinity; soil impacts caused by lack of route construction standards; non-hardened routes crossing ephemeral and perennial channels potentially contributing to stream sedimentation; difficulty of achieving reclamation/maintenance objectives because of certain soil types; public desire for route paving, more frequent maintenance; safety concerns related to improper route construction.
- Special status plants: Route network-related illegal plant collection; direct impacts from public OHV recreation (including illegal off-road travel); availability of public access for viewing/photographing desert plants in Spring.
- Special Designated areas: Potential for illegal OHV encroachment in special management areas; higher truck traffic on routes adjacent to special designation areas causing higher dust and noise levels and related impacts; agency ability to maintain existing recreation access points along Green River; ability to access wilderness characteristics areas in general; OHV use effects on solitude.
- Weeds: Route network/travel related vectors' (recreation, vehicle use, etc.) contribution to introduction/spread of noxious weeds; native species displacement; ecosystem function disruption; agency access needs for monitoring/treatment activities; nuisance for recreation; range and wildlife habitat viability impacts.
- Wildlife and fish: Potential for road/traffic-related habitat loss/fragmentation/degradation and disturbance of animals; impacts to fish habitat from road surface erosion/drainage; adverse impacts from oil and gas-related water depletion caused by road construction, dust suppression, and production/extraction; access to public lands for consumptive and non-consumptive use of wildlife resources; access contributing to species loss; public concern over potential loss of access for OHV game retrieval; water quality's benefits to habitats.
- Route network: Missing routes in the inventory; providing open areas and road setbacks.
- Regulation adherence: Adherence to 43 CFR 8342.1 designation criteria; providing a reasonable range of alternatives; taking a hard look at potential impacted resources like wildlife, areas of critical environmental concern (ACEC), soils, air quality, cultural resources, and wilderness characteristics.

- Specific area considerations: Specific considerations for June's Bottom, Cottonwood Wash, the San Rafael River crossing, Five Hole Arch, Buster Erwin, Bull Bottom, Jack's Knob, and the Cone.

APPENDIX E. INTERDISCIPLINARY TEAM CHECKLIST

The table below provides determinations on the presence of resources and issues, and potential for impacts to those resources and issues that could result from the adoption of a travel network. Explanations for why particular determinations were made are also in the table below. BLM’s San Rafael Desert TMP interdisciplinary team (IDT) specialists made the following determinations for each issue in the TMA:

- PI = Present with the potential for relevant impact that needs to be analyzed in detail in the EA. This EA only provides analysis for resource/issues with “PI” status.
- NI = Present but not affected to a degree that detailed analysis is required.
- NP = Not present in the area impacted by the proposed or alternative actions.

Table E.1: Interdisciplinary Team Checklist

Determination	Resource/ Issue	Rationale for Determination	Signature	Date
NI	Air Quality and Greenhouse Gas Emissions	<p>On-route travel has the potential to emit criteria air pollutants (NO_x, SO_x, CO, PM₁₀, and PM_{2.5}) and greenhouse gases (CO₂, CH₄, and N₂O). Pollutants come from tailpipe emissions and fugitive dust from vehicle disturbance and wind erosion.</p> <p>An overall increase in visitors in the area is expected as that has been the trend in recent decades. However, that increase in visitation is tied to general population increases as demonstrated by the historic trend, and as such is not directly or indirectly tied to this action.</p> <p>The BLM Utah 2018 Air Monitoring Report identifies air quality within the Price Field Office as good. The area is designated unclassified for all National Ambient Air Quality Standard pollutants.</p> <p>Emissions of GHGs and other air pollutants are linearly related to vehicle usage which is a function of the number of visitors and vehicle miles traveled. 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 add routes, 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.</p> <p>Therefore, changes to designation of existing routes, (open, limited or closed), is unlikely to change the amount of vehicle miles traveled as visitors are anticipated to continue to use routes that are open. With the number of visitors and vehicle miles traveled anticipated to remain the same between alternatives, it is concluded that emissions will also remain the same, so an emissions inventory is not needed. Analyzing emissions will not help make a reasoned choice between alternatives (BLM Handbook H1790-1 section 6.4.1) and will not concentrate on the issues that are truly significant to the action in question (40 CFR 1500.1(b) since there will be no emission differences between the alternatives.</p>	Stephanie Howard	8/6/2020

Determination	Resource/ Issue	Rationale for Determination	Signature	Date
NP	BLM Natural Areas	The 2008 RMP identified approximately 97,100 acres of natural areas within the PFO, none of which are within the Project Area. Though lands managed for wilderness characteristics (MWCs) (aka natural areas) in the Project Area are not identified in the 2008 RMP, the Project Area still includes lands with wilderness characteristics (LWCs), which do receive analysis.	Myron Jeffs	11/23/19
PI	Cultural Resources	The NHPA Section 106 process is underway and results are pending at this time. The cultural resources Class III intensive field survey was conducted by a private contracting firm in 2017, 2018, and 2019, and project results have been analyzed. Potential project effects to significant cultural resources and proposed avoidance, minimization, or mitigation determinations will be consulted on in accordance with the NHPA, BLM Manual Series 8100, the BLM Utah Travel and Transportation Programmatic Agreement, and all applicable governing regulations, until the Section 106 process is satisfactorily concluded. There is the potential for this project to impact cultural resources (including isolated occurrences), including those that are or are not eligible to the National Register of Historic Places.	Natalie Fewings	11/23/19
NP	Cultural: Native American Concerns	On February 10, 2017, a government-to-government consultation initiation letter with project area maps was sent to 13 tribes who have known interests in this region of Utah, announcing the SRD TMP NEPA and NHPA processes were beginning. The letter respectfully requested tribal assistance in identifying known or potential areas of cultural significance or concern, or areas of religious significance that would benefit from protection. No specific areas of tribal concern were identified in reply. It is generally known that the Green River is a significant resource to tribes who have identified themselves as culturally-affiliated with that specific area of Utah. The SRD TMA is bounded west of the Green River, which is not a component of this TMP and therefore is not analyzed in this EA. Continuing consultation regarding the Section 106 process progress and results is planned and will be conducted in accordance with the NHPA, BLM Manual 1780, the BLM Utah Travel and Transportation Programmatic Agreement, and all applicable governing regulations, until the Section 106 process and NEPA consulting processes are concluded.	Natalie Fewings	11/23/19
NI	Designated Areas: National Historic Trails	A section of the congressionally designated path of the Old Spanish Trail goes through the northern tip of the Project Area. The section of Old Spanish Trail in the TMA is not included as a route option in any alternative, will not be designated in the TMP, and therefore requires no analysis for this undertaking.	Natalie Fewings	11/23/19

Determination	Resource/ Issue	Rationale for Determination	Signature	Date
NI	Designated Areas: Areas of Critical Environmental Concern (ACECs)	The Project Area contains three ACECs: Dry Lake Archaeological District, Big Flat Tops, and Bowknot Bend. The Dry Lake ACEC's relevant and important values include a multitude of lithic scatters, Paleo-Indian shelters, and campsites. Potential impacts to cultural resources are analyzed in the "Cultural Resources and Native American Religious Concerns" section of this EA. Bowknot Bend, roughly 1,100 acres, contains an isolated, unaltered relict plant community. This ACEC is wholly within the Labyrinth Canyon Wilderness (formerly the Horseshoe Canyon [North] WSA) and is inaccessible by motor vehicles. Because there are no inventoried or existing routes that access the Bowknot Bend ACEC, route designations would not impact it. Also, no network routes access the Big Flat Tops ACEC. Though not analyzed in a dedicated ACEC section, routes' proximity to ACECs was recorded during route evaluation. The Bowknot Bend and Big Flat Tops ACECs are mentioned in the "Native Vegetation and Invasive Plants/Noxious Weeds" section of this EA.	Myron Jeffs	11/23/19
NI	Designated Areas: Wild and Scenic Rivers	The 2008 RMP identified approximately 60 miles of the Green River as suitable for inclusion in the Wild and Scenic Rivers System with the classification of "Scenic." This 60-mile section of river is a portion of the eastern boundary of the Project Area, which begins at the confluence with the San Rafael River and runs downstream. In 2019, this segment of the Green River became officially designated as "Scenic" in the Wild and Scenic Rivers System by Public Law 116-9. A detailed river boundary has not yet been established so per Section 4 D of the Wild and Scenic Rivers Act the river has an interim boundary of ¼ mile from the ordinary high-water mark on either side of the river. Roads are permitted to access and parallel designated-scenic rivers per BLM Manual 6400 – Wild and Scenic Rivers Policy and Program Direction for Identification, Evaluation, Planning, and Management. There are very few inventoried and/or existing routes that access the "Scenic" river corridor or that are within view of the waterway. Those that are present, with the exception of June's Bottom, are just below the San Rafael River before the Green River cuts into Labyrinth Canyon. In places where routes access the river, they are generally rough and receive little use. The scenic segment was determined eligible and suitable with the presence of these routes and the continued use of the existing routes would not result in additional impacts beyond those that were already found consistent with the suitability determination.	Myron Jeffs	11/23/19
NI	Designated Areas: Wilderness and Wilderness Study Areas (WSAs)	The Project Area contains the Labyrinth Canyon Wilderness, which was formerly the Horseshoe Canyon (North) WSA. Route evaluations have been updated to reflect the new designation. Route designations will be consistent with direction from Congress in the designation of the Wilderness Area as specified in Public Law 116-9. Because of policy, we will not be designating routes within the Wilderness Area. Routes cherry-stemmed by Public Law 116-9 will be evaluated and assigned an OHV designation.	Myron Jeffs	11/23/19
NI	Environmental Justice	No minority or economically disadvantaged communities or populations would be disproportionately adversely affected (physically or economically) by the proposed action because none are present in or adjacent to the Project Area.	Stephanie Howard	11/23/19

Determination	Resource/ Issue	Rationale for Determination	Signature	Date
NI	Farmlands (Prime/Unique)	According to Natural Resource Conservation Service (NRCS) soil surveys, there may be some prime and unique soils mapped within the Project Area if irrigated. The majority of these areas are small and mainly located around water sources like springs or river bottoms. Most of the travel routes do not intersect with these soils. Therefore, impacts to prime/unique farmlands are expected to be minimal.	Stephanie Bauer	11/23/19
NI	Fuels/Fire Management	This project will not impact fire and fuels to the point that any further analysis is needed. Fire restriction sign locations are already present on the San Rafael Desert. Campfires are limited to existing fire rings. Follow seasonal fire restrictions.	Stuart Bedke	11/23/19
PI	Geology / Minerals / Energy Production	Routes which are being considered for closure should be reviewed and analyzed for access to various existing and/or potential mineral activity (both fluid and solid minerals). There are many existing oil and gas leases in the Project Area as well as locatable and salable solid minerals, which either have been developed privately or via Free Use permits, such as sand and gravel operations developed by the Emery County Road Department. Leasable solid minerals also exist. And, although economics may preclude near-term development, tar sands in the San Rafael Desert have potential.	Rebecca Anderson	11/23/19
PI	Invasive Plants / Noxious Weeds	All classifications of routes are corridors where invasive species/noxious weeds can be introduced/spread throughout all connecting routes. Emery County is responsible for weed control on all county-maintained or county permitted right-of-ways (ROWS). There are small isolated patches of noxious weeds and widespread invasive species in the Project Area (mainly located along roads and trails). Educating the public about the spread of invasive species/noxious weeds will help to prevent any new infestations. Treatments of noxious weeds will continue within the Project Area along roads and trails, and access to these areas are necessary to prevent the spread of noxious weeds.	Stephanie Bauer	11/23/19
NI	Lands / Access	Routes under ROW are not required to be designated "Open." Consultation with Emery County would take place before any County-claimed roads are considered for reclamation. The alternatives will not preclude administrative or other authorized access to facilities or lands.	Stephanie Howard	8/5/2020
PI	Lands with Wilderness Characteristics (LWCs)	New LWC inventories were completed in the Project Area in 2018. Within the Project Area, there are 5 units that were inventoried and found to possess wilderness characteristics (size, naturalness, solitude, and/or primitive recreation). These areas are not necessarily specifically managed to maintain those characteristics. Regardless, the inventory shows that the characteristics are present. OHV route designations may affect the presence or absence of these characteristics within those units.	Myron Jeffs	11/23/19
PI	Livestock Grazing	General livestock management practices may be affected by designated routes within the planning area along with access to existing range improvement facilities.	Mike Tweddell	11/23/19
NI	Paleontology	There are vertebrate paleontological resources in the Project Area. Establishing a travel management plan (TMP) for existing routes in the Project Area is not likely to impact those resources because no new surface disturbance is proposed. Although paleontology does not receive detailed analysis in the EA, routes' proximity to paleontological resources was recorded during route evaluation.	Rebecca Anderson	11/23/19
PI	Plants: BLM Sensitive	Serval BLM sensitive plants have potential to occur in the Project Area. Routes and the dust generated from their use could negatively impact BLM sensitive plants and suitable habitat for them.	Dana Truman	11/23/19

Determination	Resource/ Issue	Rationale for Determination	Signature	Date
PI	Plants: Threatened, Endangered, Proposed, or Candidate	Federally listed plants have potential to occur in the Project Area. Routes and the dust generated from their use could negatively impact federally listed plants and suitable habitat for them.	Dana Truman	11/23/19
NI	Rangeland Health Standards	Routes may affect natural drainages, accelerate natural erosion processes, and increase sediment loading in perennial streams in the Project Area. However, Impacts to water, vegetation, and soil are covered in the following EA sections: “Water Quality, Riparian Areas, and Wetlands,” “Special Status Plants,” “Native Vegetation and Invasive Plants/Noxious Weeds,” and “Soils.”	Mike Tweddell	11/23/19
PI	Recreation	Various forms of recreation occur throughout the Project Area, including both motorized and non-motorized forms. Motorized recreation participants use the route network as their form of recreation activity while non-motorized recreation participants use the route network to access locations for their activity. In either case, the route network is critical to maintain and provide a diverse array of recreation opportunities. Travel planning would affect the route network and recreation opportunities.	Myron Jeffs	11/23/19
NI	Socio-economics	The proposed action will be considering designating existing routes as closed, open, or limited. Authorized uses such as access to oil and gas leases or range improvements could continue to be allowed regardless of route designations as part of the permitting process. Using the Economic Profile System web tool created by Headwaters Economics, which builds customized socioeconomic reports, it was determined that in 2016, approximately 24 percent of jobs in Emery and Wayne Counties combined, or around 650 jobs, were connected with travel and tourism, with an estimated average annual wage rate of \$41,452 in 2018 dollars. The total number of jobs related to this sector has grown in recent years at the same time as jobs outside of this sector have declined. From 1998 to 2016, total employment in non-tourism related employment declined by 28 percent. The value to the regional economy of each OHV user day is estimated at \$48. This includes purchases of equipment, clothing, services, lodging, meals, fuel, and so on. To the extent that these items are purchased outside of the two-county economic region, the value to the local economy would be reduced. For every \$100,000 spent by OHV riders in the local economy, an estimated 1.4 jobs, \$30,645 in labor income, and \$93,039 in output is supported. For each dollar spent by OHV riders in Emery County and Wayne County, an estimated additional \$0.30 in economic output is generated. Any reductions that would impact these values--due to OHV riders choosing to go elsewhere—would be expected to proportionately impact the local economy in an amount reflecting these numbers. An overall increase in visitors in the area is expected as that has been the trend in recent decades. However, that increase in visitation is tied to general population increases as demonstrated by the historic trend, and as such is not directly or indirectly tied to this action or alternatives. Therefore, no impact to the social or economic status of Emery County or its communities is anticipated to occur to a degree that disclosure would help define alternatives or identify significance.	Stephanie Howard and Julie Suhr Pierce	11/23/19 2/26/2020
PI	Soils: Physical / Biological	Routes occur in areas with erosive or sensitive soils. Designation and use of routes have the potential to affect these soils.	Stephanie Bauer	11/23/19

Determination	Resource/ Issue	Rationale for Determination	Signature	Date
PI	Vegetation	Routes occur in areas with intact populations of relict vegetation and there is the possibility that designation and use of the routes will disturb roadside vegetation.	Mike Tweddell	11/23/19
PI	Visual Resources	VRM Classes I-IV are present in the Project Area. Management objectives differ for each of these classes. The scenic quality and sensitivity levels also differ throughout the unit. Analysis was not based on VRM classes III and IV because they allow for changes in form line and color. Therefore, they would not be as useful for informing analysis of potential adverse impacts. Route proliferation from lack of management of the existing route system has the potential to impact visual resources. Designations would need to be consistent with the VRM class objectives designated in the 2008 RMP.	Myron Jeffs	11/23/19
NI	Wastes (Hazardous / Solid)	No chemicals subject to reporting under Super Fund Amendments and Reauthorization Act (SARA) Title III in amounts greater than 10,000 pounds would be used, produced, stored, transported, or disposed of annually in association with the project. Trash and other waste materials would be cleaned up and removed immediately after completion of operations.	Stephanie Howard	11/23/19
NI	Water: Groundwater Quality	The proposed project is restricted to the surface. No new interruption of groundwater is expected.	Rebecca Anderson	11/23/19
PI	Water: Hydrologic Conditions (Stormwater)	There are several dry ephemeral washes, intermittent, and perennial streams that collect all the runoff. Designation of routes and their use can alter hydrologic conditions in the area by altering water infiltration, and runoff rates. The stormwater can also carry pollutants from vehicles including heavy metals from brakes, engine wear, and hydrocarbons from lubricating fluids. Some routes in this area may be subject to National Pollutant Discharge Elimination Systems under section 402 of the clean water act.	Jerrad Goodell	11/23/19
NI	Water: Municipal Watershed / Drinking Water Source Protection	This project area does not contain any waters which would be considered either drinking water or municipal watershed. There are no sole source aquifers within the project or drinking water source protection zones (DWSPZs).	Jerrad Goodell	11/23/19
PI	Water: Streams, Riparian Wetlands, Floodplains	Route use and resulting potential route proliferation can increase sedimentation and contaminants to streams, wetlands, and riparian areas, affecting their ability to function properly. Routes can impact wetland and riparian areas by directly destroying them during route proliferation, altering water availability, or by contributing to dust suffocating riparian plants.	Jerrad Goodell	11/23/19
PI	Water: Surface Water Quality	There are several streams in this project area. Water quality can be affected by routes via runoff from stormwater carrying contaminants including but not limited to, heavy metals from soil disturbance, brake and engine wear, hydrocarbons from lubricating fluids, and increased mobilization of sediment. The pollutants can impair surface water quality causing them to no longer support the waters designated beneficial use..	Jerrad Goodell	11/23/19
NI	Water: Water Rights	Route designations will not impact authorized water rights users who will continue having access after designations are assigned.	Jerrad Goodell	11/23/19

Determination	Resource/ Issue	Rationale for Determination	Signature	Date
PI	Water: Waters of the U.S.	Waters of the U.S. includes tributaries to interstate waters, there are streams in the travel management area that contribute water to Lake Powell which is an interstate water. The impact to this resource is the same as the Streams and Wetlands section.	Jerrad Goodell	11/23/19
NI	Wild Horses and Burros	A portion of the Robbers Roost Herd Area is within the Project Area. The appropriate management level or herd size within the herd area has been set at zero horses through the land use planning process. Therefore, the management of wild horses within the Project Area would not be affected. Although wild horses and burros do not receive analysis in the EA, routes' proximity to wild horse and burro herd areas was recorded during route evaluation.	Mike Tweddell	11/23/19
PI	Wildlife: Migratory Birds (Including Raptors)	Several migratory birds could use the Project Area for foraging and nesting. Nesting raptors are known from this area. The use of routes can affect the survivorship of nests and birds and affect the movement of prey animals like snakes and lizards.	Kegen Benson	11/23/19
PI	Wildlife: Fish (designated or non- designated)	The use of routes can increase sedimentation to down-gradient streams, affecting fish population habitat. Routes also have the potential to affect water quality/fish habitat by mobilizing salinity and other contaminants in disturbed areas.	Jerrad Goodell	11/23/19
PI	Wildlife: Non-USFWS Designated	The Project Area supports designated crucial habitat for big game and other species. Evaluation of all crucial habitat designated by the Utah Division of Wildlife Resources (UDWR) and the location of routes needs to be evaluated for possible conflicts. Route use can affect migration routes and habitat quality.	Kegen Benson	11/23/19
PI	Wildlife: BLM Sensitive	Several BLM sensitive wildlife species occur in the Project Area. For example, there are known occurrences of kit fox and associated dens. Route use and proliferation can affect habitat suitability and foraging resources for BLM sensitive animals.	Kegen Benson	11/23/19
PI	Wildlife: Threatened, Endangered, Proposed or Candidate	Several ESA-listed animals have potential to occur in the Project Area. Routes that go through or are adjacent to riparian areas are of particular concern. The use and proliferation of routes can indirectly affect species through effects to habitat quality, and it can directly affect species through collisions. The Mexican spotted owl in the southern part of the Project Area is of particular concern.	Kegen Benson	11/23/19
NI	Woodlands/ Forestry	Woodland/forestry resources within the Project Area are very limited, and the management of these resources would not be affected.	Stephanie Bauer	11/23/19

APPENDIX F. ADDITIONAL OVERALL DESIGNATION SUMMARY TABLES

Table F.1: Miles of Routes by Major Designation and Difference from Alt A (current conditions)

		Alt. A	Alt. B		Alt. C		Alt. D	
Designation		Miles	Miles	Difference	Miles	Difference	Miles	Difference
All Routes (1180.8 miles; 100.0% of evaluated route miles)	OHV-Open	302.6	331.9	29	636.3	334	746.8	444
	OHV-Limited	0.0	5.4	5	119.6	120	120.5	120
	OHV-Closed	0.0	843.3	843	424.8	425	313.3	313
	Other evaluated Routes	878.0	-	-	-	-	-	-

Table F.2: Numbers of Routes by Major Designation and Difference from Alt A (current conditions)

		Alt. A	Alt. B		Alt. C		Alt. D	
Designation		Routes	Routes	Difference	Routes	Difference	Routes	Difference
All Routes (1136 routes; 100.0% of evaluated routes)	OHV-Open	136	127	-9	413	277	568	432
	OHV-Limited	0	3	3	72	72	66	66
	OHV-Closed	0	1,006	1006	651	651	502	502
	Other evaluated Routes	1,000	-	-	-	-	-	-

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

Introduction:

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

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

Requirements of the Travel PA and the 2017 Settlement Agreement	Process for Completing these Requirements
<p><i>Identifying Areas of Potential Effects (APEs) for OHV Route Designations - Travel PA Stipulation III.A.1.b.</i></p> <p>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.</p>	<p>Pursuant to this Stipulation the BLM initiated consultation with the SHPO and Indian tribes on February 09, 2017. BLM sent a letter to initiate consultation with consulting parties on October 29, 2019.</p> <p>The APE included a buffer of 30-meters on either side of the route centerline. This APE exceeds the requirements of the Travel PA, which requires a 15-meter corridor where the governing RMP does not provide for off-route OHV travel for parking and dispersed roadside camping purposes (Travel PA Stipulation III.A.1.b.).</p>
<p><i>Travel PA Stipulation III.A.2. Literature Reviews and Cultural Resource Potential Maps for Open OHV Area and OHV Route Designations</i></p> <p>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.</p>	<p>Pursuant to this Stipulation the BLM initiated and consulted on a Class I – Existing Information Inventory (Class I inventory) for the Price Field Office in 2016 and 2017. BLM completed this Class I inventory in July 2017.</p> <p>The Class I includes of a cultural resource overview, analysis of known cultural resource data (e.g., literature review) and a cultural resource potential model for the entirety of the lands managed by the Price Field Office.</p> <p>BLM also completed a Class II -Probabilistic Survey (Class II survey) and cultural resource potential model specific to the San Rafael Desert. BLM conducted consultation on this document in 2017.</p>

Requirements of the Travel PA and the 2017 Settlement Agreement	Process for Completing these Requirements
<p><i>Travel PA Stipulation III.A.4.b Class III Surveys for OHV Route Designations</i></p> <p>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.</p> <p>2017 Settlement Agreement Stipulations 24 (b)(ii) and (c), – Class III survey in certain ACECs and Class III surveys in high potential areas</p> <p>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.</p> <p>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.</p> <p><i>Travel PA Stipulation IV.D. Stipulation Adverse Effects (36 CFR 800.5)</i></p> <p>Under this stipulation, the BLM must invite and seek consulting party input regarding BLM-Utah's finding of adverse effect.</p>	<p>Pursuant to this Stipulation BLM completed Class III surveys on routes and portions of routes located in areas BLM identified as having a high cultural resource potential. Also, all routes within the Dry Lake Archaeological District ACEC were surveyed to Class III standards.</p> <p>The results of the Class III survey and BLM's finding of adverse effect were shared with Indian tribes and consulting parties through a letter and attachment dated October 31, 2019.</p> <p>BLM submitted the Class III survey report and finding of adverse effect to SHPO on December 13, 2019.</p> <p>SHPO concurred with BLM's finding of effect on December 16, 2019.</p>
<p><i>Travel PA Stipulation III.A. 3. Site Revisits for Open OHV Areas and OHV Route Designations</i></p> <p>Site revisits serve as a component of BLM's efforts to identify historic properties for undertakings that would designate OHV routes.</p>	<p>Pursuant to this Stipulation, BLM conducted site revisits in 2019.</p>
<p><i>Travel PA Stipulation III.B.1 Determining the Need for Phased Class II Surveys for Travel Management Plans</i></p> <p>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.</p>	<p>Pursuant to this Stipulation BLM consulted with SHPO, Indian tribes, and consulting parties regarding BLM's decision that additional Class II surveys were not needed (letter dated December 5, 2019).¹⁴</p> <p>SHPO concurred with BLM's decision on December 19, 2019.</p>

¹⁴ When considering whether it would be appropriate to, under the Travel PA, conduct post-designation phased Class II surveys along designated routes (Travel PA Stipulation III.B.1.) the BLM considered the relevant factors identified in the Travel PA which include, but are not limited to, whether these route designations would concentrate OHV travel on designated routes within areas identified as low and medium potential for cultural resources. These factors include, but are not limited to, an overall reduction of the number of routes providing OHV access to a particular destination or area, and routes that could be reasonably foreseen to have a substantial increase in OHV travel. Based on BLM's review of the Travel PA's factors for determining concentrated OHV use, the BLM determined that additional Class II surveys were not needed following designation of any network alternative considered for designation. SHPO concurred with BLM's rationale on December 19, 2019.

Requirements of the Travel PA and the 2017 Settlement Agreement	Process for Completing these Requirements
<p><i>Travel PA Stipulation V. Resolution of Adverse Effects Through Historic Property Treatment Plans</i></p> <p>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. provide input on draft HPTPs.</p>	<p>BLM provided the HPTP to SHPO, Indian tribes and consulting parties on December 19, 2019.</p>

APPENDIX H. NATIONAL REGISTER ELIGIBILITY DEFINITIONS

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

- A. Associated with events that have made a significant contribution to the broad patterns of our history; or
 - B. Associated with the lives of significant persons in our past; or
 - C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
 - D. Have yielded or may be likely to yield, information important in history or prehistory.
- 36 CFR Part 800 defines National Register-eligible cultural resources as “historic properties.”

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

APPENDIX I. DETAILS ON CULTURAL RESOURCE SITE TYPES, NRHP ELIGIBILITY, AND POTENTIAL EFFECTS TO SITES BASED ON OHV-OPEN OR OHV-LIMITED DESIGNATIONS

During the Class III – Intensive Pedestrian Survey (Class III survey), current conditions were documented for all identified cultural resource sites, including any impacts related to OHV use. Additionally, the potential for “adverse effects” (see glossary) from an "open" route designation was assessed at historic property (National Register-eligible cultural resource). The assessment included a visual inspection of portions of the route, within the cultural resource boundary, the observed level of use, a discussion with the Price Field Office Recreation team regarding known use patterns in the area, the potential for impacts on soil erosion and any other perceived impact (e.g. visual, atmospheric and/or auditory).

The Class III survey was designed, in part, to provide the BLM with information regarding site condition and more specifically, the potential adverse effects of “open” route designations to historic properties. Most of the 231 sites are in stable condition. Compared to the more popular areas of Emery County, vehicle traffic in the San Rafael Desert is low and many of the routes are rarely used. See Appendix G for the methodology behind the Class I, II, and III cultural analyses.

The Class III survey identified 231 previously and newly recorded cultural resource sites. Of these 231 sites, 71 (31%) are eligible to the National Register of Historic Places. Of the 71 eligible sites, 61 are prehistoric, eight are multicomponent, and two are historic, and all are newly determined or previously determined eligible for the National Register of Historic Places under Criterion D. Some of the prehistoric/multicomponent sites exhibit artifact density and diversity as well as the potential for in-situ buried cultural material that may yield information on prehistoric site function, chronology, subsistence strategies, and land use patterns within the San Rafael Desert. Additionally, many sites contain large artifact assemblages which could yield information regarding cultural affiliation and lithic procurement and reduction strategies. Multicomponent site 42EM5119 includes an historic saddle-notched log cabin and associated outbuildings. This site is recommended eligible under National Register Criterion D for information potential and under Criterion C due to its exemplary structure type, period, and for its method of construction.

Within the alternatives there are three National Register eligible sites (42EM2293, 42EM5009, and 42EM5047) that may be adversely affected by an open or limited OHV route designation:

- 42EM2293 is a prehistoric flaked stone scatter determined eligible for the National Register. An analyzed route bisects the site that may potentially cause adverse effects to the characteristics of integrity that make this site eligible to the National Register.
- 42EM5009 is a lithic scatter which dates from the Archaic through Formative period, with a historic homestead, which dates between 1915 and 1935. The site is recommended eligible for the National Register under Criterion D. Analyzed routes trend through and merge within the site. One of these routes receives moderate use and a turnaround/parking area is located within an artifact concentration, which may potentially cause adverse effects to the characteristics of integrity that make this site eligible to the National Register.

- 42EM5047 is a prehistoric flaked stone scatter recommended eligible for National Register inclusion under Criterion D. An analyzed route bisects the site and an artifact concentration within the site boundaries that may potentially cause adverse effects to the characteristics of integrity that make this site eligible to the NRHP. However, a “closed” designation is being proposed for this route under all action alternatives. If it is decided this route will be designated closed to OHV travel, then this TMP undertaking will have No Adverse Effect on 42EM5009.

The remaining 160 sites (69%) are not eligible for the National Register as they are not significant under National Register Criteria A through D. The not eligible sites include 110 prehistoric sites of mostly indeterminate prehistoric cultural affiliation, 44 historic sites of varying age, and six multicomponent sites. These 110 National Register-ineligible sites lack features and artifact abundance, diversity, density, and, in most circumstances, diagnostic artifacts that would provide important information. Although the San Rafael Desert exhibits significant sediment deposition as evidenced by coppice dunes and eolian sand, the overall artifact assemblage composition and the nature of these sites suggest very limited potential for significant subsurface cultural deposits. The National Register-ineligible historic sites exhibit no evidence of extended and purposeful occupation. These sites are mostly artifact scatters containing limited and discrete concentrations representing nothing more than short-term occupations. The multicomponent sites typically include limited prehistoric and Late Historic components. Overall, the recorded multicomponent sites are not significant under National Register Criteria A through D for the reasons described above.

The 437 Isolated Occurrences found are also not eligible for the National Register.

Note: The table below covers impacts to ineligible sites and potential adverse effects to historic properties.

Table I.1: Cultural Resource Site Types, National Register Eligibility, and Potential Effects to Sites Based on OHV-Open or OHV-Limited Designations

State Site No.	Site Type	National Register Eligibility	Potential Effect of an OHV-Open or OHV-Limited Designation
42EM1030	Flaked Stone Scatter	Eligible	No Effect
42EM1045	Artifact Scatter	Not Eligible	No Effect
42EM1057	Lithic Source	Eligible	No Effect
42EM1059	Lithic Source & Historic Artifact Scatter	Eligible	No Effect
42EM1060/ 42EM3669/ 42EM3670	Flaked Stone Scatter	Eligible	No Effect
42EM1183	Flaked Stone Scatter	Not Eligible	No Effect
42EM1350	Prehistoric Lithic Source & Historic Artifact Scatter	Eligible	No Effect
42EM1354	Prehistoric Flaked Stone Scatter & Historic Trash Dump	Not Eligible	No Effect
42EM1369	Lithic Scatter	Eligible	No Effect
42EM1600	Temporary Camp	Not Eligible	No Effect
42EM1836/ 42EM1837	Lithic Source	Eligible	No Effect

State Site No.	Site Type	National Register Eligibility	Potential Effect of an OHV-Open or OHV-Limited Designation
42EM1960	Flaked Stone Scatter & Possible Prehistoric Feature & Historic Can Scatter	Eligible	No Effect
42EM2107	Lithic Source	Eligible	No Effect
42EM2182	Flaked Stone Scatter	Not Eligible	No Effect
42EM2183	Flaked Stone Scatter	Not Eligible	No Effect
42EM2184	Green River to Hanksville Road	Not Eligible	No Effect
42EM2208	Flaked Stone Scatter	Not Eligible	No Effect
42EM2209	Artifact Scatter	Not Eligible	No Effect
42EM2290	Flaked Stone Scatter	Eligible	No Effect
42EM2291	Flaked Stone Scatter	Not Eligible	No Effect
42EM2292	Flaked Stone Scatter	Not Eligible	No Effect
42EM2293	Flaked Stone Scatter	Eligible	Effect
42EM2606	Prehistoric Temporary Camp & Historic Shepherding Camp	Eligible	No Effect
42EM3389	Rock Art	Not Eligible	No Effect
42EM3390	Rock Art & Rock Wall	Eligible	No Effect
42EM3729	Flaked Stone Scatter	Not Eligible	No Effect
42EM3746	Flaked Stone Scatter	Not Eligible	No Effect
42EM3747	Temporary Camp	Eligible	No Effect
42EM3755	Prehistoric Lithic Scatter & Historic Artifact Scatter	Eligible	No Effect
42EM3775	Prehistoric Lithic Scatter & Historic Artifact Scatter & Inscriptions	Eligible	No Effect
42EM3776	Lithic Scatter	Eligible	No Effect
42EM3780/ 42EM3805	PaleoIndian-Archaic / 8000 B.C.-A.D. 0	Eligible	No Effect
42EM3786	Lithic Scatter	Eligible	No Effect
42EM3800	Flaked Stone Scatter & Historic Can Scatter	Not Eligible	No Effect
42EM3808	Flaked Stone Scatter	Eligible	No Effect
42EM3820	Artifact Scatter	Eligible	No Effect
42EM3831	Lithic Source	Eligible	No Effect
42EM4576	Lithic Source	Eligible	No Effect
42EM4716	Flaked Stone Scatter	Eligible	No Effect
42EM4986	Feature & Can Scatter	Not Eligible	No Effect
42EM4987	Flaked Stone Scatter	Not Eligible	No Effect
42EM4988	Lithic Scatter	Eligible	No Effect
42EM4989	Lithic Scatter	Eligible	No Effect
42EM4990	Lithic Source	Not Eligible	No Effect
42EM4991	Flaked Stone Scatter	Not Eligible	No Effect
42EM4992	Trash Dump	Not Eligible	No Effect
42EM4993	Temporary Camp	Not Eligible	No Effect

State Site No.	Site Type	National Register Eligibility	Potential Effect of an OHV-Open or OHV-Limited Designation
42EM4994	Flaked Stone Scatter	Not Eligible	No Effect
42EM4995	Flaked Stone Scatter	Not Eligible	No Effect
42EM4996	Flaked Stone Scatter	Not Eligible	No Effect
42EM4997	Temporary Camp	Eligible	No Effect
42EM4998	Lithic Scatter	Not Eligible	No Effect
42EM4999	Flaked Stone Scatter	Eligible	No Effect
42EM5000	Trash Dumps	Not Eligible	No Effect
42EM5001	Flaked Stone Scatter	Not Eligible	No Effect
42EM5002	Flaked Stone Scatter	Not Eligible	No Effect
42EM5003	Trash Dumps	Not Eligible	No Effect
42EM5004	Lithic Scatter	Not Eligible	No Effect
42EM5005	Artifact Scatter	Eligible	No Effect
42EM5006	Flaked Stone Scatter	Not Eligible	No Effect
42EM5007	Flaked Stone Scatter	Not Eligible	No Effect
42EM5008	Feature & Artifact Scatter	Not Eligible	No Effect
42EM5009	Prehistoric Lithic Scatter & Historic Habitation	Eligible	Effect
42EM5010	Flaked Stone Scatter	Eligible	No Effect
42EM5011	Flaked Stone Scatter	Not Eligible	No Effect
42EM5012	Lithic Scatter	Eligible	No Effect
42EM5013	Prehistoric Flaked Stone Scatter & Historic Artifact Scatter	Not Eligible	No Effect
42EM5014	Flaked Stone Scatter	Not Eligible	No Effect
42EM5015	Flaked Stone Scatter	Not Eligible	No Effect
42EM5016	Flaked Stone Scatter	Not Eligible	No Effect
42EM5017	Flaked Stone Scatter	Not Eligible	No Effect
42EM5018	Lithic Scatter	Eligible	No Effect
42EM5019	Flaked Stone Scatter	Not Eligible	No Effect
42EM5020	Lithic Scatter	Eligible	No Effect
42EM5021	Feature & Artifact Scatter	Not Eligible	No Effect
42EM5022	Lithic Source	Eligible	No Effect
42EM5023	Flaked Stone Scatter	Not Eligible	No Effect
42EM5024	Flaked Stone Scatter	Not Eligible	No Effect
42EM5025	Lithic Source	Eligible	No Effect
42EM5026	Lithic Source	Eligible	No Effect
42EM5027	Flaked Stone Scatter	Not Eligible	No Effect
42EM5028	Features & Artifact Scatter	Not Eligible	No Effect
42EM5029	Capped Well	Not Eligible	No Effect
42EM5030	Flaked Stone Scatter	Not Eligible	No Effect

State Site No.	Site Type	National Register Eligibility	Potential Effect of an OHV-Open or OHV-Limited Designation
42EM5031	Flaked Stone Scatter	Not Eligible	No Effect
42EM5032	Flaked Stone Scatter	Eligible	No Effect
42EM5033	Lithic Scatter	Eligible	No Effect
42EM5034	Flaked Stone Scatter	Not Eligible	No Effect
42EM5035	Lithic Scatter	Not Eligible	No Effect
42EM5036	Flaked Stone Scatter	Not Eligible	No Effect
42EM5037	Flaked Stone Scatter	Not Eligible	No Effect
42EM5038	Flaked Stone Scatter	Not Eligible	No Effect
42EM5039	Temporary Camp	Eligible	No Effect
42EM5040	Flaked Stone Scatter	Not Eligible	No Effect
42EM5041	Temporary Camp	Eligible	No Effect
42EM5042	Flaked Stone Scatter	Eligible	No Effect
42EM5043	Flaked Stone Scatter	Not Eligible	No Effect
42EM5044	Flaked Stone Scatter	Not Eligible	No Effect
42EM5045	Flaked Stone Scatter	Not Eligible	No Effect
42EM5046	Feature & Artifact Scatter	Not Eligible	No Effect
42EM5047	Flaked Stone Scatter	Eligible	Effect
42EM5048	Prehistoric Flaked Stone Scatter & Historic Artifact Scatter	Eligible	No Effect
42EM5049	Flaked Stone Scatter	Not Eligible	No Effect
42EM5050	Flaked Stone Scatter	Not Eligible	No Effect
42EM5051	Flaked Stone Scatter	Eligible	No Effect
42EM5052	Flaked Stone Scatter	Not Eligible	No Effect
42EM5053	Flaked Stone Scatter	Not Eligible	No Effect
42EM5054	Flaked Stone Scatter	Not Eligible	No Effect
42EM5055	Lithic Source	Eligible	No Effect
42EM5056	Lithic Source	Eligible	No Effect
42EM5057	Temporary Camp	Eligible	No Effect
42EM5058	Flaked Stone Scatter	Not Eligible	No Effect
42EM5059	Flaked Stone Scatter	Eligible	No Effect
42EM5060	Flaked Stone Scatter	Not Eligible	No Effect
42EM5061	Lithic Scatter	Eligible	No Effect
42EM5062	Flaked Stone Scatter	Not Eligible	No Effect
42EM5063	Trash Dump	Not Eligible	No Effect
42EM5064	Flaked Stone Scatter	Not Eligible	No Effect
42EM5065	Lithic Scatter	Not Eligible	No Effect
42EM5066	Lithic Source	Not Eligible	No Effect
42EM5067	Flaked Stone Scatter	Not Eligible	No Effect
42EM5068	Flaked Stone Scatter	Not Eligible	No Effect

State Site No.	Site Type	National Register Eligibility	Potential Effect of an OHV-Open or OHV-Limited Designation
42EM5069	Flaked Stone Scatter	Not Eligible	No Effect
42EM5070	Flaked Stone Scatter	Not Eligible	No Effect
42EM5071	Flaked Stone Scatter	Not Eligible	No Effect
42EM5072	Flaked Stone Scatter	Not Eligible	No Effect
42EM5073	Lithic Scatter	Eligible	No Effect
42EM5074	Prehistoric Flaked Stone Scatter & Historic Artifact Scatter	Not Eligible	No Effect
42EM5075	Flaked Stone Scatter	Eligible	No Effect
42EM5076	Lithic Source	Not Eligible	No Effect
42EM5077	Flaked Stone Scatter	Eligible	No Effect
42EM5078	Prehistoric Lithic Scatter & Historic Can Scatter	Eligible	No Effect
42EM5079	Lithic Source	Not Eligible	No Effect
42EM5080	Lithic Source	Eligible	No Effect
42EM5081	Temporary Camp	Not Eligible	No Effect
42EM5082	Lithic Scatter	Eligible	No Effect
42EM5083	Temporary Camp	Eligible	No Effect
42EM5084	Flaked Stone Scatter	Not Eligible	No Effect
42EM5085	Flaked Stone Scatter	Not Eligible	No Effect
42EM5086	Lithic Source	Not Eligible	No Effect
42EM5087	Flaked Stone Scatter	Not Eligible	No Effect
42EM5088	Lithic Source	Not Eligible	No Effect
42EM5089	Lithic Source	Not Eligible	No Effect
42EM5090	Lithic Scatter	Not Eligible	No Effect
42EM5091	Flaked Stone Scatter	Not Eligible	No Effect
42EM5092	Lithic Source	Not Eligible	No Effect
42EM5093	Flaked Stone Scatter	Not Eligible	No Effect
42EM5094 42WN3550	Lithic Source	Eligible	No Effect
42EM5095	Flaked Stone Scatter	Not Eligible	No Effect
42EM5096	Flaked Stone Scatter	Not Eligible	No Effect
42EM5097	Lithic Source & Historic Can Scatter	Not Eligible	No Effect
42EM5098	Artifact Scatter	Not Eligible	No Effect
42EM5099	Artifact Scatter	Not Eligible	No Effect
42EM5100	Artifact Scatter	Not Eligible	No Effect
42EM5101	Artifact Scatter	Not Eligible	No Effect
42EM5102	Flaked Stone Scatter	Not Eligible	No Effect
42EM5103	Flaked Stone Scatter	Not Eligible	No Effect
42EM5104	Flaked Stone Scatter	Not Eligible	No Effect
42EM5105	Flaked Stone Scatter	Not Eligible	No Effect

State Site No.	Site Type	National Register Eligibility	Potential Effect of an OHV-Open or OHV-Limited Designation
42EM5106	Artifact Scatter	Not Eligible	No Effect
42EM5107	Flaked Stone Scatter	Not Eligible	No Effect
42EM5108	Lithic Source	Not Eligible	No Effect
42EM5109	Trash Dump	Not Eligible	No Effect
42EM5110	Trash Dump	Not Eligible	No Effect
42EM5111	Artifact Scatter	Not Eligible	No Effect
42EM5112	Lithic Scatter	Not Eligible	No Effect
42EM5113	Flaked Stone Scatter	Not Eligible	No Effect
42EM5114	Flaked Stone Scatter	Not Eligible	No Effect
42EM5115	Lithic Scatter	Eligible	No Effect
42EM5116	Lithic Source	Not Eligible	No Effect
42EM5117	Lithic Source	Not Eligible	No Effect
42EM5118	Lithic Source	Eligible	No Effect
42EM5119	Habitation	Eligible	No Effect
42EM5120	Mine	Not Eligible	No Effect
42EM5121	Mine	Not Eligible	No Effect
42EM5122	Bridge	Not Eligible	No Effect
42EM5123	Flaked Stone Scatter	Not Eligible	No Effect
42EM5124	Lithic Scatter	Eligible	No Effect
42EM5125	Flaked Stone Scatter	Not Eligible	No Effect
42EM5126	Flaked Stone Scatter	Not Eligible	No Effect
42EM5127	Trash Dump	Not Eligible	No Effect
42EM5128	Flaked Stone Scatter	Not Eligible	No Effect
42EM5129	Prehistoric Flaked Stone Scatter & Historic Artifact Scatter	Not Eligible	No Effect
42EM5130	Lithic Source	Eligible	No Effect
42EM5131	Lithic Source	Not Eligible	No Effect
42EM5132	Lithic Scatter	Eligible	No Effect
42EM5133	Features & Artifact Scatter	Not Eligible	No Effect
42EM5134	Flaked Stone Scatter	Not Eligible	No Effect
42EM5135	Flaked Stone Scatter	Not Eligible	No Effect
42EM5136	Trash Dump	Not Eligible	No Effect
42EM5137	Flaked Stone Scatter	Not Eligible	No Effect
42EM5138	Lithic Source	Eligible	No Effect
42EM5139	Lithic Source	Eligible	No Effect
42EM5140 42WN3549	Road	Not Eligible	No Effect
42EM5141	Road	Not Eligible	No Effect
42EM5142	Road	Not Eligible	No Effect

State Site No.	Site Type	National Register Eligibility	Potential Effect of an OHV-Open or OHV-Limited Designation
42EM5143	Road	Not Eligible	No Effect
42EM5144	Road	Not Eligible	No Effect
42EM5145	Road	Not Eligible	No Effect
42EM5146 42WN3548	Flaked Stone Scatter	Not Eligible	No Effect
42EM5217	Can Scatter	Not Eligible	No Effect
42EM5218	Can Scatter	Not Eligible	No Effect
42EM5219	Flaked Stone Scatter	Not Eligible	No Effect
42EM5220	Artifact Scatter	Not Eligible	No Effect
42EM5221	Flaked Stone Scatter	Not Eligible	No Effect
42EM5222	Lithic Source	Eligible	No Effect
42EM5223	Artifact Scatter	Not Eligible	No Effect
42EM5224	Lithic Source	Not Eligible	No Effect
42EM5225	Lithic Source	Not Eligible	No Effect
42EM5226	Lithic Source	Not Eligible	No Effect
42EM5227	Mine	Eligible	No Effect
42EM5228	Flaked Stone Scatter	Not Eligible	No Effect
42EM5229	Flaked Stone Scatter	Not Eligible	No Effect
42EM5230	Flaked Stone Scatter	Not Eligible	No Effect
42EM5231	Can Scatter	Not Eligible	No Effect
42EM5232	Lithic Scatter	Not Eligible	No Effect
42EM5233	Lithic Source	Not Eligible	No Effect
42EM5234	Flaked Stone Scatter	Not Eligible	No Effect
42EM5235	Mine	Not Eligible	No Effect
42EM5236	Flaked Stone Scatter	Not Eligible	No Effect
42EM5237	Pit Features	Eligible	No Effect
42EM5238	Lithic Source	Not Eligible	No Effect
42EM5239	Lithic Source	Eligible	No Effect
42EM5240	Lithic Source	Not Eligible	No Effect
42EM5241	Lithic Source	Not Eligible	No Effect
42EM5242	Lithic Source	Not Eligible	No Effect
42EM5243	Lithic Source	Eligible	No Effect
42EM5244	Lithic Source	Not Eligible	No Effect
42EM5245	Road	Not Eligible	No Effect
42EM5246	Road	Not Eligible	No Effect

State Site No.	Site Type	National Register Eligibility	Potential Effect of an OHV-Open or OHV-Limited Designation
42EM5247	Road	Not Eligible	No Effect

APPENDIX J. SAN RAFAEL DESERT TRAVEL PLANNING BIOLOGICAL RESOURCE EVALUATION

Biological Resources

The 2008 RMP states the BLM will implement the decisions of the selected plan in compliance with the Endangered Species Act, as amended. The BLM will conduct Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) on listed plant and animal species, as necessary, for individual actions taken under this plan. The BLM will not authorize any action that will contribute to the need to list any non-listed special status species (16 USC 1536 (a) and 50 CFR 402). Management of BLM Sensitive Species falls under the BLM 6840 Manual, which establishes procedures for the management of species designated as BLM-sensitive, birds of conservation concern, and the habitats of BLM-sensitive species and birds of conservation concern. The BLM shall designate BLM-sensitive species and implement measures to conserve these species and their habitats, to promote their conservation and reduce the likelihood and need for such species to be listed under the ESA. The BLM also includes species of concern that the State of Utah has identified into its sensitive species analysis. Prior to implementing the San Rafael Desert Travel Management Plan, the USFWS' IPaC list was reviewed together with the BLM Sensitive Plant and Sensitive Wildlife Species lists for Utah to ensure due consideration was given to potentially affected resources during the planning process. Surveys, inventories, and habitat models for listed and proposed species have been conducted and developed for many years by various individuals, organizations, and government agencies including, but not limited to, BLM, U.S. Forest Service (FS), USFWS, U.S. Geological Survey (USGS), universities, and state wildlife and natural resource agencies. Information gathered from these surveys, inventories, observations, and models was used to help describe and determine species distributions, habitat use, and habitat suitability.

Summary Tables for Endangered, Threatened, Candidate, and BLM Sensitive Species

Table J.1: Plant Species

Common Name	Conservation Status	Considered for Further Analysis
Barneby reed-mustard	Endangered	Yes.
Jones Cycladenia	Threatened	Yes.
Last Chance Townsendia	Threatened	No.
Navajo sedge	Threatened	Yes.
San Rafael cactus	Endangered	Yes.
Shrubby reed-mustard	Endangered	No.
Uinta Basin hookless cactus	Threatened	No.
Ute's Ladies' Tresses	Threatened	Yes.
Winkler cactus	Threatened	No.
Wright fishhook cactus	Endangered	Yes.
Bolander's camissonia	BLM Sensitive Species	Yes.
Cisco milkvetch	BLM Sensitive Species	Yes.
Cretuzfeldt-flower	BLM Sensitive Species	No.
Entrada rushpink	BLM Sensitive Species	Yes.

Common Name	Conservation Status	Considered for Further Analysis
Flat Top buckwheat, Smith's wild buckwheat	BLM Sensitive Species	Yes.
Graham's beardtongue	BLM Sensitive Species	No.
Horse Canyon stickleaf	BLM Sensitive Species	No.
Jones indigo bush, Jones' dalea	BLM Sensitive Species	Yes.
Maguire's daisy	BLM Sensitive Species	No.
Mussentuchit gilia	BLM Sensitive Species	No.
Peabody's milkvetch, Green River milkvetch	BLM Sensitive Species	No.
Psoralea globemallow, scurfpea globemallow	BLM Sensitive Species	Yes.
Stage Station Milkvetch	BLM Sensitive Species	Yes.
Thompson's talinum, Cedar mountain flameflower	BLM Sensitive Species	No.
Trotter's oreoxis	BLM Sensitive Species	Yes.
Utah phacelia	BLM Sensitive Species	No.
Utah spurge	BLM Sensitive Species	Yes.

Table J.2: Wildlife Species

Common Name	Conservation Status	Considered for Further Analysis
Bird Species		
California condor	Experimental Population, Non-Essential	No.
Mexican spotted owl	Threatened	Yes.
Southwestern willow flycatcher	Endangered	Yes.
Yellow-billed Cuckoo	Threatened	Yes.
American Three-toed woodpecker	BLM Sensitive Species	No.
Bald eagle	BLM Sensitive Species	Yes.
Burrowing owl	BLM Sensitive Species	Yes.
Ferruginous hawk	BLM Sensitive Species	Yes.
Golden Eagle	BLM Sensitive Species	Yes.
Greater sage-grouse	BLM Sensitive Species	No.
Lewis's woodpecker	BLM Sensitive Species	No.
Long-billed curlew	BLM Sensitive Species	No.
Northern goshawk	BLM Sensitive Species	No.
Fish Species		
Humpback chub	Endangered	Yes.
Colorado pikeminnow (=squawfish)	Endangered	Yes.
Bonytail chub	Endangered	Yes.
Razorback sucker	Endangered	Yes.
Bonneville cutthroat trout	Conservation Agreement Species	No.
Bluehead sucker	Conservation Agreement Species	Yes.
Colorado River cutthroat throat	Conservation Agreement Species	No.

Common Name	Conservation Status	Considered for Further Analysis
Flannelmouth sucker	Conservation Agreement Species	Yes.
Roundtail chub	Conservation Agreement Species	Yes.
Invertebrate Species		
Monarch Butterfly	BLM Sensitive Species	Yes.
Western Bumble Bee	BLM Sensitive Species	Yes.
Reptile and Amphibian Species		
Corn Snake	BLM Sensitive Species	Yes.
Great Plains Toad	BLM Sensitive Species	Yes.
Western Boreal Toad	BLM Sensitive Species	No.
Mammal Species		
Utah Prairie Dog	Endangered	No.
Fringed myotis	BLM Sensitive Species	Yes.
Kit fox	BLM Sensitive Species	Yes.
Spotted bat	BLM Sensitive Species	Yes.
Townsend's big-eared bat	BLM Sensitive Species	Yes.
Western red bat	BLM Sensitive Species	Yes.
White-tailed prairie dog	BLM Sensitive Species	Yes.

Rationale Tables

Table J.3: Endangered, Threatened, Candidate, and BLM Sensitive Plant Species

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Barneby reed-mustard	<i>Schoenocrambe barnebyi</i>	Endangered	The majority of the known occupied sites are on cool, steep, north-facing, mid to upper-slopes within pinyon pine-juniper communities. Prefers coarse soils derived from cobble and gravel river terrace deposits, or rocky surfaces. Plants also may occur on different exposures in the higher elevation sites, potentially due to cooler temperatures. Though mostly found on the Moenkopi Formation it is also known from Kaibab Limestone, Chinle, Cutler, and Carmel formations.	Yes. No individuals of this species have been recorded within the Planning Area (PA) and the only two recorded populations in Utah are from cool, shaded, north facing slopes at higher elevations in SW Emery County, and Capitol Reef National Park, in the SW corner of Wayne County. However, species' USFWS AOI extends to western border of the TMA and surveys haven't been done in the area so this species was considered and habitat is the AOI.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Jones Cycladenia	<i>Cycladenia humilis</i> var. <i>jonesii</i>	Threatened	Known from four general areas in Utah: the Joe Hutch complex (along the Green River), the San Rafael Swell complex (west of the town of Green River), the Castle Valley complex (near Moab), and the Grand Staircase-Escalante National Monument. It is located on isolated habitats in central and southern Utah, occurring between 4,390 to 6,000 feet (1,338 to 1,829 meters) in plant communities of mixed desert scrub, juniper, or wild buckwheat-Mormon tea. It is found on gypsiferous, saline soils of Cutler, Summerville, and Chinle Formations.	Yes. Species is known from Emery County, with recorded observations occurring less than 2 mi outside of the PA. Additionally, modeled habitat is extensive within the PA and geology, elevation, and vegetation community association is appropriate for occurrence. To try to balance BLM's multiple-use management directive, only the highest categories (38% and 34%) for possibility of occurrence were used when considering the habitat model.
Last Chance townsendia	<i>Townsendia aprica</i>	Threatened	Occurs over a wide elevation gradient (6,100-9,100ft), in several different vegetative communities, and on a variety of soil substrates. The majority of populations are found on soils within the Moenkopi Formation, Morrison Formation, Mancos Shale Group, and the San Rafael Group. However, the species appears to be restricted to fine-textured shale soils within each formation.	No. There are no recorded observations of individuals within the PA. All known occurrences of this species within the PFO are on the western side of the San Rafael Swell. A review of habitat characteristics and modeled potential habitat suggests there is little chance for occurrence within the PA.
Navajo sedge	<i>Carex specuicola</i>	Threatened	A wetland obligate of springs, typically in alcoves associated with aeolian sandstone cliffs of varying height and slope (often vertical) at 4,200-7,600 feet (1,280-2,300m) elevation in piñon-juniper woodland. Adapted to the specialized habitat of seepages on sandstone cliffs in an arid plateau ecoregion it rarely occurs on level terrain. The seep-spring pockets along the Navajo Sandstone Formation bedrock provide this habitat.	Yes. There are no known individuals within the PA, but suitable geology for this species is found at the far SE extent of Emery County along the Green River.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
San Rafael cactus	<i>Pediocactus despainii</i>	Endangered	Occurs almost exclusively within Emery County, primarily in the Central and SW portion. It grows in a wide variety of soils, although it may favor fine textured, mildly alkaline soils rich in calcium and derived 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, Carmel, Mancos and Dakota geologic formations and in areas of primarily alluvial and colluvium soils. The species most commonly occurs on benches, hill tops, and gentle slopes, and most abundantly on sites with a south exposure at elevations of 4760-6820 ft (1450-2080 m). Much of the year cacti from both species shrink underground or back to ground surface.	Yes. Known occurrences are well outside the PA (The closest known populations occur approximately 13.7 miles to the west of project area.), but portions of the TMA contain proper geologic substrate for the species. Additionally, USFWS AOI extends across a large swath of the northern portion of the TMA. Species AOI within the TMA is considered potential habitat.
Shrubby reed-mustard	<i>Schoenocrambe suffrutescens</i>	Endangered	Grows along level to moderately sloping ground surfaces in an extremely limited band of semi-barren, white-shale layers of the Evacuation Creek member of the Green River Formation in the Uinta Basin of eastern Utah. The habitat of this plant is disjunct knolls and surrounded by mixed desert shrub and pinyon-juniper woodland.	No. <i>Schoenocrambe suffrutescens</i> occurs in three areas in Uintah and Duchesne Counties. Gray Knolls Area, Pack mountain Area, Badlands Cliff Area. No individuals have been recorded within the PA, proper geologic substrate (Green River formation) is absent from the PA, and modeled habitat is >20 miles outside of the PA boundaries.
Uinta Basin hookless cactus	<i>Sclerocactus wetlandicus</i>	Threatened	In Utah, Populations occur in Uintah, Duchesne, and Carbon Counties along the Green River and its tributaries.	No. No individuals have been recorded within the PA, proper geologic substrate is absent from the PA, and modeled habitat is outside of the PA boundaries.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Ute's Ladies' Tresses	<i>Spiranthes diluvialis</i>	Threatened	Occurs along riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams. It typically occurs in stable wetland and mesic areas associated with old landscape features within historical floodplains of major rivers. It also is found in wetland areas near freshwater lakes or springs.	Yes. Though no individuals have been recorded within the PA, the recovery plan for this species states that the upper Colorado River Basin, in particular the Uinta Basin, is one of three general areas the plant is known from. The range-wide status review indicates several populations, outside the PA, along the Green River and within the Colorado Plateau. Due to its sporadic occurrence in mesic and riparian areas, the Green River along the eastern boundary provides suitable habitat.
Winkler cactus	<i>Pediocactus winkleri</i>	Threatened	Endemic to fine textured soils derived from the Dakota and Morrison formation in the lower Fremont River in Wayne County and southeast Sevier Counties of south-central Utah. It is generally found at elevations between 4,900-7000 ft (1,500 - 2,130 meters m) on rocky, alkaline hill tops and benches, and on gentle slopes within barren, open sites in salt desert shrub communities.	No. No known occurrences within the PA. Species is almost exclusively known to occur in Wayne County, with one small population in the far SE corner of Sevier County, UT. While there is suitable geologic substrate, its preference for rocky, alkaline, silty loam to clay loam soils precludes it from the sand dune and slickrock habitat common throughout the PA.
Wright fishhook cactus	<i>Sclerocactus wrightiae</i>	Endangered	Found on an array of geologic substrates at elevations ranging from 4,200-7,000 ft (1,280-2,130 m) on semi-barren sites in salt desert shrub communities. It appears the limiting factor for Wright fishhook cactus is soil physiology. These plants are most often found in locations typified by level to gently sloping terrain with fine- or medium-sized gravels, pebbles, or fossil oyster shells across the surface of the soil and in close proximity to fine textured, saline and/or gypsiferous strata in proximity to sand-forming geologic stratum that contributes to the substrate, area. Cacti are rare or absent in areas where biotic crusts have been destroyed or are undeveloped.	Yes. Though no known individuals have been recorded within the PA there is a population of individuals less than 5 mi outside the western PA boundary. This population, along with other known populations, occurs on geologic substrates, within elevational bands, and as a component of vegetative communities present throughout the southern portion of the PA.
Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Bolander's camissonia	<i>Camissonia bolanderi</i>	BLM Sensitive Species	Endemic to Emery County, Utah, and known only from the type locality at the upper Tidwell Draw (<10 mi from PA boundary) where it was in association with shadscale and Mormon tea on the Moenkopi Formation at 4,780 ft (1,450 m) in elevation.	Yes. While unlikely to occur, its type locality, Tidwell Draw, is less than 10 mi from the northwestern boundary of the PA. Due to the lack of knowledge about this species and its type locality's similarity and proximity to the PA, it could not be excluded from consideration.
Cisco milkvetch	<i>Astragalus sabulosus var sabulosus</i>	BLM Sensitive Species	Known to occur with salt desert shrub communities on the Mancos Shale Formation at 4,250 to 5,250 ft (1,300-1600 m) in elevation.	Yes. Individuals have been recorded in Grand County, adjacent to the PA. Modeled habitat is extensive within the PA and geology, elevation, and vegetation community association is appropriate for occurrence.
Cretzfeldt-flower	<i>Cryptantha creutzfeldtii</i>	BLM Sensitive Species	Endemic to Carbon, Emery, and Sevier Counties, Utah. Occurs in shadscale and mat saltbush communities on the Mancos Formation from 5,250 to 6,500 ft (1,600-2,000 m) in elevation.	No. No individuals have been recorded within the PA. While Mancos Shale geologic substrate does exist within the PA, all individuals and occupied habitat within the PFO occur in the western extents of Carbon and Emery County, along the foothills of the Wasatch Plateau.
Entrada rushpink	<i>Lygodesmia grandiflora var entrada</i>	BLM Sensitive Species	Endemic to Emery, Grand, and San Juan Counties, Utah. Species typically occurs on the Entrada formation in mixed desert shrub communities and pinyon-juniper woodlands from 4,400 to 4,800 ft (1,340-1460 m) in elevation.	Yes. Species has been recorded within the PA and the PA contains suitable substrate, elevation, and vegetative community to predict further occurrence.
Flat Top buckwheat, Smith's wild buckwheat	<i>Eriogonum corymbosum var smithii</i>	BLM Sensitive Species	Endemic to the Colorado Plateau in Emery and Wayne Counties, Utah. Occurs on the Entrada Formation and on seleniferous stabilized dunes. Associated with purple sage, Mormon tea-Indian ricegrass, desert shrub, and rabbitbrush communities from 4,500 to 5,600' elevation.	Yes. Species has been recorded within the PA and the PA contains suitable substrate, elevation, and vegetative community to predict further occurrence.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Graham's beardtongue	<i>Penstemon grahamii</i>	BLM Sensitive Species	Occurs only in the Uinta Basin of northeastern Utah and adjacent western Colorado. It grows directly on the weathered exposures of oil-shale strata associated with the Parachute Creek and Evacuation Creek Members of the Green River Formation.	No. This species is expected to occur only in the Uinta Basin of NE Utah and adjacent western Colorado, there are no recorded observations of this species within or around the PA, and the species is found on geologic substrate related to the Green River Formation, which is entirely absent from the PA.
Horse Canyon stickleaf	<i>Mentzelia multicaulis var librina</i>	BLM Sensitive Species	A Colorado Plateau endemic known from Carbon and Emery Counties. It occurs in sagebrush, rabbitbrush, and pinyon-juniper communities at around 6,200 ft (1,890 m) in elevation. Known to occur on the Mancos Shale and Price River Formations.	No. There are no recorded occurrences of this species within the PA. Species is not known or expected within the PA due to the elevation it is found at and the vegetative community it is expected to co-occur within.
Jones indigo bush, Jones' dalea	<i>Psoralea polydenius var jonesii</i>	BLM Sensitive Species	Endemic to Emery and Grand counties, Utah. Known occurrences are on Blue Gate and Tununk members of Mancos Shale and, less commonly, on sandy terrace gravels at 4,200 to 4,900 ft (1,280-1,500 m) in elevation. Found in association with shadscale, mat-saltbush, Mormon tea, and galleta communities.	Yes. Species has been recorded within the PA and the PA contains suitable substrate, elevation, and vegetative community to predict further occurrence.
Maguire's daisy	<i>Erigeron maguirei</i>	BLM Sensitive Species	Endemic to Emery, Garfield, and Wayne Counties in Utah. The range of the species is estimated at 390 square miles (1,010 square kilometers) and extends from the San Rafael Swell south through Capitol Reef National Park. Found across a range of aspects and slopes in wash bottoms, canyon walls, slickrock, and mesa tops of the Wingate, Chinle, and, most often, Navajo Formations. Found with pinyon juniper-tall shrub, ponderosa pine-tall shrub, slickrock pockets, mountain shrub, and intermittent riparian communities from 5,200 to 8,600 ft (1,580-2,620 m) in elevation.	No. No known individuals have been recorded within the PA. While there is suitable geologic substrate along the SE extent of the PA, this area's distance from other populations, lack of suitable connecting habitat between this area and known populations, lower elevation (mostly below 5,000 ft), and drier vegetation community (desert scrub) suggest occurrence of this species is unlikely within the PA.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Mussentuchit gilia	<i>Aliciella tenuis</i>	BLM Sensitive Species	Endemic to Emery, Wayne, and Sevier Counties in Utah, this species has been found only 17 locations in the world. Occurs with pinyon/juniper, and mountain mahogany communities at 5,200 to 7,100 ft (1,500-2,160 m) in elevation. Not restricted to specific geologic substrates, but associated with a class of formations which share similar characteristics and which can range from calcareous substrates to pure sand.	No. No known individuals have been recorded within the PA. Habitat requirements for this Utah endemic are vaguely defined, but specific, as it is known from just 17 locations in the world which generally occur only on an, approximately, 30 mi section along the west side of the San Rafael reef. This habitat, though close geographically, differs greatly in geology, aspect, slope, and vegetative community from habitat found within the PA.
Peabody's milkvetch, Green River milkvetch	<i>Astragalus pubentissimus</i> var <i>peabodianus</i>	BLM Sensitive Species	Inhabits entrenched channels on the south and west flanks of the Tavaputs Plateau in pinyon-juniper and mixed desert shrub communities at 4,300 to 5,800 ft (1,300-1,770 m) elevation.	No. No known individuals have been recorded within the PA. The south and west flanks of the Tavaputs plateau are outside the PA and have a soil particular to the talus slopes eroded off the cliffs of the Tavaputs Plateau.
Psoralea globemallow, scurfpea globemallow	<i>Sphaeralcea psoraloides</i>	BLM Sensitive Species	Endemic to the Canyonlands of Utah, mostly in Emery and Wayne Counties, and barely crossing the Green River into western Grand County. It occupies hogbacks and intervening valleys along the eastern and southeastern foot-slope of the San Rafael Swell. Locally common on sandstone outcrops of the Jurassic Morrison Formation, north of I-80, it is commonly associated with desert scrub and pinyon-juniper communities on saline and gypsiferous soils derived from the Mancos Shale, Buckhorn Conglomerate, Curtis sandstone, Entrada siltstone, Carmel, and Kaibab limestone at 4,000 to 6,300 ft (1,220-1,920 m) in elevation.	Yes. Species has been recorded within the PA and the PA contains suitable geologic substrate, elevation, and vegetative community to predict further occurrence.
Stage Station Milkvetch	<i>Astragalus sabulosus</i> var. <i>vehiculus</i>	BLM Sensitive Species	Narrow endemic, known from near head of Courthouse Wash within Grand County, Utah. Found on the Morrison Formation associated with shadscale, woody-aster, and galleta vegetation communities at 4,500 to 5,250 ft (1,370-1600 m) in elevation.	Yes. While there are no records of occurrence within the PA, this species is known from Grand County, adjacent to the PA. Modeled habitat is extensive within the PA and geology, elevation, and vegetation community association is suitable for occurrence.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Thompson's talinum, Cedar mountain flameflower	<i>Phemeranthus thompsonii</i>	BLM Sensitive Species	Endemic to Emery County, Utah. Occurs in siliceous conglomeratic gravels, and is associated with pinyon-juniper and ponderosa pine communities at about 7,500 ft (2,280 m) in elevation. This species is limited to Cedar Mountain	No. Only occurs on Cedar Mountain, which is outside of the PA. Individual plant records were searched and no individuals were found near or within the PA.
Trotter's oreoxis	<i>Oreoxis trotteri</i>	BLM Sensitive Species	Endemic to Wayne County, Utah. Found in crevices or in sandy pockets on the Moab Tongue and, less often, on the Slick Rock members of the Entrada Sandstone. Favors open sites, usually with a northern aspect, and, occasionally, in alcoves and along shaded cliff bases. Associated with warm desert shrub and mixed juniper communities at 4,700 to 6,000 ft in elevation.	Yes. Species has been recorded within the PA and the PA contains suitable geologic substrate, elevation, and vegetative community to predict further occurrence.
Utah phacelia	<i>Phacelia utahensis</i>	BLM Sensitive Species	Obligate gypsophile found in salt desert shrub communities on clay hills and banks in the Arapien Shale formation at 5,500 to 6,200 feet in elevation.	No. This species is only known from the Arapien Shale formation.
Utah spurge	<i>Euphorbia nephradenia</i>	BLM Sensitive Species	Endemic to the Colorado Plateau in Emery, Garfield, Kane, and Wayne counties in Utah and Colorado. Occurs in dark clay hills, sand, and stabilized dunes primarily from the Tropic Shale and Entrada Formations. Associated with mat-saltbush, blackbrush, Mormon tea, and mixed sandy desert shrub and grassland communities from 3,800 to 4,800 ft (1,160-1,460 m) in elevation.	Yes. Species has been recorded within the PA and the PA contains suitable geologic substrate, elevation, and vegetative community to predict further occurrence.

Table J.4: Endangered, Threatened, Candidate, and Sensitive Bird Species

Common Name	Scientific Name	Conservation Status	General Habitat Description	Considered for Further Analysis.
California condor	<i>Gymnogyps californianus</i>	Experimental Population, Non-Essential	Found in California, Arizona, and Southern Utah. Nesting habitat is found in steep remote mountainous or canyon terrain on rock or cliff escarpments. These areas tended to be separate from foraging areas, which are typically open grasslands and oak savannas.	No. Experimental population in Utah, only known occurrence is in SW corner of the state. Northernmost extent of their known distribution is far southern Wayne County, and the San Rafael Desert lacks the steep mountainous terrain and cliff escarpments required for the species scavenging and nesting behavior.

Common Name	Scientific Name	Conservation Status	General Habitat Description	Considered for Further Analysis.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	Found in the southern and eastern parts of Utah on the Colorado Plateau, where it is a rare permanent resident. Prefers mixed coniferous and hardwood forests, but occupies a variety of habitats in different parts of its range, including various forest types and steep-walled rocky canyons. This last habitat being the primary habitat used in Utah. Spotted owls are nonmigratory.	Yes. Though not expected to occur in the PA, critical habitat for the species lies both north and south of the PA along the Green River. Suitable habitat canyon habitat can be found in the southeast corner of the TMA.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Inhabits southwestern riparian ecosystems. Breeding in relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands, including lakes. Most of these habitats are classified as forested wetlands or scrub-shrub wetlands. Habitat requirements for wintering are not well known, but include brushy savanna edges, second growth, shrubby clearings and pastures, and woodlands near water.	Yes. Due to the scarcity of riparian environments within the Colorado Plateau, the importance of riparian habitat to this species, and the similarity of the PA's Green River riparian zone to the designated Critical Habitat for this species, the riparian zones within the PA were considered suitable habitat.
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Threatened	Uses lowland riparian areas characterized by a dense sub-canopy or shrub layer (regenerating canopy trees, willows, or other riparian shrubs) within 300 ft of water. Over story in these habitats may be either large, gallery-forming or developing trees usually cottonwoods. In Utah, nesting habitats are found at 2,500 to 6,000 ft (750-1,820 m) in elevation.	Yes. Though the current distribution of western yellow-billed cuckoos in Utah is poorly understood, the riparian habitats throughout the PA are suitable for this species.
Common Name	Scientific Name	Conservation Status	General Habitat Description	Considered for Further Analysis.
American Three-toed woodpecker	<i>Picoides dorsalis</i>	BLM Sensitive Species	In Utah, this woodpecker nests and winters in coniferous forests, generally above 8,000 ft (2,400 m) in elevation.	No. Species is restricted to high elevation conifer forests not found within the PA.
Bald eagle	<i>Haliaeetus leucocephalus</i>	BLM Sensitive Species	Occurs throughout the United States, Canada, and south into central Mexico. A rare breeder in Utah, it is widespread throughout the winter.	Yes. Species occurs in the area and suitable wintering habitat is present throughout the PA.
Burrowing owl	<i>Athene cunicularia</i>	BLM Sensitive Species	Usually, inhabits open grassland and prairies. Nesting owls use abandoned animal burrows at sites that occur in a variety of shrub-dominated habitats, including sagebrush steppe and desert scrub, often in sparsely vegetated areas.	Yes. Species occurs in the area and suitable habitat is present throughout the PA.

Common Name	Scientific Name	Conservation Status	General Habitat Description	Considered for Further Analysis.
Ferruginous hawk	<i>Buteo regalis</i>	BLM Sensitive Species	Ferruginous hawks avoid high elevations, forests, and narrow canyons, occurring in grasslands, agricultural areas, shrub lands, and at the periphery of pinyon-juniper forests. Breed in semiarid open country, typically near prairie dog colonies and requires large tracts of relatively undisturbed rangeland for foraging.	Yes. Species occurs in the area and suitable habitat is present throughout the PA.
Golden Eagle	<i>Aquila chrysaetos</i>	BLM Sensitive Species	Typically known to inhabit open and semi-open country especially in hilly or mountainous regions, in areas with sufficient mammalian prey base and near suitable nesting sites.	Yes. Species occurs in the area and suitable habitat is present throughout the PA.
Greater sage-grouse	<i>Centrocercus urophasianus</i>	BLM Sensitive Species	Scattered populations occur throughout much of Utah excluding most of the Colorado Plateau. Occurs primarily in habitat dominated by sagebrush though other habitats, such as wet meadows, may be of high importance seasonally.	No. Species is not known to occur within the PA and the arid, low elevation grassland and desert shrub vegetation is unsuitable to the species.
Lewis's woodpecker	<i>Melanerpes lewis</i>	BLM Sensitive Species	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.	No. Species is not known to occur within the PA and the arid, low elevation grassland and desert shrub vegetation is unsuitable to the species.
Long-billed curlew	<i>Numenius americanus</i>	BLM Sensitive Species	Fairly common summer resident and migrant in Utah, especially through the central and northern valleys. Prefers arid grasslands, grassy shorelines, and agricultural areas for nesting.	No. While the PA contains arid grasslands that fall within the habitat type commonly used by this species, there are no records of observations within the PA (UDWR 1996, 1997, 2003)(PIF 2002) and USGS (2019) Gap Analysis Habitat Models exclude this species from the PA.
Northern goshawk	<i>Accipiter gentilis</i>	BLM Sensitive Species	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. Females lay and then incubate a single clutch of two to four eggs; eggs hatch in 32-34 days. Young are able to fly at about five to six weeks of age, but they are still dependent on their parents for food until they reach about ten weeks of age.	No. Species is not known to occur within the PA and the arid, low elevation grassland and desert shrub vegetation is unsuitable to the species.

Table J.5: Endangered, Threatened, Candidate, and Conservation Agreement Fish Species

Common Name	Scientific Name	Conservation Status	General Habitat Description	Considered for Further Analysis.
Humpback chub	<i>Gila cypha</i>	Endangered	Species occur within the Green River and Upper Colorado River Basins	Yes. The Green River, critical habitat for all four species, serves as the eastern boundary of the planning area.
Colorado pikeminnow (=squawfish)	<i>Ptychocheilus lucius</i>			
Bonytail chub	<i>Gila elegans</i>			
Razorback sucker	<i>Xyrauchen texanus</i>			
Common Name	Scientific Name	Conservation Status	General Habitat Description	Considered for Further Analysis.
Bonneville cutthroat trout	<i>Oncorhynchus clarkii</i>	Conservation Agreement Species	Widely distributed from southern Alaska to northern California and inland in the Columbia River, Missouri River, Southern Rocky Mountains, and the Great Basin drainages.	No. According to the Range-wide Conservation Agreement (UDWR 2000), there are 5 Bonneville Geographic Management units, none of which contain the PA, the PFO, or the Price, San Rafael, or Green Rivers.
Colorado River cutthroat trout	<i>Oncorhynchus clarkii pleuriticus</i>	Conservation Agreement Species	The cool, clear water of high-elevation streams and lakes is the preferred habitat for Colorado River cutthroat trout.	No. This species is only expected in isolated high elevation headwater streams.
Bluehead sucker	<i>Catostomus discobolus</i>	Conservation Agreement Species	All species occur in the Upper Colorado River Basin.	Yes. The Green River provides suitable habitat for these species.
Flannelmouth sucker	<i>Catostomus latipinnis</i>	Conservation Agreement Species		
Roundtail chub	<i>Gila robusta</i>	Conservation Agreement Species		

Table J.6: Endangered, Threatened, Candidate, and BLM Sensitive Invertebrate Species

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Monarch Butterfly	<i>Danaus plexippus</i>	BLM Sensitive Species	Widespread in the U.S. throughout the summer months, wintering in warmer areas in Mexico and California. It inhabits a wide variety of habitat types requiring floral resources for food and milkweed for breeding, as its young will only eat plants from the milkweed family deriving protection from the cardiac glycosides produced within the milky latex excreted by the plant.	Yes. The riparian areas throughout the PA provide the most suitable habitat for this species within the arid desert environs.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Western Bumble Bee	<i>Bombus occidentalis</i>	BLM Sensitive Species	Though much reduced in range and number, this species, like most of the 300+ bee species in the San Rafael Desert, are ground nesting. The western bumble bee has three basic habitat requirements: suitable nesting sites for the colonies, nectar and pollen from floral resources available throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for the queens.	Yes. The PA falls within the species historic range and the riparian corridors can reasonably be expected to provide floral resources throughout the duration of the colony period.

Table J.7: Endangered, Threatened, Candidate, and BLM Sensitive Amphibian and Reptile Species

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Great Plains toad	<i>Anaxyrus cognatus</i>	BLM Sensitive Species	Occurs throughout the state, where it prefers desert, grassland, and agricultural habitats. In cold winter months, the Great Plains toad burrows underground and becomes inactive.	Yes. Species has been recorded in the area and suitable habitat is present throughout the PA.
Western (boreal) toad	<i>Anaxyrus boreas</i>	BLM Sensitive Species	Found in a wide range of habitats in western North America, including wetlands, forests, woodlands, sagebrush, meadows, and floodplains in the mountains and valleys. Observed in a wide range of elevations, they generally occur from 7,500 to 12,000 ft (2,250-3,600 m) in Utah.	No. In Utah, species is known from areas of high elevation, mainly the Wasatch mountains and Central Utah high plateaus.
Cornsnake	<i>Elaphe guttata</i>	BLM Sensitive Species	This species is found along the Colorado and Green river corridors, generally from Moab, Grand County, and north to Dinosaur National Monument, Uintah County. The distribution of populations within Utah appears to be quite patchy, but this may reflect the secretive behavior of the species. Scarce data is available to describe habitat use in Utah, but collection data implies the importance of riparian habitat.	Yes. Though little is known about this secretive species, the Green River corridor is considered habitat and there is historical documentation of the species in the area.

Table J.8: Endangered, Threatened, Candidate, and BLM Sensitive Mammal Species

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Utah prairie dog	<i>Cynomys parvidens</i>	Threatened	Utah prairie dogs prefer swale-type formations where moist herbaceous vegetation is available even during drought periods. Vegetation quality and quantity are important in helping Utah prairie dogs survive hibernation, lactation, and other high nutrient demand times. Species will avoid areas where brushy species dominate, as open habitats are important for foraging, visual surveillance to escape predators, and intraspecific interactions. Requires well-drained, deep soils (at least 3.3 ft deep) for burrowing.	No. Species is limited to the central and southwestern quarter of Utah in Beaver, Garfield, Iron, Kane, Piute, Sevier, and Wayne Counties.
Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Fringed myotis	<i>Myotis thysanodes</i>	BLM Sensitive Species	The species is widely distributed throughout Utah, but occurs primarily within the Colorado Plateau. It inhabits caves, mines, and buildings, most often in desert and woodland areas, but utilizes varied habitats, including mixed conifer and aspen, desert riparian, and pinyon-juniper. Populations tend to be associated with areas having rocky outcroppings, cliffs, and canyons.	Yes. Species occurs on the Colorado Plateau and is associated with desert and desert riparian areas found throughout the PA.
Kit fox	<i>Vulpes macrotis</i>	BLM Sensitive Species	Found in scattered localities throughout Utah, but is absent from the higher-elevation, montane portions of the state. Associated with sparsely vegetated arid habitat, primarily greasewood-, shadscale-, or sagebrush dominated habitat.	Yes. Species has been recorded within the PA and suitable habitat is found throughout the PA.
Spotted bat	<i>Euderma maculatum</i>	BLM Sensitive Species	Occurs in various habitats from desert to montane coniferous stands, including open ponderosa pine, pinyon-juniper woodland, canyon bottoms, riparian and river corridors, meadows, open pasture, and hayfields. Roosts, including maternity roosts, generally are in cracks and crevices in cliffs, sometimes in caves or in buildings near cliffs.	Yes. Suitable habitat is found throughout the PA.

Common Name	Scientific Name	Conservation Status	Habitat and Range Description	Considered for Further Analysis.
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BLM Sensitive Species	Occurs in a wide variety of habitats including sagebrush steppe, pinyon-juniper, mountain shrub, and mixed conifer associations. Primary habitat component is the availability of caves or mines for roost sites. Highest population densities generally occur in areas with complexes of mines or caves offering diverse roost habitat conditions.	Yes. Species has been recorded within the PA and suitable habitat is found throughout the PA.
Western red bat	<i>Lasiurus blossevillii</i>	BLM Sensitive Species	A tree bat, this species is closely associated with well-developed riparian habitats, most often in lowlands, and most often with cottonwoods and willows that provide suitable roosting sites.	Yes. Species is known from the region and the riparian corridors within the PA provide suitable habitat.
White-tailed prairie dog	<i>Cynomys leucurus</i>	BLM Sensitive Species	Found from 4,200 to 8,000 ft (1,280-2,438 m) in elevation, they require deep, well-drained soils for development of burrows, and inhabit flat to gently rolling slopes of less than 30% in areas characterized by low growing, widely spaced plants. Area vegetation is dominated by Atriplex spp. and to a lesser extent, sagebrush, greasewood, and rabbitbrush. Grasslands and high desert scrub are the primary and secondary habitat types, respectively.	Yes. Species is known from within the PA and suitable habitat is widespread.

Information Sources for Biological Resource Evaluation

Field Reconnaissance

Surveys, inventories, and habitat models for listed and proposed species have been conducted and developed for many years by various individuals, organizations, and government agencies. They include, but are not limited to, the Bureau of Land Management, the Forest Service, U.S. Fish and Wildlife Service, universities, and state wildlife and natural resource agencies. Information gathered from these surveys, inventories, and observations was used to help describe and determine species distributions, habitat use, and habitat suitability.

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APPENDIX K. MIGRATORY BIRDS OF PARTICULAR CONCERN

The list below was generated from the U.S. Fish and Wildlife Service's Information for Planning and Conservation (IPaC) System (USFWS 2019b) and is based on GIS data for Project Area boundaries. It lists MBTA species present or potentially present in the TMA that are of particular concern because they are on the BCC list or warrant special attention in the TMA.

- Bald eagle (*Haliaeetus leucocephalus*)
- Brewer's sparrow (*Spizella breweri*)
- Burrowing owl (*Athene cunicularia*)
- Golden eagle (*Aquila chrysaetos*)
- Gray vireo (*Vireo vicinior*)
- Lesser yellowlegs (*Tringa flavipes*)
- Marbled godwit (*Limosa fedoa*)
- Rufous hummingbird (*Selasphorus rufus*)
- Virginia's warbler (*Vermivora virginiae*)
- Willow flycatcher (*Empidonax traillii*)

APPENDIX L. MILES OF ROUTES IN LWC UNITS

Table L.1: Miles of Routes in LWC Units
(the far-left column notes the miles and percentages of total evaluated route miles in LWC unit)

	Designation	Alt. A		Alt. B		Alt. C		Alt. D	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Labyrinth Canyon A (14.4 miles; 1.2% of evaluated route miles)	OHV-Open	0.4	3.1%	0.0	0.2%	8.4	58.7%	9.3	64.8%
	OHV-Limited	0.0	0.0%	0.0	0.0%	4.9	33.9%	4.9	33.9%
	OHV-Closed	0.0	0.0%	14.3	99.8%	1.1	7.4%	0.2	1.3%
	Other Evaluated Routes	13.9	96.9%	-	-	-	-	-	-
Labyrinth Canyon B (0 miles; 0% of evaluated route miles)	OHV-Open	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
	OHV-Limited	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
	OHV-Closed	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
	Other Evaluated Routes	0.0	0.0%	-	-	-	-	-	-
San Rafael River A (14.6 miles; 1.2% of evaluated route miles)	OHV-Open	0.1	1.0%	0.0	0.0%	4.1	27.9%	9.5	64.8%
	OHV-Limited	0.0	0.0%	0.0	0.0%	1.4	9.8%	0.0	0.0%
	OHV-Closed	0.0	0.0%	14.6	100.0%	9.1	62.3%	5.1	35.2%
	Other Evaluated Routes	14.5	99.0%	-	-	-	-	-	-
San Rafael River B (71.4 miles; 6% of evaluated route miles)	OHV-Open	1.1	1.5%	0.0	0.1%	20.9	29.3%	30.4	42.6%
	OHV-Limited	0.0	0.0%	0.0	0.0%	12.7	17.8%	9.0	12.6%
	OHV-Closed	0.0	0.0%	71.3	99.9%	37.7	52.8%	32.0	44.8%
	Other Evaluated Routes	70.3	98.5%	-	-	-	-	-	-
San Rafael River C (11.9 miles; 1% of evaluated route miles)	OHV-Open	0.0	0.0%	0.0	0.0%	3.4	28.5%	5.9	49.6%
	OHV-Limited	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
	OHV-Closed	0.0	0.0%	11.9	100.0%	8.5	71.5%	6.0	50.4%
	Other Evaluated Routes	11.9	100.0%	-	-	-	-	-	-
San Rafael River D (145.2 miles; 12.3% of evaluated route miles)	OHV-Open	30.9	21.3%	4.0	2.7%	64.3	44.3%	74.6	51.4%
	OHV-Limited	0.0	0.0%	0.0	0.0%	16.4	11.3%	18.0	12.4%
	OHV-Closed	0.0	0.0%	141.2	97.3%	64.4	44.4%	52.6	36.2%
	Other Evaluated Routes	114.3	78.7%	-	-	-	-	-	-
San Rafael River E (9.9 miles; 0.8% of evaluated route miles)	OHV-Open	0.0	0.0%	0.0	0.0%	6.3	63.7%	7.9	79.6%
	OHV-Limited	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
	OHV-Closed	0.0	0.0%	9.9	100.0%	3.6	36.3%	2.0	20.4%
	Other Evaluated Routes	9.9	100.0%	-	-	-	-	-	-
Sweetwater Reef A (185.4 miles; 15.7% of evaluated route miles)	OHV-Open	3.5	1.9%	0.6	0.3%	60.1	32.4%	83.7	45.2%
	OHV-Limited	0.0	0.0%	0.0	0.0%	15.5	8.4%	15.9	8.6%
	OHV-Closed	0.0	0.0%	184.7	99.7%	109.7	59.2%	85.7	46.2%
	Other Evaluated Routes	181.9	98.1%	-	-	-	-	-	-

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Unit 005 (26.4 miles; 2.2% of evaluated route miles)	OHV-Open	0.6	2.2%	0.1	0.5%	6.9	25.9%	13.2	50.0%
	OHV-Limited	0.0	0.0%	0.0	0.0%	2.4	9.1%	6.7	25.2%
	OHV-Closed	0.0	0.0%	26.3	99.5%	17.2	64.9%	6.5	24.8%
	Other Evaluated Routes	25.8	97.8%	-	-	-	-	-	-
Unit 006 (20 miles; 1.7% of evaluated route miles)	OHV-Open	1.0	4.9%	0.0	0.0%	8.1	40.5%	9.1	45.5%
	OHV-Limited	0.0	0.0%	0.0	0.0%	4.9	24.7%	3.9	19.7%
	OHV-Closed	0.0	0.0%	20.0	100.0%	7.0	34.9%	7.0	34.9%
	Other Evaluated Routes	19.0	95.1%	-	-	-	-	-	-
Unit 007 (14.7 miles; 1.2% of evaluated route miles)	OHV-Open	0.0	0.3%	0.0	0.3%	4.3	29.2%	5.7	38.5%
	OHV-Limited	0.0	0.0%	0.0	0.0%	4.8	32.6%	4.8	32.6%
	OHV-Closed	0.0	0.0%	14.7	99.7%	5.6	38.2%	4.3	28.9%
	Other Evaluated Routes	14.7	99.7%	-	-	-	-	-	-

APPENDIX M. NUMBER OF ROUTES PROVIDING ACCESS TO SCARCE RECREATION OPPORTUNITIES IN THE TMA

Table M.1: Number of Routes Providing Access to Scarce Recreation Opportunities by Designation and Alternative

(percentages are out of routes providing access to the activities listed in the far-left column)

	Designation	Alt. A		Alt. B		Alt. C		Alt. D	
		Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent
River Rafting/Floating (13 routes; 1.1% of evaluated routes)	OHV-Open	10	76.90%	9	69.20%	13	100.00%	13	100.00%
	OHV-Limited	0	0.00%	0	0.00%	0	0.00%	0	0.00%
	OHV-Closed	0	0.00%	4	30.80%	0	0.00%	0	0.00%
	Other Evaluated Routes	3	23.10%	-	-	-	-	-	-
Hang Gliding (7 routes; 0.6% of evaluated routes)	OHV-Open	3	42.9%	5	71.4%	7	100.0%	7	100.0%
	OHV-Limited	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	OHV-Closed	0	0.0%	2	28.6%	0	0.0%	0	0.0%
	Other Evaluated Routes	4	57.1%	-	-	-	-	-	-
Trail Running (5 routes; 0.4% of evaluated routes)	OHV-Open	2	40.0%	2	40.0%	2	40.0%	2	40.0%
	OHV-Limited	0	0.0%	0	0.0%	3	60.0%	3	60.0%
	OHV-Closed	0	0.0%	3	60.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	3	60.0%	-	-	-	-	-	-
Base Jumping (3 routes; 0.3% of evaluated routes)	OHV-Open	3	100.0%	3	100.0%	3	100.0%	3	100.0%
	OHV-Limited	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	OHV-Closed	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	0	0.0%	-	-	-	-	-	-
Scenic Overflights (2 routes; 0.2% of evaluated routes)	OHV-Open	2	100.0%	2	100.0%	2	100.0%	2	100.0%
	OHV-Limited	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	OHV-Closed	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	0	0.0%	-	-	-	-	-	-
Sledding (2 routes; 0.2% of evaluated routes)	OHV-Open	0	0.0%	0	0.0%	1	50.0%	2	100.0%
	OHV-Limited	0	0.0%	0	0.0%	1	50.0%	0	0.0%
	OHV-Closed	0	0.0%	2	100.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	2	100.0%	-	-	-	-	-	-
Rock Crawling (2 routes; 0.2% of evaluated routes)	OHV-Open	2	100.0%	2	100.0%	2	100.0%	2	100.0%
	OHV-Limited	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	OHV-Closed	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	0	0.0%	-	-	-	-	-	-
Spiritual Visitation (2 routes; 0.2% of evaluated routes)	OHV-Open	2	100.0%	2	100.0%	2	100.0%	2	100.0%
	OHV-Limited	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	OHV-Closed	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	0	0.0%	-	-	-	-	-	-

		Alt. A		Alt. B		Alt. C		Alt. D	
Designation		Routes	Percent	Routes	Percent	Routes	Percent	Routes	Percent
Swimming (1 routes; 0.1% of evaluated routes)	OHV-Open	1	100.0%	0	0.0%	1	100.0%	1	100.0%
	OHV-Limited	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	OHV-Closed	0	0.0%	1	100.0%	0	0.0%	0	0.0%
	Other Evaluated Routes	0	0.0%	-	-	-	-	-	-
Hill Climbing (1 routes; 0.1% of evaluated routes)	OHV-Open	0	0.00%	0	0.00%	0	0.00%	0	0.00%
	OHV-Limited	0	0.00%	0	0.00%	1	100.00%	1	100.00%
	OHV-Closed	0	0.00%	1	100.00%	0	0.00%	0	0.00%
	Other Evaluated Routes	1	100.00%	-	-	-	-	-	-

APPENDIX N. ROUTE REPORTS

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

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

The full collection of route reports is available on the BLM's [ePlanning site](#). Route reports provide a record of the BLM Identification Team (IDT) evaluation of each route identified during the route inventory. The header of each page of a route report displays the number that was used to identify the route during evaluation (e.g., SD240). The number placed on published maps and used on route signs may not be the same. Each route report includes three sections: "General Background," "Evaluation Information," and "Designation Alternatives."

General Background

The first part of the "General Background" section of a route report shows the route's evaluation session date (e.g., 7/8/2015), the name of the session's contracted facilitator (in this case, a planner working for BLM's contractor), and the BLM resource specialists (biologists, archaeologists, recreation planners, etc.) responsible for evaluation of the route. The second part of the "General Background" section provides physical information about the route such as length, width, use, jurisdictions over which it passes, and origin (if known). Other information may also be included along with citizen comments and proposals, as applicable. In the "Citizen Comments and Proposals" subsection, "Author" refers to the citizen who made a proposal, and "Designation" refers to what designation a citizen proposed. If there are no citizen comments or proposals, "None" will be included in the subsection to apply to all headings in it.

Facilitator(s): Dennis Gale **Modified Date:** 10/22/2019 **Initial Evaluation Date:** 7/8/2015
Modified Reason: Route updated to replace 2015 resource data with 2019 resource data provided by BLM specialists during TMP/EA process.

Evaluators: **Connie Leschin**, Realty Specialist **Joshua Winkler**, Outdoor Recreation Planner
Jaydon Mead, Recreation Technician **Jared Reese**, Natural Resource Specialist
Matt Blocker, Outdoor Recreation Planner **Michael Wolfe**, Cultural Resources
Jeffrey Brower, Hydrologist **Michael Leschin**, Geologist

TMA: San Rafael Desert TMA
Management Zones: San Rafael Desert (Entire)
Length: 2.26 miles **Width:** Graded Track **Class:** Roads **Use Level:** Low
Route Types Spur
Surface & Maint. Bladed
Origin
Jurisdictions: BLM

Additional Information None.

Citizen Comments and Proposals

Author	Designation	Comment or Proposal
None.		

General Evaluation Questions

Does this route: <input type="checkbox"/> either wholly or in part, have a right-of-way grant or is it simply an officially-recognized route with a record of management by another government agency? <input checked="" type="checkbox"/> provide commercial, private property, or administrative access (e.g. via permit, ingress/egress rights or management responsibility)? <input type="checkbox"/> provide a principal means of connectivity within a Travel Management Area or sub-region? <input type="checkbox"/> exist as part of an officially recognized part of an Agency planning document and is subject to maintenance? <input type="checkbox"/> provide an important linkage between Travel Management Areas or planning sub-regions?	YES
Does this route contribute to recreational opportunities, route network connectivity, public safety, reduction of conflicts between recreation users and/or such users and urban interface areas, or other public multi-use access opportunities enumerated in agency Organic laws?	YES
Might the continued use of this route potentially impact <input checked="" type="checkbox"/> State or Federal special status species or their habitat? <input checked="" type="checkbox"/> cultural or any other specially-protected resources or objects identified by Agency planning documents, plan amendments? <input checked="" type="checkbox"/> any special area designations (e.g. National Monuments) <input checked="" type="checkbox"/> any other resources of concern	YES
Can the anticipated potential impacts to the identified resources be avoided, minimized (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(s) that minimizes impacts to the resources identified as part of this evaluation or that minimizes 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 CAPE (yellow), public uses (blue), and special resource concerns (green).

CAPE

The first part of the “Evaluation Information” section focuses on CAPE issues. “CAPE” is an acronym that represents the umbrella topic of commercial, administrative, and property owner access—and economics. In the CAPE section, the general issue questions for CAPE are answered, and 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					
Route Management Objective(s) identify the purpose and need of the route:					
This route provides important access to the following facilities and/or jurisdictions shown below for the purpose of carrying out administrative and/or authorized operations or for property access where applicable.					
Facilities & Access	Specifically	Primary	Alternate	Link	Memo
Range Facilities	Active Allotment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<small>(<i>'Primary access'</i> is the main route into a jurisdiction or facility. <i>'Alternate access'</i>, while leading directly to a jurisdiction or facility, it is not the main access and therefore may not be as important as a primary. <i>'Link access'</i> does not lead directly to a jurisdiction or facility, but would be required to access a primary access.)</small>					

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 CAPE, 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
- Infreq = Infrequent (uncommon modes or activities)

Public Uses					
Route Management Objective(s) identify the purpose and need of the route:					
This route provides public access by the following travel modes to the following facilities for the purposes of engaging in the listed recreation activities.					
Facilities	Description	Primary	Alternate	Link	Memo
None					
Travel Modes	Description	Primary	Secondary	Infreq	
Modes of Transportation	Stock 4 Wheel Drive	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Modes of Transportation	UTV	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Modes of Transportation	ATV	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Modes of Transportation	Motorcycle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Modes of Transportation	By Horse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Modes of Transportation	By Foot	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Activities					
Public Uses Activities	Backpacking	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Camping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Equestrian	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Hiking	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Hunting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Geocaching	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Photography	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Sledding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Vehicle Exploring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Uses Activities	Wildlife Watching	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>('Primary uses' are the main uses by the public on this route. 'Secondary uses', while common, are not the main uses on this route. 'Infrequent uses' are uses that are rare on this route, but have been observed.)</i>					

Special Resource Concerns

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

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

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

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

Special Resource Concerns

Resources Evaluated:

This route is in, leads to, crosses or is proximate to the natural and/or cultural resources and resource concerns listed below.

Resource/Concern	Specifically	In	Leads To	Crosses	Prox	Dist	Memo
Biome	3066 - Inter-Mountain Basins Mat Saltbush Shrubland	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Biome	3081 - Inter-Mountain Basins Mixed Salt Desert Scrub	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Biome	3093 - Southern Colorado Plateau Sand Shrubland	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Biome	3210 - Coleogyne ramosissima Shrubland Alliance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Biome	3294 - Barren	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Animals	White-tailed prairie dog (S) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1/4 miles	
Special Status Animals	Burrowing owl (S) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Animals	Ferruginous hawk (S) habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Special Status Animals	Fringed myotis (S) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Animals	Great Plains toad (S) predicted habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Special Status Animals	Kit fox (S) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Animals	Spotted bat (S) habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Special Status Plants	Flat-top buckwheat (S) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Plants	Jones cycladenia (T) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Plants	Psoralea globemallow (S) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Plants	Trotter's alpineparsley (S) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Plants	Paria spurge (S) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special Status Plants	Wright fishhook cactus (E) habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Managed Species	Pronghorn habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Managed Species	Pronghorn crucial habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
VRM	VRM Class III - Partially Retain existing char.	<input checked="" type="checkbox"/>					
RSC	Middle Country (Semi-Primitive, Motorized)	<input checked="" type="checkbox"/>					
Misc. Resources	Erosive soil - High potential / saline soils	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Resource Issues	Invasive vegetation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Note: Specific sensitive resources, such as cultural or paleontological resources or Threatened or Endangered Species that may potentially be affected by this route are not listed in this report for their protection. These resources will be analyzed in the NEPA process included in the planning process of route designation.

Designation Alternatives

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

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

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

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

Potential Alternative Route Designations

Alternative A

Current Management, No Action Alternative

Area Designation: Limited

Route Management: Undesignated

Alternative B

Comprehensive Designation: CLOSED

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

OHV Public: Designation per 43 CFR § 8342.1: Closed

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 eliminate public motorized use, thus reducing the potential for harassment of wildlife. Closing this route would not affect the recreational opportunities in the area. Closing the route would reduce the potential for impacts to endangered or threatened species and their 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 species.

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

Comprehensive Designation: LIMITED	Comprehensive Designation Type: Limited to Trans Type.
Specific designations by user type:	
Administrative/Official Users:	All Federal, State and Local agencies may use this route by all motorized modes, year-round.
Authorized/Permitted Users:	Currently authorized users may use this route by all motorized modes, year-round. <i>Additional special users may be approved through future authorizations.</i>
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:	
<ul style="list-style-type: none">• 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: Limiting motorized access reduces traffic volume in the area thus reducing the potential for harassment of wildlife.	
Designation Criteria Addressed but Not Relevant to Route Issues (no known conflicts among users or no known resource concerns to minimize for):	
<ul style="list-style-type: none">• 43 CFR § 8342.1 (c)• 43 CFR § 8342.1 (d)	

Alternative D

Comprehensive Designation: OPEN

Specific designations by user type:

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

Authorized/Permitted Users: Currently authorized users may use this route by all motorized modes, year-round.
Additional special users may be approved 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: 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.

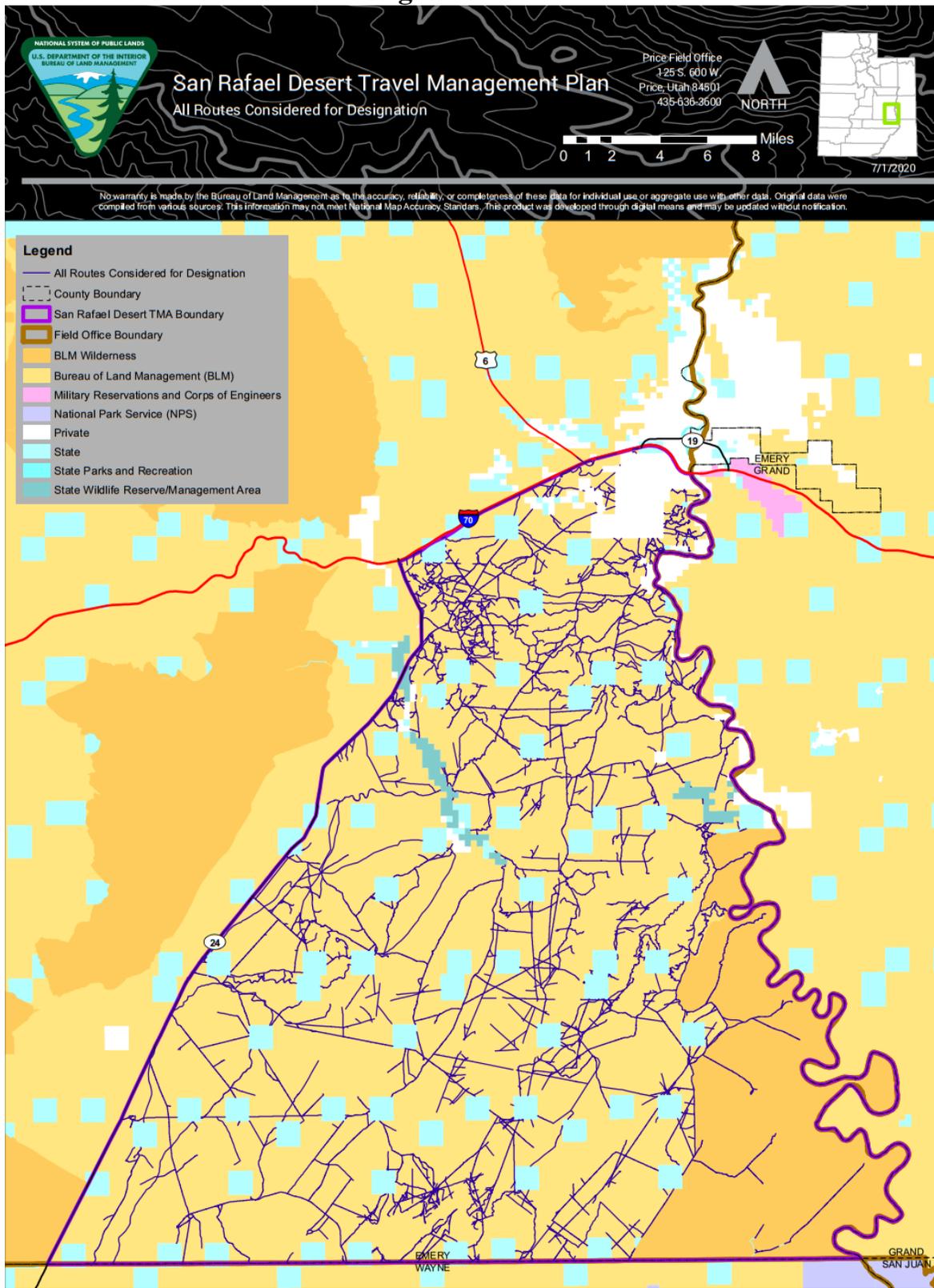
How Designation Addresses Criteria Above: The low traffic volume and speed on this route would have minimal impacts on soils, vegetation and wildlife habitat. This route provides recreational opportunities and commercial/administrative access with minimal effects to documented resources. Allowing continued 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. Per IM No. UT 2012-066, all routes with an acknowledged or documented purpose and need should be proposed for an open designation under at least one alternative. This includes all Class D Roads recognized by the State of Utah and submitted by local counties.

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

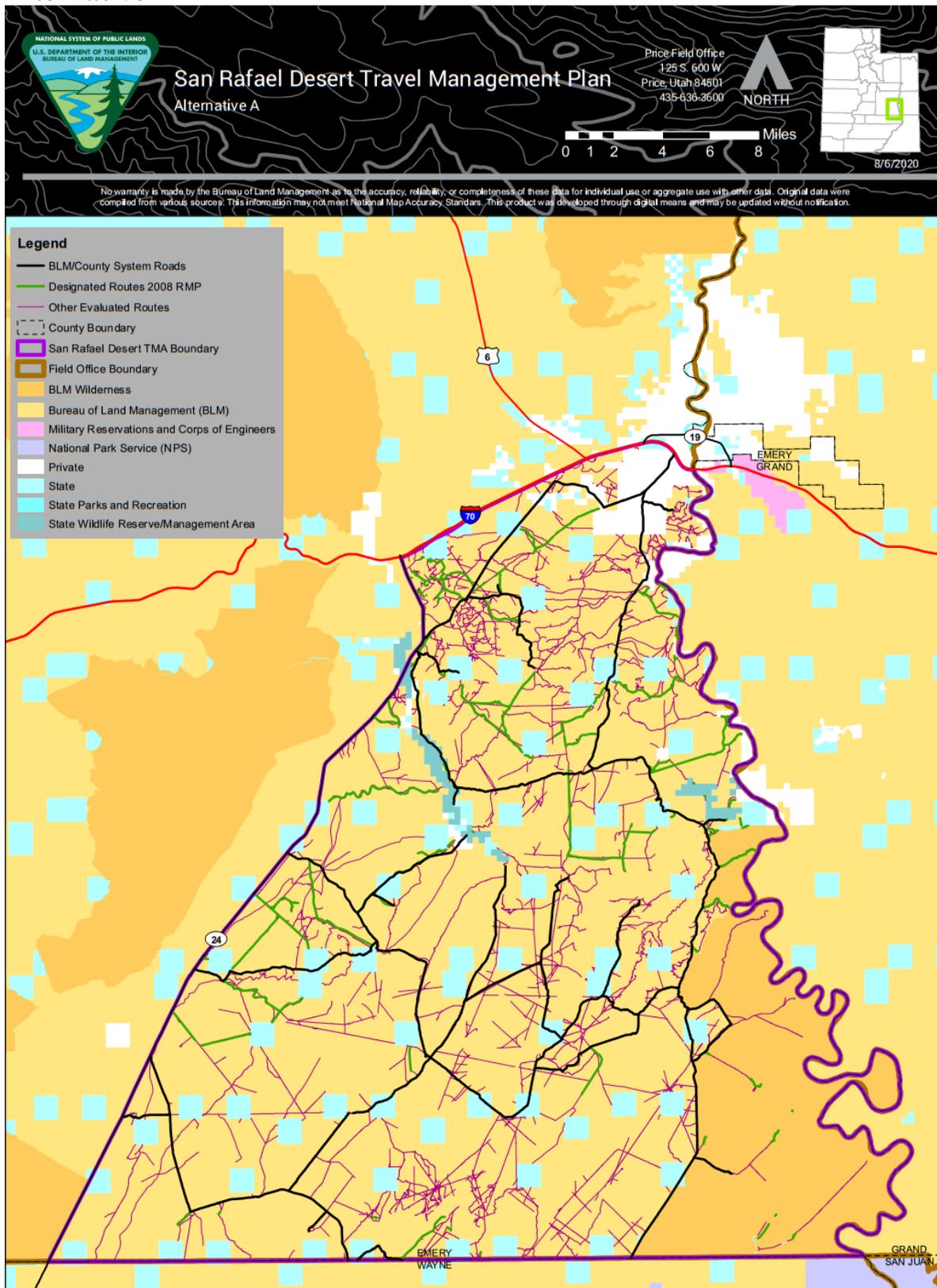
- 43 CFR § 8342.1 (c)
- 43 CFR § 8342.1 (d)

APPENDIX O. ALTERNATIVE ROUTE NETWORK MAPS
(see following pages)

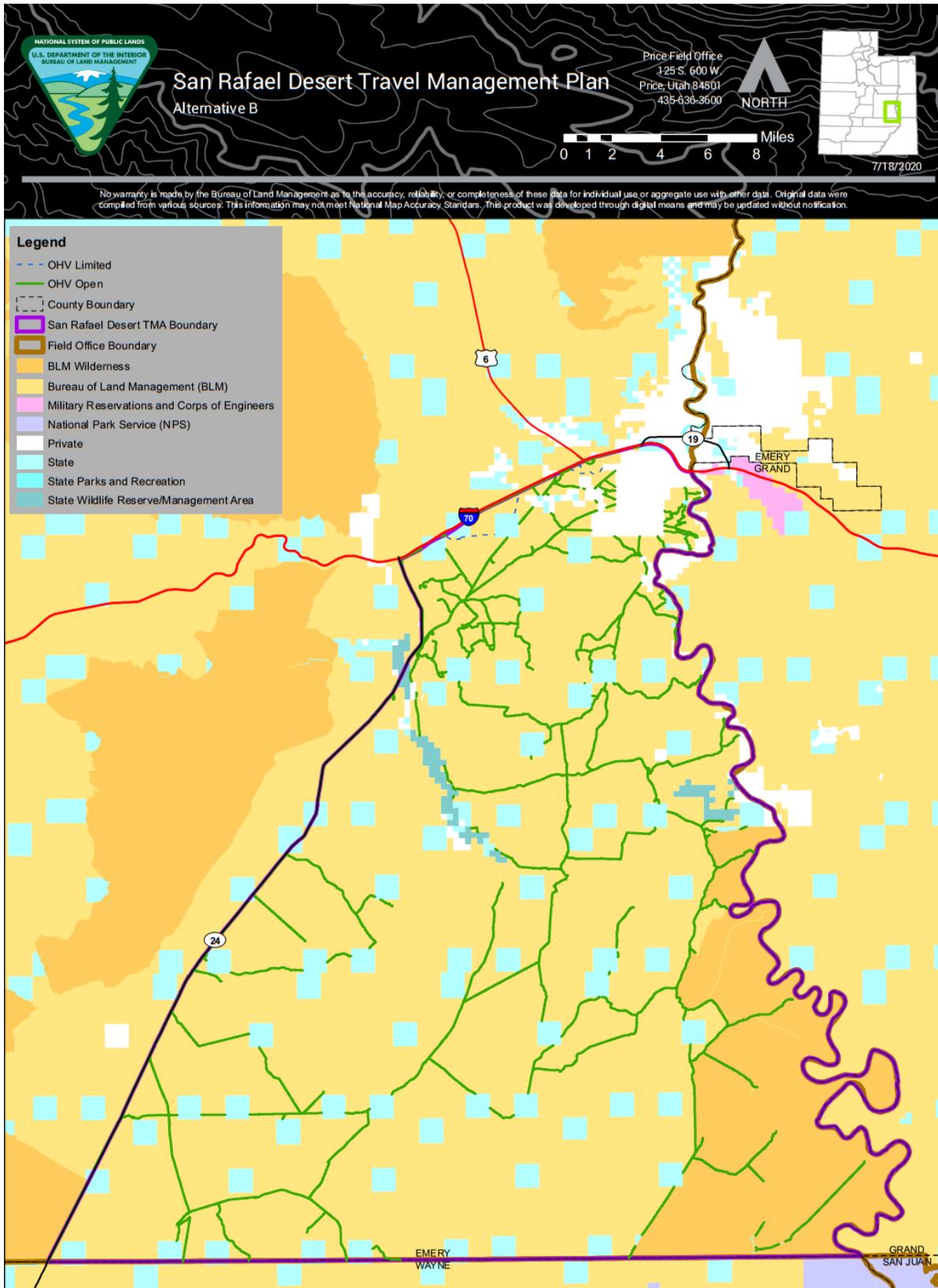
All Routes Considered for Designation



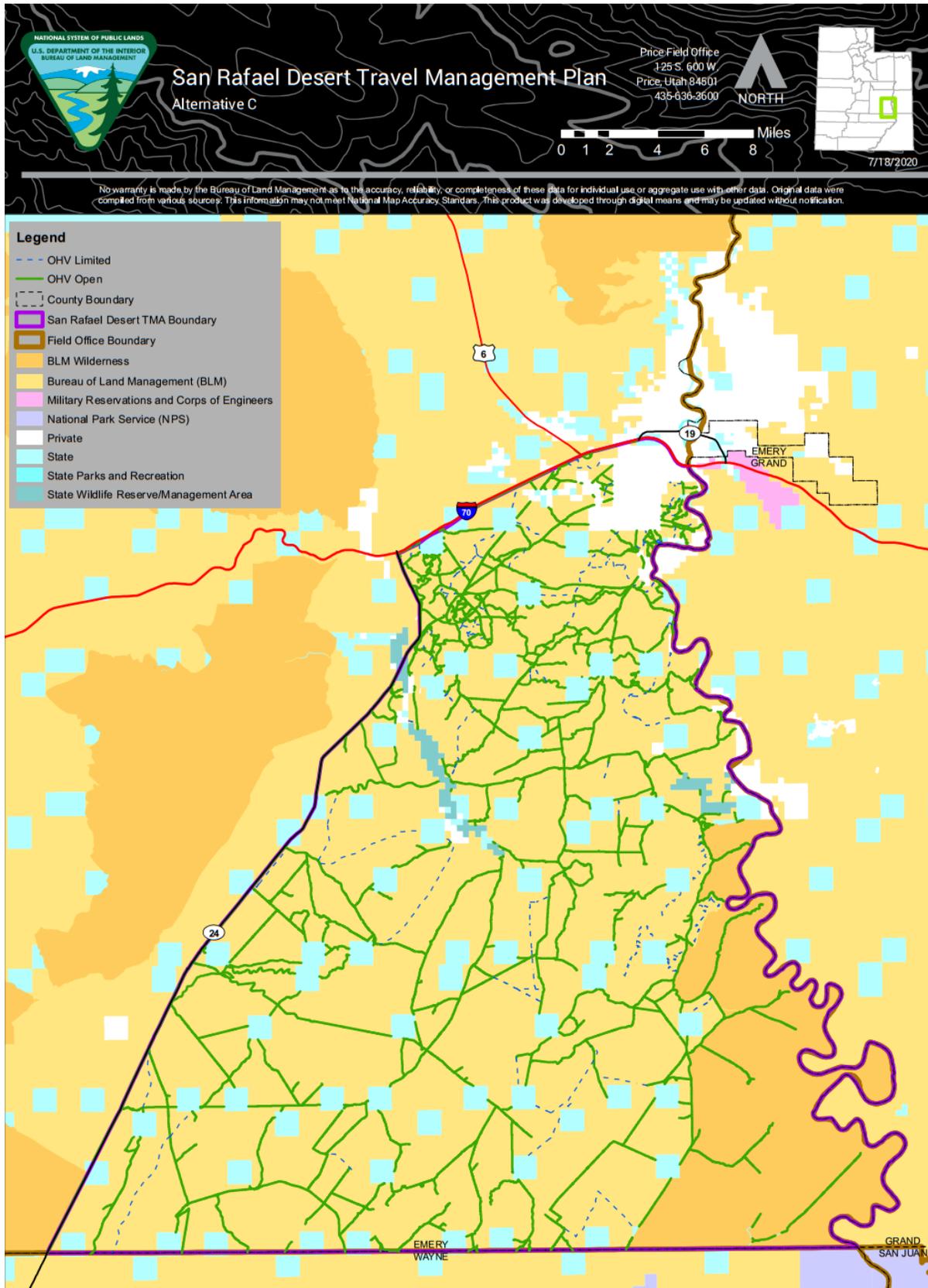
Alternative A



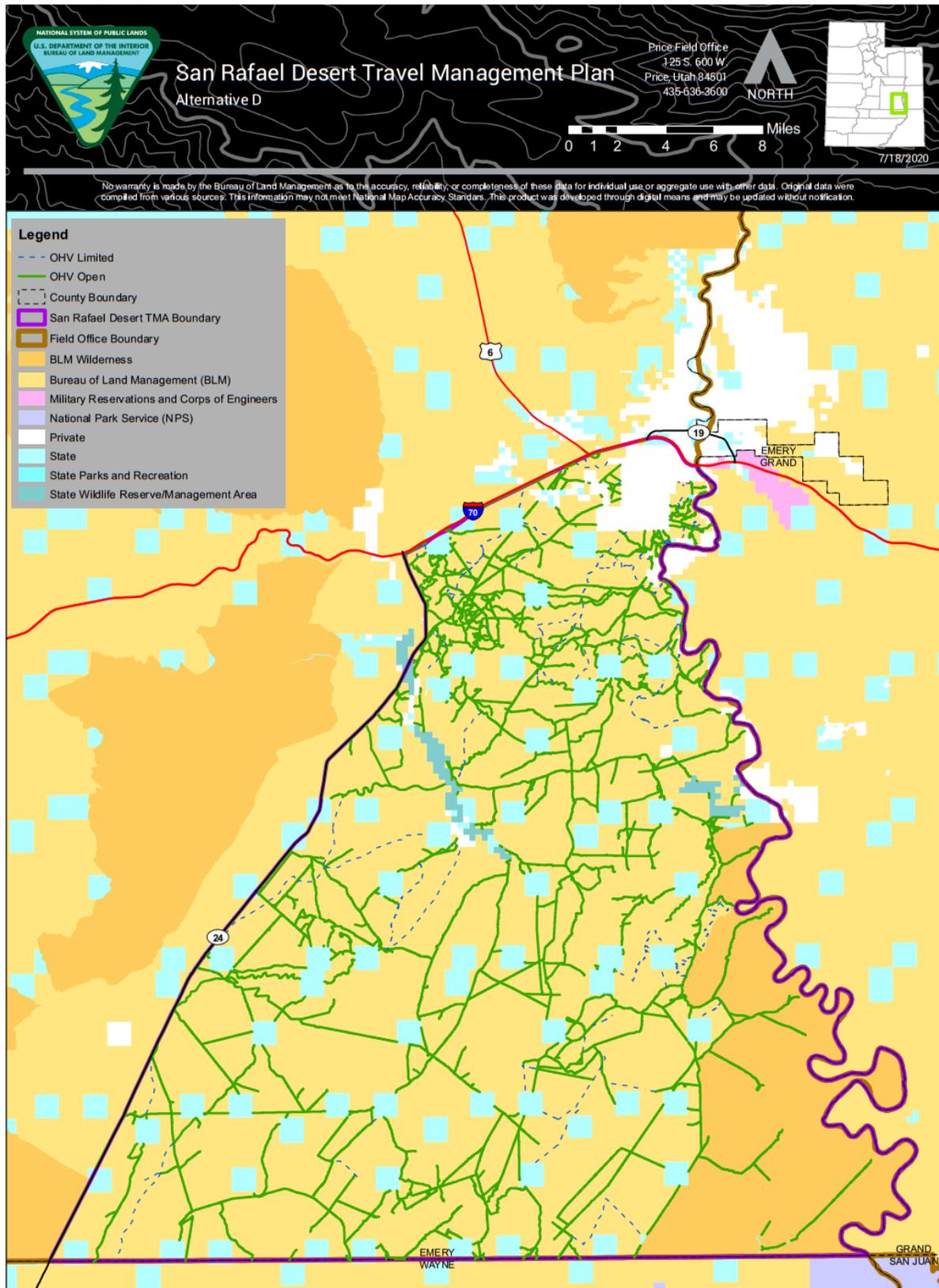
Alternative B



Alternative C



Alternative D



APPENDIX P. PUBLIC COMMENTS AND BLM RESPONSES

Public comments were sought on the preliminary Environmental Analysis (Draft EA). A 30-day public comment period commenced with a press release on December 13, 2019 and ended on January 13, 2020. The Draft EA and supporting documents and data were available for digital download on the BLM's ePlanning platform. Comments were accepted through the project website (the BLM's ePlanning platform), email, fax, and postal mail. A total of 185 comment letters were received from individuals, businesses, government agencies, and other organizations. All comment letters received are retained in the project's decision file.

The BLM read and considered each comment letter submitted on the Draft EA, and identified potentially substantive comments from the letters that would prompt the BLM to revisit the analysis, assumptions, accuracy, and other information contained in the Draft EA. This subset of comments was then sorted into categories (route evaluation comments, cultural resource comments, and other resource concerns) and individually reviewed as either substantive or non-substantive.

Non-substantive Comments

Non-substantive comments are those that express an opinion; raise issues that are beyond the scope of, or are irrelevant to, the current project; or take the form of vague, open-ended questions. The BLM reviewed, noted, and recorded non-substantive comments but did not develop a response, nor include those comments in summary responses or the summary table. Non-substantive comments on the Draft EA included:

- Public Interest. The BLM received expressions of general public interest in the proposed alternatives for the San Rafael Desert TMP. These comments offered rationale including community economic concerns, matters of natural resource conservation, impacts to general recreation and access, and personal opinion on how alternatives may affect individuals' recreation outcomes.

Public interest comments are beyond the scope of this analysis because a public interest determination is not an element of NEPA analysis. While these comments are non-substantive, the BLM does understand that land management decisions are profoundly important to the communities and personal livelihoods and values of its multiple use stakeholders. Public interest, and how it is considered in selecting an alternative, is discussed in the Decision Record (DR).

- Legal Rationale. The BLM received comments containing extensive legal argument or legal citations that are not germane to the scope of the alternatives, or the accuracy of analysis as presented in the Draft EA. The BLM has acknowledged the regulations, policies, and legal authorities that have structured this NEPA analysis in Chapter 1. However, the EA is not the appropriate venue to discuss the competing legal interpretations of applicable policy and law offered by commenters.
- Critique of Agency Findings and Assumptions. The BLM received comments that critiqued its methodologies, assumptions underpinning its analysis, and conclusions.

Comments that offered these critiques without detailing specific inaccuracies, providing useful data, or citing credible reports or studies were deemed non-substantive. The BLM's resource specialists have endeavored to provide accurate analysis throughout the EA based on their expertise and experience managing resources within the San Rafael Desert. The BLM does consider contributions from the public in revising its analysis (see tables below). However, comments were deemed to be opinion and non-substantive were not individually addressed.

- Alternatives that do not conform to the Purpose and Need, 2008 RMP, or the 43 CFR § 8342.1 Designation Criteria. The BLM received comments that proposed adjustments to the action alternatives to allow for construction of new routes, designation of open OHV areas, or designations to routes that would not be based on evaluation criteria. As these suggested revisions would not meet the purpose and need for the project (see Section 1.3), conform to the 2008 RMP (see Section 1.5, Table 1.2), or conform to Designation Criteria (see Section 1.5, Table 1.3) the comments were deemed non-substantive. The BLM notes in Section 1.2.1 that new routes would be considered on a route-by-route basis and subject to further NEPA review.
- Scope of Analysis. The San Rafael Desert TMP EA examines a range of alternatives that propose OHV designations on evaluated routes within the San Rafael Desert TMA. The BLM received comments that offered suggestions beyond the scope of this environmental analysis, which are considered non-substantive. These comments include urging revisions to administrative procedures in route management, contemplating the BLM's funding to support enforcement of proposed route networks, suggesting route evaluations were incorrect or incomplete without providing specificity, and suggesting the BLM explore other issues that would not inform the decision to be made (see Section 1.2).

Many of these comments express genuine concern about how BLM management might respond to emerging concerns from the public as the TMP is implemented. While these comments are outside of the scope of analysis, the BLM will continue to work with stakeholders throughout implementation of the TMP to address concerns as they arise.

Substantive Comments

Substantive public comments formed the basis for much of the revision that occurred between release of the Draft EA and the Final EA. In general, substantive comments do one or more of the following:

- Question, with reasonable basis, the accuracy of information in the EA.
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis.
- Present new information relevant to the analysis.
- Present reasonable alternatives other than those analyzed in the EA.
- Present issues for analysis other than those analyzed in the EA.
- Cause changes or revisions in one or more of the alternatives.

As substantive comments were identified, they were organized into groups that were useful to the editing and revision process. Some substantive comments were made multiple times in one

letter or were made in multiple letters by multiple commenters. These comments were grouped together and are addressed in the summary responses below. Other comments that resulted in changes to the text are addressed in the following tables.

Summary Responses to Substantive Comments

Air Quality Issues

Several comments urged the BLM to consider how the alternatives would impact air quality. Specific concerns included how fugitive dust and vehicle emissions would impact natural resources and visitor experiences. The BLM has considered dust as an effect on natural resources throughout Chapter 3, as applicable. The BLM's rationale for not analyzing impacts from vehicle emissions is stated in Appendix E: Interdisciplinary Checklist and is based on the assumption in Section 3.1.3 that OHV traffic will continue to increase in the TMA regardless of alternative, and independent of any selected alternative. All action alternatives implement travel management minimization criteria, and none of the alternatives is expected to create impacts (direct/indirect/cumulative) from vehicle use beyond those of the baseline (Alternative A/Current Conditions).

Emery County is designated by the State and EPA as in attainment, or all criteria air pollutants are below the NAAQS. Air quality index information provided in the BLM 2018 Air Monitoring Report shows that there were only two days with unhealthy air in neighboring Carbon County and this was primarily due to NO₂ and Ozone and not particulate matter. The primary source of NO_x and ozone forming pollutants come from point sources (Hunter and Huntington Power Plants) in Emery County and not off-road vehicles. The Utah Division of Air Quality recently performed a PM_{2.5} model attainment study. While this study mainly addressed PM_{2.5} issues in the Wasatch Front nonattainment areas the modeling domain covered the entire state and included fugitive dust emissions from unpaved routes. This study also projected future years 2025 and 2035 emissions due to changes in population growth and vehicle miles traveled. The results of the modeling analysis show that all areas in Utah, including the Emery County and the project area, have PM_{2.5} concentrations below the NAAQS in future years 2025 and 2035. Therefore, none of the alternatives would result in a measurable change to concentrations of air quality pollutants, and the UDAQ modeling analysis shows that there are no cumulative adverse impacts.

In addition, none of the alternatives propose creating new routes that would create new air quality impacts. As a result, calculating an emissions inventory will not help make a reasoned choice between alternatives (BLM Handbook H1790-1 section 6.4.1) and will not concentrate on the issues that are truly significant to the action in question (40 CFR 1500.1(b)).

Dust and Noise Pollution

The BLM received comments regarding the inclusion of dust and noise pollution as effects of OHV travel. Dust and noise, as impact causing elements, are analyzed as appropriate for affected resources. For examples, see Section 3.2.2.2 for a discussion of dust on snow, Section 3.2.6.2 for a discussion of dust on special status flora, Section

3.2.7.2 for a discussion of OHV-related noise impacts on wildlife, and 3.3.1.2 for a discussion of OHV-related noise impacts on other recreationists. Other air quality concerns have been addressed, as noted above.

Climate Change and Greenhouse Gases

The BLM received comments stating that its rationale for not analyzing climate change and greenhouse gas emissions was unclear and insufficient. The BLM's rationale for not analyzing impacts to climate change from greenhouse gas emissions is stated in Appendix E: Interdisciplinary Checklist and is based on the assumption in Section 3.1.3 that OHV traffic will continue to increase in the TMA regardless of alternative, and independent of any selected alternative. All action alternatives implement travel management minimization criteria, and none of the alternatives are expected to create impacts (direct/indirect/cumulative) from vehicle use beyond those of the baseline (Alternative A/Current Conditions). In addition, none of the alternatives propose creating new routes that would directly or indirectly promote new greenhouse gas emissions or climate change impacts. As a result, calculating a GHG emissions inventory will not help make a reasoned choice between alternatives (BLM Handbook H1790-1 section 6.4.1) and will not concentrate on the issues that are truly significant to the action in question (40 CFR 1500.1(b)).

Minimization (Designation) Criteria

The BLM received comments that questioned the rigor of its application of the Designation Criteria (43 CFR Section 8342.1—sometimes called the minimization criteria) to individual routes and proposed alternatives (as whole networks). These comments included speculation on legal sufficiency, calls for revision and clarity, and challenges to assumptions used by the BLM in applying the Designation Criteria to routes and alternatives. The BLM's process for applying Designation Criteria to individual routes is explained in the EA in Section 2.1.3 and documented in the Route Reports (see Appendix N). The BLM's process for applying Designation Criteria to alternatives is explained in the EA in Section 3.1.1 and is documented in Sections 3.2 and 3.3 of the EA. The minimization criteria were applied by identifying the sensitive resources on or near the route, looking at the 2008 RMP goals and objectives for each resource, and then considering the best ways to minimize impacts to the resources to meet the goals and objectives.

Further discussion of minimization criteria considerations is presented in the Decision Record (DR).

Pollinators

The BLM received comments urging analysis of impacts to pollinators. The EA has been revised to include this analysis. See Section 3.2.6.

Access to Lands not Managed by BLM

The BLM received comments concerning its responsibility to ensure access to lands owned or managed by other federal, state, or local agencies, or private individuals. During route evaluations, the BLM ensured that its responsibility to provide reasonable

access consistent with the Federal Land Policy and Management Act and the *Utah v. Andrus*, 486 F. Supp. 995 (1979) decision was considered as part of route evaluation criteria. The route reports note when an evaluated route provides primary or secondary access to lands with other ownership.

Access to Land Authorizations on BLM-managed Public Lands

Several comments suggested that one or more of the BLM's alternatives were not sufficient in meeting its responsibility to provide access to land use authorizations including grazing pastures, mining claims, rights-of-way, and Special Recreation Permits. As described in Section 1.2.1 the TMP decisions will not affect any official, authorized, permitted, military, law enforcement, or emergency access.

Environmental Baselines

The BLM received comments that questioned the accuracy of the route inventory, or proposed one or more environmental baselines to which action alternatives could be compared. Based on comments received, the BLM re-evaluated numerous routes and adjusted the route evaluations and alternative route networks accordingly (see table below). The BLM's route inventory and evaluation process is described in Section X.X, and the environmental baseline is described in Section 2.3, and analyzed in Chapter 3.

Proposed Alternatives

The BLM received comments that proposed variants of the action alternatives or new action alternatives. Alternatives from the comment letters were added into the subsections of Section 2.8.

Cumulative Impacts

The BLM received comments suggesting that the cumulative impact analyses in the Draft EA were incomplete, inconsistent with other analyses in the EA, or otherwise lacking detail as to be useful in making an informed decision. In light of these comments, as well as other clarifications and edits within the EA, the BLM re-evaluated all cumulative impact analyses throughout Chapter 3, and updated these sections for completeness and clarity.

Speculative Impacts: Visitation

The BLM received comments urging analysis of anticipated increases in visitation, either within the TMA broadly, or on specific routes. The BLM acknowledged the likelihood that OHV use will generally increase in the future in Section 3.1.3. The trend of increasing OHV usage, broadly, is expected regardless of alternative and therefore unrelated to decisions to be made in this document. Furthermore, it is unreasonable to speculate that any route designation or alternative route network would specifically encourage increased usage because all alternatives deal with designating OHV use on existing routes. The BLM is not promoting OHV use in any alternative, nor proposing to develop any new routes or OHV-specific facilities.

Table P.1: Comments Prompting Route Re-Evaluations

Route #	Comment #	Public Comment	BLM Response
Area south of I-70 near exit 131 (“purple” trail)	178-4	Consider this route.	This route is outside the planning area and was not evaluated or designated for this TMP.
Horseshoe Canyon, Barrier Canyon	176-4	“The route out of Green River to Horseshoe Canyon (Barrier Canyon) is a main route and needs to open for more than just OHV users. It is a long loop that eventually connects back to Highway 24.”	This route is in the wilderness area, and therefore not considered in the TMP.
SD052	134-66	This route is out of use as evidenced by the grasses and mature shrubs that grown throughout its former roadbed. BLM should designate SD052 as closed to motorized vehicles.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of this route confirmed that it is visible both on google earth and on the ground.
SD055	134-65	SD055 is a cattle and wildlife path, not a motorized use route. This route barely exists for most of its length. Route is a dead- end and not a connector route. Route should be closed to motorized vehicles.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of this route confirmed that while it may have been previously used by the public, it is naturally reclaiming.
SD083	128-39, 86-4, 145-16	Opening this route in alts C and D creates user conflict. I am encouraged to see routes remain open in the Dry Land area, Cottonwood Wash area and the Iron Wash areas. In this area we've had a chance to do wash-riding which is ALWAYS fun.	Based upon information in this comment, the BLM re-evaluated the route in question. The BLM intends to close this route in the Decision Record, and the inventory database will be updated. Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD119	134-57	This route does not exist on the ground, likely never existed as a travel-related feature, does not qualify as a transportation linear feature.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD172	128-25	This route is reclaiming.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.

Route #	Comment #	Public Comment	BLM Response
SD173	128-25	This route is reclaiming. (See comment 172 for details)	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD222	128-25	This route is reclaiming. (See comment 172 for details)	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that while it may have been previously used by the public, it is naturally reclaiming.
SD224	128-25	This route is reclaiming.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD226	128-25	This route is reclaiming.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD227	128-25	This route is reclaiming.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD228	128-25	This route is reclaiming.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD229	128-25	This route is reclaiming.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD230	128-25	This route is reclaiming.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.

Route #	Comment #	Public Comment	BLM Response
SD233	148-14	This route should be designated as open in Alts. C and D to provide access to route 232 to state trust lands.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that there is possible access to the state trust parcel via route SD210.
SD238	128-25	This route is reclaiming. See route 172 comment for details.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD255	128-25	This route is reclaiming. See route 172 comment for details.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD308	134-64	This route is completely invisible on the ground for most of its length and should be closed to motorized vehicles.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it exists and is being used.
SD344	134-68	SD344 is not a route. at its intersection with the Green River Road the route is bermed and clearly sees no use. BLM should delete this route from the route inventory and close it to future motorized use.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that while there is evidence of the route existing on the ground it is only lightly used.
SD350	134-58	This route is largely reclaimed (brush and cacti are visible in the tracks), and shows no signs of any use, and should be closed to motorized vehicles.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is only lightly used. It is also redundant to SD345.
SD415	134-60, 63-3	This is a route that is visible from satellite or aerial imagery, but which is almost completely invisible on the ground. SD415 should be deleted from the route inventory entirely as it completely reclaimed and out of use.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.

Route #	Comment #	Public Comment	BLM Response
SD417	134-61	Same as comment SD415.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD421	144-6, 176-9	This route is cherry stem and should be all open. Is this accessible?	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that the entire route is a cherry-stemmed route and a Wilderness boundary road.
SD431		This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD442	144-5	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD447	144-5	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD464a	144-5	This route is cherry stem and should be all open. Is the overlook in the wilderness area (5-hole arch)? Is it no longer accessible?	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem up to a point, and then it extends into the wilderness.

Route #	Comment #	Public Comment	BLM Response
SD481	144-5	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD494	30-11, 164-2, 117-9, 7-18, 115-2, 101-4	Open to state trust land section. Extend past slick rock crossing to SITLA and Keg Springs The full length of the road should remain open for all kinds of motorized use.	Route SD494 is cherry stem out of the wilderness. Route 497 goes from the end of 494 to the state section. 497 cannot be opened because it is within the wilderness area and not cherry stem. The BLM is required to adhere to Congress's mandate (Dingell Act), which is not part of this TMP. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD553	144-6	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD557	144-5	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD559	144-5	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.

Route #	Comment #	Public Comment	BLM Response
SD575	144-5	This route is cherry stem and should be all open. Is the 10-mile canyon overlook in the wilderness area? Is it no longer accessible?	Re-evaluation of the route confirmed that this is a cherry stem route to the parking area/turnaround. Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD586	144-5	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD592a	144-5	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD598	134-55	This route is entirely redundant with existing routes nearby. BLM should designate SD598 as closed to motorized vehicles to conform with TRV-4 of the Price RMP.	Re-evaluation of the route confirmed that this route is cherry stem and is part of a large Y intersection. Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.

Route #	Comment #	Public Comment	BLM Response
SD604, SD605a (Junes Bottom)	87-3, 170-1, 128-11 36-4, 55-4, 128-39, 145-16, 95-3, 107-1	<p>Opening this route is a poor decision. Opening will cause user conflicts.</p> <p>BLM should not designate June's Bottom as open for motorized use and should keep OHVs away from places that are popular for non-motorized recreation such as wildlife watching, hiking and mountain biking. Among them are...June's Bottom.</p> <p>There is no justifiable reason to open popular non-motorized areas like Moonshine Wash and June's Bottom to motorized use -- a move that is sure to cause user conflicts and degrade soils, air quality, riparian areas, and wildlife habitat.</p> <p>We would like to see it opened back up. We have so many limited routes that allow access to the river.</p> <p>Junes' Bottom is cherry stemmed...</p>	<p>Route SD604: This route was cherry-stemmed by Congressional mandate (Dingell Act). The BLM is required to adhere to Congress's mandate (Dingell Act), which is not part of this TMP. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. The BLM has observed very little hiking and mountain biking despite it being currently designated for mountain bikes. The route is a destination route to access the river and the historic cabin and car.</p> <p>Route SD605a: Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.</p>
SD666	144-6	This route is cherry stem and should be all open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this is a cherry stem route.
SD671	128-48	SD671 is a popular hiking trail leading to a slot canyon. BLM's route evaluation form does not address the potential for conflict between motorized users and hikers.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that this route is a small loop/pullout off route SD670.

Route #	Comment #	Public Comment	BLM Response
SD673	134-74, 63-3	<p>The narrow canyon of the West Fork of Moonshine Wash. This route is a very popular hiking destination, completely impassable to motorized vehicles. SD673 sits at the bottom of a slot canyon; no off-route travel is possible without climbing ropes and anchors. It is not and has never been a motorized route for its entire length. The route should be deleted from the inventory.</p> <p>Clarification on changing either SD673 or SD415 to OHV limited is necessary.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.</p>
SD678 (Moonshine wash)	128-39, 87-3, 106-11, 36-4, 55-4	<p>Opening this route under Alts. C and D would create user conflict.</p> <p>BLM should keep OHVs away from places that are popular for non-motorized recreation such as wildlife watching, hiking and mountain biking. Among them are Moonshine Wash.</p> <p>Opening Moonshine Wash and June's Bottom to motorized use is a good idea.</p> <p>This is a historical use ride. The intentional placing of posts in the river to "create an eddy"... were strategically to destroy the entrance into the canyon/wash for motorized users. We hope that has been corrected.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed potential user conflict and sensitive resources.</p>
SD679a	7-20	<p>This route should remain open for another 0.1 miles to reach the overlook of Trin-Alcove Bend. The overlook has high scenic qualities and provides multiple campsites.</p> <p>SD679 is cherry stem.</p>	<p>Original route SD679 was split by the Dingell Act into SD679a and SD679b, with SD679a outside the wilderness and SD679b (road and parking area) within the wilderness and closed. Since then, we received clarification that Congress did not intend for SD679b to be within wilderness, and so SD679b was also cherry stemmed. These routes have been merged back into one route (SD679). The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.</p>

Route #	Comment #	Public Comment	BLM Response
SD681, SD681a	134-53, 7-19	<p>This route includes a short segment (0.2 miles) at the far eastern end of the Bull Bottoms Road (SD681) in its inventory despite the fact that is now within the Labyrinth Canyon Wilderness.</p> <p>BLM should ensure that no routes within the recently designated Labyrinth Canyon Wilderness are included in the decision space for this TMA.</p> <p>This route should be left open for another 0.2 miles to reach the overlook of Bull Bottom. This particular overlook has high scenic qualities and provides multiple dispersed camping sites.</p> <p>SD681 is cherry stem.</p>	<p>SD681a – cannot be opened because it is within the wilderness area and not cherry stem. The BLM is required to adhere to Congress’s mandate (Dingell Act), which is not part of this TMP. The BLM has removed this route from the network.</p> <p>Route SD681 is the cherry stem. Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.</p>
SD685a, SD685b	144-5	<p>These routes are cherry stem and should be all open.</p>	<p>SD685a Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.</p> <p>SD685b Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.</p> <p>Re-evaluation of this route confirmed it to be in LWC.</p>

Route #	Comment #	Public Comment	BLM Response
SD687a SD687b	134-52	SD687b is mapped as beginning at the county gravel pit just south of the San Rafael River Bridge, however there is no route in this location. No tracks or evidence of any use is visible along its length between the gravel pit and where it is mapped as connecting with SD685a. It is naturally vegetated, and the surface is comprised of loose and sensitive soils. It is redundant with routes that actually exist, such as SD805a and SD687a. SD687a is cherry stem.	SD687a Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. SD687b Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it does not exist on the ground but is the wilderness boundary road and a County D road accessing a gravel pit.
SD698	134-51	does not exist where it drops off the bluff down to the San Rafael River. SD698 is entirely redundant with SD699 should be designated as closed to motorized vehicles for its entire length.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed it is not reclaiming. The route has a purpose (camping etc.) and is not redundant with SD699.
SD714	134-63	completely invisible on the ground-the airstrip to which it once may have led is overgrown and out of use. should designate SD714 as closed to motorized use.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed it to be reclaiming.
SD715	134-62, 134-72	SD717 is the actual end of SD715. 717 does not continue south. Dangerous conditions. should close SD715 south of where it intersects with SD717.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.

Route #	Comment #	Public Comment	BLM Response
SD720	134-73	washed out, impassable, and completely out of use. route cannot be considered a "primary" access route to either the very large allotment in which it is located, nor the state lands parcel at its eastern end. designate the route as closed to motorized vehicles	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is the only access SITLA land.
SD729	128-15	This route does not exist on the ground.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed it does exist.
SD737	128-45	Opening this route will not minimize impacts to LWC.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route found while the portion of the route north of the river exists, a portion south of the river appears to be reclaiming.
SD740	128-43, 128-45	This route is impassible and will not minimize impacts to LWC.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD750	148-14, 128-45	In Alt. C with 752, are the only routes providing access to a SITLA parcel. Opening this route will not minimize impacts to LWC.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.
SD752	148-14, 128-45	Same comments as 750 above.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.

Route #	Comment #	Public Comment	BLM Response
SD762	134-69, 134-70, 128-15	<p>This route is completely invisible except at its furthest ends where it is barely visible. It is covered with healthy cryptobiotic soils for much of its length, and heavy vegetation and/or sand dune habitat for the rest of its length.</p> <p>BLM should close SD762 to motorized vehicles to reflect on-the-ground conditions and to minimize impacts</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.</p>
SD764	128-15	<p>This route does not exist on the ground and is not receiving use. Designating and maintaining this route would require crossing the San Rafael River.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that portions of the route exist on the ground and it is visible to the SITLA parcel on the north side of the river. However, on the south side it is reclaiming.</p>
SD767	134-59	<p>This route should be closed to motorized vehicles or limited to authorized use only to provide occasional access to the small piece of SITLA property at its end.</p> <p>It is clearly out of use, except by cattle and wildlife who have left a clear singletrack path.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is reclaiming.</p>
SD774	134-56	<p>This is a remnant seismic route. However, the far eastern end of this route, where the route makes a 45 degree turn to the south along a spit above the River, BLM has attached a linear feature that is not a part of SD774.</p> <p>SD774 should be split at its eastern end where it angles sharply to the south.</p> <p>The segment of SD774 that travels south ending at a point above an oxbow bend in the River should be closed to motorized vehicles.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it exists, is moderately used, and provides recreation opportunity.</p>

Route #	Comment #	Public Comment	BLM Response
SD807a	134-44	<p>This route tiers off of an old graded route that is largely out of use and reclaiming naturally. it is clearly unmaintained.</p> <p>There is no trailhead or staging area anywhere along this route that is used.</p> <p>The initial 400 yards of this route could be used as a primitive camping area. Beyond the first 400 yards SD807a should be closed to motorized vehicles.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it exists and provides recreation opportunity.</p>
SD808	134-50	<p>SD808 and SD809 should be designated as closed to motorized vehicles to protect resources in and around Dry Lake Wash.</p> <p>The routes lead right into private property they will undoubtedly lead to increased trespass.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that the route is in a drivable wash, is being used, and does not affect sensitive resources.</p>
SD809	134-50	<p>Same as SD808 above.</p> <p>This is merely a wash where no route currently exists.</p>	<p>Based on information in this comment, BLM re-evaluated this route through field visits and aerial photography. BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that the route is in a drivable wash, is being used, and does not affect sensitive resources.</p>

Route #	Comment #	Public Comment	BLM Response
SD810	30-13, 164-6, 7-16, 63-2, 134-48, 149-2, 101-6	<p>This is a loop opportunity in Dry Lake Wash. Change from closed (limited to admin use) to OHV-Limited.</p> <p>The through-going (and Class D) road up Dry Lake Wash (SD810) should remain open to the general public. It is the only way for the nearby motorized singletrack (SD 812) to continue being a continuous route.</p> <p>Currently no route exists in this area at all, except for occasion traces of a singletrack. SD810 is not, a "dual track" width route.</p> <p>There is no route for the vast majority of its mapped length.</p> <p>It should be closed to reflect its on the ground condition.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it exists, is in a wash, is a singletrack, and has minimal effects to sensitive resources.</p>
SD812	134-49 86-4, 163-2, 177-4, 124-3, 115-3, 149-2, 101-7	<p>This route mostly does not exist at all on the ground.</p> <p>BLM maps SD812 as crossing extensive sandstone benches, vertical cliffs above Dry Lake Wash, boulder strewn gullies, and sensitive soils. Because of these massive impediments, no route actually exists in this area.</p> <p>This route should be deleted from the inventory or at least designated as closed.</p> <p>Roads should remain open for all kinds of motorized use in the Dry Lake area.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of this route confirmed it exists and is not reclaiming.</p>
SD819	164-7, 101-8	<p>Alt D misses important segments of routes... The link between Dry Lake Wash (SD810 mentioned above) and its upper end (SD819) is just one example.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.</p>

Route #	Comment #	Public Comment	BLM Response
SD922	128-14, 128-43	Among the many routes that are completely or partially reclaimed, the Class III inventory specifically identified SD922, which BLM would open to all types of motorized vehicle use.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is reclaiming.
SD924	148-14	In Alts. C and D this route provides access from SD876a to a SITLA parcel. Highway 24 may not provide meaningful access, so designate a 0.25 mile segment as open.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is reclaiming/reclaimed.
SD941	??	Added from comment narrative.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it would need construction to be useable.
SD947 Iron Wash	86-4	I am encouraged to see routes remain open in the Dry Lake area, Cottonwood Wash area and the Iron Wash areas.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it crosses under the highway, providing access outside the TMA.
SD948	134-71, 128-15	This is a non-existent route. The route is blocked right at its intersection with Highway 24 which a three-strand barbwire fence with no gate. It is inaccessible by motorized vehicles because of a gateless fence. The route should continue to be closed.	Re-evaluation of this route confirmed no evidence of the route on the ground but a portion was visible in aerial imagery. The route was split into two separate routes. SD948b is visible in aerial imagery, but it is not visible on the ground and will be closed in in the Decision Record. SD948a accesses a fence and SITLA land, and will remain open in .
SD964 (Acerton Mine)	30-12, 163-2, 177-4, 178-3, 101-3	Provides loop opportunity. This route should remain open for all kinds of motorized use.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed it is a County B road.
SD984	164-5, 149-2, 101-5	This route should be open to Acerton Mine. It needs to remain open to public access and not converted to administrative use only.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives.

Route #	Comment #	Public Comment	BLM Response
SD1027	134-42	<p>This route is almost completely reclaimed for much of its length and has no purpose as evidenced by its lack of use.</p> <p>Route should be limited to authorized use only to provide access to the SITLA parcel; beyond the SITLA parcel it should be closed to OHVs.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it has been recently driven and is not reclaiming.</p>
SD1029	134-43	<p>This route does not exist for most of its length. It is impassable in several sections where it is mapped going directly over small cliffs and up boulder-choked drainages.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is in a drivable wash and is being used.</p>
SD1032	134-47	<p>This is a dead-end route into a bend of the Green River, and clearly has not seen any use in years or decades, as much of the route is reclaimed with vegetation and cryptobiotic soils, overgrown and in out of use condition.</p> <p>Leave this route closed to motorized vehicles, allowing it to continue its natural reclamation process.</p> <p>This route should remain open to all classes of OHV as it would be in Alternative D, and not be closed as it would be in Alternative C.</p> <p>The route provides access to an important overlook of the Green River and should not be closed.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed it is not visible on the ground.</p>
SD1033	134-47	<p>Same as first paragraph of SD1032 above.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is the end section of route SD1032.</p>
SD1034	134-46	<p>This route dead ends into private lands on its northern end.</p> <p>The middle portion of SD1034 does not exist at all and should be deleted from the inventory.</p>	<p>Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is reclaiming.</p>

Route #	Comment #	Public Comment	BLM Response
SD1037	134-45	<p>This route is almost completely invisible on the ground.</p> <p>The route does not connect to the Green River Road on its western end.</p> <p>Designate this route as closed to OHVs to reflect its reclaimed and naturalized condition.</p>	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it can be seen on aerial imagery and connects to SD421.
SD1050	134-41	This route does not appear to exist on the ground and should be deleted from the inventory entirely.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed the route is partially boulder rock and follows a drainage.
SD1123	30-14	This route should be open to State Trust Land.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it is reclaiming. Also, there is another access to the SITLA land.
SD1328 (Butterfly Bend)	134-36, 134-38, 101-3	<p>This route does not exist on the ground. South of the SITLA parcel through which it travels, the route is rarely traveled and is only accessed via private land.</p> <p>...there are routes left off of it such as the Butterfly Trail motorized single track southwest of Green River</p>	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it exists on the ground.
SD1340	134-40	Almost the entirety of this route (entire southern and western half of the loop) does not exist on the ground, has never existed as a motorized route and should be removed from the route inventory.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of this route confirmed that it does exist.
SD1341	134-37	<p>This route is only accessed via private land; there is no way to access this route via OHV using exclusively BLM lands.</p> <p>This route turns into the popular Butterfly Bend hiking route.</p>	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of this route confirmed that it can be accessed by BLM connectors (County B road through private land), as well as direct access from BLM lands.

Route #	Comment #	Public Comment	BLM Response
SD1342	134-39	This route does not exist on the ground, has never existed as a motorized route and should be removed from the route inventory.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of the route confirmed that it does exist on the ground.
SD1346a	63-3, 134-75, 128-15, 128-43	<p>Currently SD1346a is shown as an "OHV-Limited" route with no obvious way to access the route. SD415 and SD419 are shown as "OHV-Closed" from south and SD673 is shown on the map as "OHV-Closed" from the north (presumably connecting to SD678). SD673 is listed as "OHV-Limited" in the Route Report. Clarification or changing either SD673 or SD415 to "OHV-Limited" is necessary. Changing both would make a large loop possible using SD421, SD214 and SD209.</p> <p>This route shows no signs of motorized use, is impassible, and no travel-related feature here at all. Route should be removed from this OHV-specific travel planning process.</p>	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation of this route confirmed that it is in Saucer Basin, on slick rock. Because SD415 is closed, there is a lack of connectivity.
SD1346b	--	No written comments, but commenter sent pics and videos of mountain bikes riding out there.	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation confirmed that mountain bikes frequently use area.
SD1348a	134-54	<p>This is an occasionally cairned route that travels over bulbous slickrock. The route is used primarily by mountain bikers and hikers.</p> <p>Designating this route as open will lead to route proliferation.</p> <p>Designating open to motorcycles will not minimize damage but would facilitate of trail travel. Should designate this route closed.</p>	Based on information in this comment, the BLM re-evaluated this route through field visits and aerial photography. The BLM has determined that its evaluation is correct and has not changed the proposed designations under the alternatives. Re-evaluation confirmed that it is frequently used by mountain bikes.

Table P.2: Cultural Resource Comments

Letter #	Comment #	Public Comment	BLM Response
134	24	<p>In its evaluation of adverse effects to historic properties the Class III Survey wrongly considers only current conditions and does not consider reasonably foreseeable adverse effects that would result from designating routes as open to motorized vehicles. For example, according to the Class III Survey "construction and use of BLM designated routes and the initial creation of BLM designated liner disturbances are having no direct effect on historic properties in the project"18 and further "BLM designated routes and linear are creating no significant visual, auditory, or atmospheric indirect effects to the sites." The assessment of effects is limited only to the present condition of the sites based on current uses. The Survey makes no attempt to evaluate future impacts from route designation.</p>	<p>As part of the analysis of potential adverse effects, the BLM evaluated “future” impacts that may result from route designations. Observations of the previous and current route use were documented in the field during the Class III field survey. Potential future impacts are tied to associated NEPA alternatives.</p> <p>The observations made during the Class III survey were used by the BLM when conducting the NEPA analysis of alternatives to determine whether or not a route designation would cause reasonably foreseeable adverse effects. As part of this evaluation, the BLM identified potential for “future” adverse effects at a select number of sites (number may vary depending on alternative selected). Please see Chapter 3, Section 2.1.2 Environmental Effects and Appendix I.</p>
134	25	<p>BLM's failure to account for reasonably foreseeable effects is especially significant because of the Class III Survey's repeated observation that "[m]any if not most of the survey routes are naturalized and unused." Indeed, many of the routes surveyed are not currently open to motorized vehicle use. Accordingly, the Class III Survey's focus on current conditions does not properly assess potential adverse effects. Instead, to adequately analyze potential adverse effects from route designation in the San Rafael Desert Travel Plan, the Class III Survey must, at the very least, identify: (1) the current conditions of routes where historic properties are present; (2) the current designation status of those routes (open, closed, administrative use); and (3) for routes that are not currently open, whether historic properties may be affected by opening those routes to motorized vehicle use. For routes that are currently open, BLM must discuss all this information and further analyze potential impacts from increased motorized vehicle use on those routes. We recommend that BLM provide this information in tabular format for each route under consideration for designation in the San Rafael Desert Travel Plan.</p>	

Letter #	Comment #	Public Comment	BLM Response
134	26	Potential adverse effects from opening a route-especially routes that are "unused, very infrequently used, completely naturalized, [or] mostly naturalized"-could include physical destruction of the site or "[i]ntroduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features." BLM must fully account for these potential adverse effects. Its failure to do so renders the Class III Survey's evaluation of adverse effects wholly inadequate.	
128	89	In its evaluation of adverse effects to historic properties the Class III Survey wrongly considers only current conditions and does not consider reasonably foreseeable adverse effects that would result from designating routes as open to motorized vehicles. For example, according to the Class III Survey "construction and use of BLM designated routes and the initial creation of BLM designated liner disturbances are having no direct effect on historic properties in the project" and further "BLM designated routes and linear are creating no significant visual, auditory, or atmospheric indirect effects to the sites." The assessment of effects is limited only to the present condition of the sites based on current uses. The Survey makes no attempt to evaluate future impacts from route designation.	
128	90	BLM's failure to account for reasonably foreseeable effects is especially significant because of the Class III Survey's repeated observation that "[m]any if not most of the survey routes are naturalized and unused." Indeed, many of the routes surveyed are not currently open to motorized vehicle use. Accordingly, the Class III Survey's focus on current conditions does not properly assess potential adverse effects. Instead, to adequately analyze potential adverse effects from route designation in the San Rafael Desert Travel Plan, the Class III Survey must, at the very least, identify: (1) the current conditions of routes where historic properties are present; (2) the current designation status of those routes (open, closed, administrative use); and (3) for routes that are not currently open, whether historic properties may be affected by opening those routes to motorized vehicle use. For	

Letter #	Comment #	Public Comment	BLM Response
		<p>routes that are currently open, BLM must discuss all this information and further analyze potential impacts from increased motorized vehicle use on those routes. We recommend that BLM provide this information in tabular format for each route under consideration for designation in the San Rafael Desert Travel Plan. Potential adverse effects from opening a route-especially routes that are "unused, very infrequently used, completely naturalized, [or] mostly naturalized"-could include physical destruction of the site or "[i]ntroduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features." BLM must fully account for these potential adverse effects. Its failure to do so renders the Class III Survey's evaluation of adverse effects wholly inadequate.</p>	
160	6	<p>The EA claims consultation with Utah SHPO is ongoing but does not provide information upon which this consultation is based. Is this ongoing consultation based strictly on the specific routes surveyed in these recent surveys, or is it based on a more inclusive look at the entire travel planning area? Is this consultation on site eligibility only or is there consultation regarding determination of effect by the proposed action? How can various travel plan alternatives be evaluated if SHPO consultation has not been completed? Is there a PA or MOU outlining a phasing agreement with Utah SHPO in regards Section 106 responsibilities of the BLM?</p>	<p>The BLM updated sections 3.2.1 Cultural Resources and revised Appendix G to illustrate and document the BLM's compliance with the Section 106 process and the Travel PA.</p>
134	27	<p>Moreover, BLM must conduct Class III inventories on any route that is naturalized and/or invisible on the ground regardless of whether that route or portion of route is in an area with predicted high, medium or low potential for cultural resources. As discussed above, the draft Class III Survey repeatedly notes that many of the routes surveyed are in fact naturalized and invisible on the ground. The Travel Plan PA requires BLM to conduct Class III surveys for the construction of all new routes. That survey is not dependent on the predicted presence of cultural resources. The establishment of a new route to motorized vehicle use where one does not physically exist on the ground constitutes construction of a new route; BLM is effectively creating a</p>	<p>The BLM updated sections 3.2.1 Cultural Resources and revised Appendix G to illustrate and document BLM's compliance with historic property identification procedures pursuant to the Travel PA and the 2017 Settlement Agreement.</p>

Letter #	Comment #	Public Comment	BLM Response
		route where one does not currently exist. Accordingly, BLM must ensure that it has conducted full Class III surveys for any route-regardless of the potential for cultural resources-that is naturalized or invisible on the ground.	
128	91	BLM must conduct Class III inventories on any route that is naturalized and/or invisible on the ground regardless of whether that route or portion of route is in an area with predicted high, medium or low potential for cultural resources. As discussed above, the draft Class III Survey repeatedly notes that many of the routes surveyed are in fact naturalized and invisible on the ground. The Travel Plan PA requires BLM to conduct Class III surveys for the construction of all new routes. That survey is not dependent on the predicted presence of cultural resources. The establishment of a new route to motorized vehicle use where one does not physically exist on the ground constitutes construction of a new route; BLM is effectively creating a route where one does not currently exist. Accordingly, BLM must ensure that it has conducted full Class III surveys for any route-regardless of the potential for cultural resources-that is naturalized or invisible on the ground.	
134 128	28 92	Finally, it appears that the Class III Survey inappropriately limited its assessment of indirect effects to historic properties eligible for listing on the National Register for Historic Places under Criterion D. According to the Survey, "[t]he potential for indirect adverse effects including visual, atmospheric and/or auditory aspects was also assessed at each historic property, particularly those sites which are eligible under Criterion A, B, or C to the National Register of Historic Places." Potential indirect effects, including visual, atmospheric or auditory impacts must be analyzed, regardless of the criterion under which a site is eligible for listing on the NRHP. Indeed "integrity of location, design, setting, . . . and feeling and association" is a pre- condition to inclusion on the National Register under any of the criteria (a)-(d). An "adverse effect" may include both impacts on the character-defining features under (a)-(d) and impacts to the integrity of a site. Degradation to the setting and feeling of a historic	<p>The BLM updated sections 3.2.1 Cultural Resources and revised Appendix G to illustrate and document the BLM's compliance with historic property identification and National Register evaluation procedures pursuant to the Travel PA and the 2017 Settlement Agreement.</p> <p>The Class III survey report states in its <i>Inventory Methods</i> section that "The potential for indirect adverse effects including visual, atmospheric and/or auditory aspects was also assessed at each historic property, particularly those sites which are eligible under Criterion A, B, or C to the National Register of Historic Places" (emphases added; Whiting and Brown 2019). Please note the distinction of the pronoun each compounded with the adverb particularly. "Each" means "used to refer to all the individual members of a set <u>without exception</u>" (i.e. every or all). The word "particularly" is defined as "specifically emphasizing a point <u>to a higher degree</u> than is average". Therefore, the report sentence</p>

Letter #	Comment #	Public Comment	BLM Response
		<p>property may constitute an "adverse effect," even if those changes would not also render the site "less able to provide data." Accordingly, the Class III Survey must evaluate potential indirect impacts to all historic properties, regardless of the criterion under which it is eligible for the National Register.</p>	<p>relays that all historic properties were assessed for indirect effects, and the historic properties that were eligible under Criterion A, B, or C were assessed to an even higher degree than those eligible under only Criterion D. Of the 71 historic properties found, <u>all</u> were recommended eligible under Criterion D and one was recommended eligible under Criterion C <u>and</u> D. Therefore, the report assessed all types of effects to all historic properties regardless of which National Register criteria they met.</p>
128 134	51 19	<p>There are three identified ACECs within the TMA, but the Dry Lake Archeological District ACEC is the one most threatened by the San Rafael Desert travel plan. The Dry Lake Archaeological District "has a multitude of apparently undisturbed single-episode lithic scatters, as well as other site types such as lithic procurement, shelters, and campsites, it is one of the most likely locations for finding Paleo-Indian sites, the rarest site type in Utah." Price RMP at 131. Alternatives C and D fail to prioritize the protection of the Dry Lake Archaeological District ACEC. There are currently about 23 miles of routes designated for motorized vehicle use within the ACEC. See MAP_Dry Lake ACEC Alt. A (attached). Alternatives C and D would significantly increase the routes within the ACEC, increasing motorized vehicle use by 83% (Alternative C) or 91% (Alternative D). See MAP_Dry Lake ACEC AltC_D (attached). The majority of these routes do not exist on the ground, are impassable or are unnecessary. Furthermore, allowing increased motorized vehicle use within the ACEC would likely facilitate damage to cultural resources. Alternatives C and D would not prioritize the protection of the cultural resource for which the ACEC was designated. In addition to failing to prioritize the protection of Dry Lake ACEC, Alternatives C and D would not minimize damage to cultural resources as required by 43 C.F.R. § 8342.1.8. BLM also failed to take a hard look at the direct, indirect and cumulative impacts to Dry Lake ACEC from significantly increasing motorized vehicle use in the ACEC. See EA at 92 (declining to analyze the impacts to the Dry Lake ACEC).</p>	<p>The BLM updated sections 3.2.1 Cultural Resources and revised Appendix G to illustrate and document the BLM's compliance with historic property identification procedures (e.g. where Class III surveys should occur) pursuant to the Travel PA and the 2017 Settlement Agreement.</p> <p>As stipulated in the 2017 Settlement Agreement, Class III survey was conducted on all routes within the Dry Lake ACEC proposed to be designated OHV-open in one or more proposed route network alternative and all inventoried cultural resources were assessed for significance and potential undertaking effects. 43 CFR § 8342.1(a) notes that "...trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands...". The cultural resource assessment did not identify any current or potential adverse effects occurring to historic properties related to current or proposed OHV route use in the Dry Lake ACEC. Impacts that may occur at cultural resources in this specific area are disclosed in the EA.</p>

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128	94	<p>First, as discussed in Sections II and V.A.ii, many of the routes BLM is proposing to designate as open to motorized vehicles do not exist on the ground or are not receiving use. Alternatives C and D would add new routes that do not currently exist, introduce motorized vehicles onto previously closed routes and create significant new surface disturbance. BLM's NEPA analysis has not accounted for the potential effects to cultural resources from that new surface disturbance. Second, BLM's contention that there is not a reasonably foreseeable increase in OHV travel in the TMA is unfounded. BLM is significantly expanding the designated OHV travel network within the San Rafael Desert through this travel plan. OHV travel throughout Utah's public land has steadily increased over the years and shows no signs of diminishing. See EA at 13. And the BLM is conducting travel planning for adjacent public lands (Henry Mountains Fremont Gorge and San Rafael Swell) that will likely contribute to increase the use of and access to the San Rafael Desert. Finally, BLM's expectation that no routes in the San Rafael Desert will be promoted as a destination is unreasonable. BLM's scoping report makes clear that several routes, including routes that lead to or through cultural resources are being actively promoted by various OHV riding groups. See generally Bureau of Land Mgmt., San Rafael Desert Travel Management Plan Scoping Report (June 25, 2019). Multiple scoping comments request the opening of Cottonwood Wash, Junes Bottom and San Rafael River crossings. See e.g., id. at PDF pgs. 33, 257-259, 264, 268-69, 271. The comment letters specifically note that designation of those routes is supported by the Sage Riders, Green River Jeep Posse and Pathfinders Motorcycle Club. See id. at 268-69. The Grand Mesa Jeep Club, which the letter boasts includes over 100 families, also specifically requested for Cottonwood Wash and San Rafael river crossings to be open. Id. at 272-73. In fact, many of the scoping comments BLM received from the motorized community reflect a form letter that requested motorized access to the same seven or so routes. See generally id. It is</p>	<p>None of the alternatives authorize the construction of new routes; rather, they recognize and designate existing routes based on the best available data. The language in the EA has been clarified regarding destinations.</p> <p>The BLM's decision to not conduct additional cultural resource surveys, which includes an analysis of concentration of use followed the provision of the Travel PA. The SHPO concurred with the BLM's decision on December 19, 2019. A summary of the BLM's adherence to the Travel PA is found in Appendix G.</p> <p>The BLM completed its Section 106 of the National Historic Preservation Act responsibilities for all route designations by following the reasonable and good faith identification standards set forth in the Travel PA. These identification efforts included the evaluation impacts from route designations. For example, the Class III survey used field observations regarding the impacts of previous and current road use to determine whether a route designation would cause reasonably foreseeable adverse effects. From these analyses, a summary of potential impacts has been disclosed within the EA.</p>

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		unreasonable to assume that-at the very least-these seven routes will not be actively promoted these OHV groups.	
128	85	To satisfy its reasonable and good faith identification obligation, BLM must - at the very least - consider all of its existing cultural resource information. It has not done so here. BLM must use individual site type models to determine which routes require a pre-designation Class III survey for cultural resources. According to the Settlement Agreement in Southern Utah Wilderness Alliance v. U.S. Dep't of the Interior, BLM must "ensure Class III cultural resources surveys have been conducted along all routes or portions of routes that are designated as open in the TMAs . . . and that are located in areas that BLM has identified in a Class I cultural resource inventory as having a high potential for cultural resources." Over the past several years, BLM completed Class I and Class II inventories in the San Rafael Desert area, including the lands at issue here: a Price field-office-wide Class I inventory and a San Rafael Desert-specific Class II inventory. Each inventory contains associated archaeological site predictive models. These predictive models are made up of a series of different models-several site-type models and one composite model. BLM's San Rafael Desert-specific cultural site predictive models include three site type models and one composite model. The composite model simply combines each of the site type models into one overall model.	<p>The BLM revised 3.2.1.1 to provide additional information on the cultural resource potential/predictive models. The 2017 Settlement Agreement does not mandate the use of predictive models of any sort. Furthermore, the National Historic Preservation Act (as amended), nor in its implementing regulations, mandate the use of any type of predictive model. Furthermore, the Travel PA, which was signed by the Advisory Council on Historic Preservation and SHPO does not identify, list, encourage or require the BLM to use site type models.</p> <p>The BLM met the reasonable and good faith identification standard by adhering to the requirements of the Travel PA, which included the development of a "cultural resource potential model". Which is defined as a map that will identify those lands within the travel management areas that are predicted to have a high, medium or low potential of having cultural resources. See Stipulation II.B.3 and III.A.2 for the definition and requirements of a cultural resource potential model.</p> <p>The BLM's predictive model is comprehensive, statistically sound, scientifically based, and the methods through which it was developed and tested have been professionally peer-reviewed by a GIS-modeling expert and Professor of Anthropology at the University of Arkansas. This approach in identifying the high potential cultural resource areas in the TMA was appropriate and in compliance with the Travel PA and the 2017 Settlement Agreement.</p>
128	87	The site type models provide the most detailed information about potential locations of undiscovered sites and give BLM specific information about the potential for adverse effects. By relying on composite maps rather than the individual site type model maps, BLM arbitrarily dilutes the significance of individual site types that may be adversely affected by the travel plan. This is especially significant here because BLM will immediately authorize surface disturbing activities to commence (e.g. OHV use) and conduct no further analysis on designated routes under either the National Environmental Policy Act (NEPA) or the National Historic Preservation Act (NHPA).	<p>Comprehensive models of archaeological sensitivity are the industry standard for models used as planning tools. For further reference, see: ESRI 2009, Modeling Archaeological Sensitivity in Vermont with GIS. GIS Best Practices: GIS for Archaeology 33-37. https://www.esri.com/library/bestpractices/archaeology.pdf.</p>

Letter #	Comment #	Public Comment	BLM Response
134	22	<p>Here, BLM used only the composite site predictive models to determine which routes and portions of routes required Class III surveys.⁹ The composite model maps provide a demonstrably incomplete picture about potential cultural site location on the ground. For instance, the Open Prehistoric Sites model predicts that much of the central and southern San Rafael Desert TMA has a high potential for cultural resources.¹⁰ The composite model, on the other hand, predicts that significantly less land within the TMA has a high potential for cultural resources.¹¹ As a result, BLM inappropriately limited its surveys and did not survey travel routes or portions of routes that its own model (e.g. Open Prehistoric Site) predicts has a high potential for cultural resources.</p>	<p>Warren, Robert E. and David L. Asch, 2000, A Predictive Model of Archaeological Site Location in the Eastern Prairie Peninsula.</p> <p>Practical Applications of GIS for Archaeologists: A Predictive Modeling Toolkit, edited by Konnie L. Westcott and R. Joe Brandon, pp.5-32. Taylor and Francis, Philadelphia.</p> <p>Bonna, Luke Dalla, 2000, Protecting Cultural Resources through Forest Management Planning in Ontario Using Archaeological Predictive Modeling.</p> <p>Practical Applications of GIS for Archaeologists: A Predictive Modeling Toolkit, edited by Konnie L. Westcott and R. Joe Brandon, pp.73-99, Taylor and Francis, Philadelphia.</p>
128	86	<p>BLM used only the composite site predictive models to determine which routes and portions of routes required Class III surveys.¹⁹ The composite model maps provide a demonstrably incomplete picture about potential cultural site location on the ground. For instance, the Open Prehistoric Sites model predicts that much of the central and southern San Rafael Desert TMA has a high potential for cultural resources.²⁰ The composite model, on the other hand, predicts that significantly less land within the TMA has a high potential for cultural resources.²¹ As a result, BLM inappropriately limited its surveys and did not survey travel routes or portions of routes that its own model (e.g. Open Prehistoric Site) predicts has a high potential for cultural resources.</p>	
128	88	<p>The draft Class III Survey did not account for all known cultural resource information. According to EnviroSystems Management, "BLM archaeologists agreed a Preservation Pro search would be sufficient and that there was no need to visit the Price FO for additional information." However, a Preservation Pro search may not account for all known cultural resource information within the San Rafael Desert TMA. First, it is not clear that all of the cultural resource information on file in the Price field office has been forwarded to the Utah State Historic Preservation Office</p>	<p>The Utah SHPO serves as the data steward for BLM Utah. As part of SHPO's data management responsibilities, SHPO staff traveled to the Price Field Office multiple times in 2017 to scan all cultural resource reports and site forms on file. All records between 2017 and the present have been sent to the SHPO during the standard Section 106 process. As a result, SHPO, and therefore Preservation Pro, have digital copies of all records the Price Field Office has on file. - All cultural resource site forms and reports are sent to SHPO</p>

Letter #	Comment #	Public Comment	BLM Response
		<p>(SHPO) for inclusion in Preservation Pro. BLM field offices regularly retain cultural resource information that is not sent to the Utah SHPO. Second, Preservation Pro only includes official cultural site forms recorded by certified archaeologists. It does not include cultural site information provided by other organizations or persons. For instance, groups such as Utah Rock Art Research Association and Jonathan Bailey have submitted significant cultural resource and site location information for this area to the Price field office over the years. Though this information would not have been submitted through Preservation Pro, it is nevertheless important and should be considered in the Class III Survey. EnviroSystems Management should be directed to search the Price field office's records to ensure that the Class III Survey has accounted for all known resource information.</p>	<p>The SRD TMP Class III contractor was provided a copy of the BLM Price Field Office's Class I Existing Information Inventory (Class I) report during their literature review process prior to initiating fieldwork in 2017. This Class I includes information from sources that are external to the BLM, including information from the Utah Rock Art Research Association (URARA) and Johnathan Bailey. This inclusion of this information is acknowledged in the Data Sources chapter as "Consulting parties literature contribution". Accordingly, three sites identified by URARA and Mr. Bailey were addressed as part of the Class III Intensive Field Survey in 2017.</p> <p>Through the consultation process of the Travel PA, the BLM's Price Field Office Archaeologist has been working closely with Diane Orr of URARA and Johnathan Bailey from July 30, 2019 to present, discussing, collecting, and analyzing the site location data URARA provided to the BLM in the San Rafael Desert Travel Management Area.</p>
134	23	<p>The site type models provide the most detailed information about potential locations of undiscovered sites and give BLM specific information about the potential for adverse effects. By relying on composite maps rather than the individual site type model maps, BLM arbitrarily dilutes the significance of individual site types that may be adversely affected by the travel plan. This is especially significant here because BLM will immediately authorize surface disturbing activities to commence (e.g. OHV use) and conduct no further analysis on designated routes under either the National Environmental Policy Act (NEPA) or the National Historic Preservation Act (NHPA). In addition, the draft Class III Survey did not account for all known cultural resource information. According to EnviroSystems Management, "BLM archaeologists agreed a Preservation Pro search would be sufficient and that there was no need to visit the Price FO for additional information."¹² However, a Preservation Pro search may not account for all known cultural resource information within the San Rafael Desert TMA. First, it is not clear that all of the cultural resource information on file in the</p>	<p>Please refer to the responses to Comments #128-85 and 128-88. The BLM updated section 3.2.1 Cultural Resources in regard to impacts to cultural resources from vehicle use, vandalism and illegal collection.</p>

Letter #	Comment #	Public Comment	BLM Response
		<p>Price field office has been forwarded to the Utah State Historic Preservation Office (SHPO) for inclusion in Preservation Pro. BLM field offices regularly retain cultural resource information that is not sent to the Utah SHPO. Second, Preservation Pro only includes official cultural site forms recorded by certified archaeologists. It does not include cultural site information provided by other organizations or persons. For instance, groups such as Utah Rock Art Research Association and Jonathan Bailey have submitted significant cultural resource and site location information for this area to the Price field office over the years. Though this information would not have been submitted through Preservation Pro, it is nevertheless important and should be considered in the Class III Survey. EnviroSystems Management should be directed to search the Price field office's records to ensure that the Class III Survey has accounted for all known resource information.</p>	
128	32	<p>Alternatives C or D would introduce new motorized vehicle use in areas known to have important and sensitive cultural resources. See SUWA Route Report [redacted under 43 CFR 7.18]; Comments submitted by Utah Rock Art Research Association, Jonathan Bailey and Steve Acerson (Jan. 13, 2019). Alternatives C or D would also significantly increase the number and miles of designated OHV routes within a quarter mile of National Register of Historic Places (NRHP)-eligible sites, as well as ineligible cultural resources. EA at 18. OHV travel near or immediately adjacent to cultural resources causes damage to cultural resources through crushing from tires and also facilitates unintentional disturbance, illegal collection and vandalism. EA at 18. BLM even acknowledges that Alternatives C and D would have only a "moderate likelihood" for reducing OHV impacts to cultural resources. EA at 19. But see id. (explaining that Alternative B "is projected to have high potential for reducing impacts on cultural resources"). Significantly increasing motorized vehicle use near known cultural resources does not comply with BLM's duty to minimize impacts to cultural resources. See also infra, Section V.</p>	

Table P.3: Additional Comments and Responses

Letter #	Comment #	Public Comment	BLM Response
145 145	1 2	<p>Doing only route designation for OHVs is contrary to BLM Handbook H-8342-1. Section 1 A</p> <p>Limiting this plan to only OHV designations is contrary to BLM's own definition of and guidance for, a comprehensive TTMP.</p>	<p>The comment is correct that H-8342-1 Section 1A states: “Travel and transportation planning must go beyond motorized or off-highway vehicle (OHV) activities to address non-motorized travel and recreational needs, as well as resource issues...” However, it does not state that <i>all</i> travel planning decisions must be addressed in a single document. Section C of the Handbook specifies the different levels of decisions to be made and the documents that can be used to make them.</p> <p>The San Rafael Desert TMP is what the Handbook calls Implementation Level Decisions. The Handbook explains: “Travel and transportation decisions can be developed as a stand-alone Travel Management Plan (TMP) or incorporated into activity management plans, such as those for recreation or energy.”</p> <p>The 2017 Settlement Agreement primarily focused on motorized and ORV use of routes and impacts. (Settlement Agreement Section 17.a., e., f., Section 22, Section 23), so this TMP is being prepared to meet the requirements of the 2017 Settlement Agreement. The BLM expects that once the 2017 Settlement Agreement requirements for OHV use are met, additional efforts will be pursued to develop plans for nonmotorized trails. Note that nonmotorized use of the OHV designated routes in this TMP is allowed regardless of designation.</p> <p>Also, as required by the Handbook, the BLM does <i>address</i> non-motorized travel and recreation needs in the San Rafael Desert EA for every route. See for example route report SD001 which recognizes a primary route management “purpose and need” is bicycle, equestrian, and hiking among other nonmotorized uses. For the San Rafael Desert EA, the BLM is only electing to defer non-motorized <i>designations</i> to a later date and document.</p>

Letter #	Comment #	Public Comment	BLM Response
128	71	<p>The vehicle emissions and increased visitation, coupled with the hundreds of miles of new routes proposed to be "open" under Alternatives B-D, will have significant impacts to air quality. By now it is well-documented that OHVs and other vehicles contribute to air quality issues including in arid, sensitive, climates such as the San Rafael Desert. See, e.g., Michael C. Dunway et al., Wind erosion and dust from US drylands: a review of causes, consequences, and solutions in a changing world, <i>Ecosphere</i> (March 2019) (attached); see generally Switalski. "Soil erosion by wind is one of the principal processes associated with land degradation in drylands." Switalski at 1-2. Relevant here, unpaved road networks and OHV use can also increase dust emissions from western US drylands. Unpaved roads, either established by use or engineered, generally involve removal of all vegetation and compaction of soils, resulting in large, connected reaches of exposed soil subject to wind erosion. Id. at 7 (citations omitted). Here, BLM acknowledges that these impacts are reasonably foreseeable but-without record support-concludes that detailed analysis is unwarranted. See EA, App. E at 91 ("On-route travel has the potential to emit criteria air pollutants . . . from tailpipe emissions and fugitive dust"); id. at 20, tbl. 3.2 (the majority of the San Rafael Desert contains "erodible" and "sensitive" soils).</p>	<p>Also, the BLM reviewed the Dunway and Switalski papers. The Dunway paper focused on new disturbances contributions to dust impacts. However, the BLM is not authorizing "disturbances" through this plan because no off-road travel is allowed in the project area, and no new routes are proposed. The Switalski paper recommended OHV planning be based on an inventory of the route system, impact assessment of local conditions, identifying and minimizing use of sensitive areas, and implementing additional mitigation and monitoring. The BLM has followed all of these recommendations, as documented in the route reports. The commenter is concerned that the BLM did not address dust impacts. Note that dust issues to resources were considered in the EA as explained in the "Summary Response to Substantive Comments: Air Quality Issues" and "Summary Response to Substantive Comments: Dust and Noise Pollution" comment response at the beginning of this Appendix..</p>

Letter #	Comment #	Public Comment	BLM Response
110	1	<p>If you can't or won't heed BLM's own studies of the effect of dust deposition on mountain snowpack, they take a look at Colorado snow studies The Center for Snow and Avalanche Studies, Colorado Dust-on-Snow Program. The Center for Snow and Avalanche Studies: http://snowstudies.org/ or for the 2019 summary: http://www.codos.org/codosupdates/2019seasonsummary. Or take a look at Sustainable Development Strategies Group's "Dust Deposition on Snow": https://www.sdsg.org/dust-deposition-on-snow</p>	<p>The BLM reviewed the cited studies including snowstudies.org, the 2019 summary, and the SDSG's Dust Deposition on Snow. The BLM also reviewed current regulations regarding PM 10 and PM 2.5, their characteristics, and current monitoring and modeling data about emissions of those criteria pollutants in Emery County. The proposed action does not include new construction of routes, and it does not propose to decrease, maintain, or increase OHV use in the TMP area. The proposed action does review the existing route network in the San Rafael Desert and assigned open, limited, or closed designations to each route based on existing use and resource considerations, and Alternatives B, C, or D will result in closing some existing routes. The BLM concluded in the Interdisciplinary Team Checklist that dust in the area is not expected to vary between alternatives such that it would help inform the decision to be made.</p>
148	7	<p>Section 3.3.2.2 Alternative C - BLM should clarify in the last sentence of this paragraph that trust lands are a distinct category of land separate and aside from public lands and private lands.</p>	<p>The State has been added to the list of landowners.</p>
148	8	<p>Section 3.3.2.2 Alternative D - BLM should clarify in the last sentence of this paragraph that trust lands are a distinct category of land separate and aside from public lands and private lands.</p>	<p>The State has been added to the list of landowners.</p>
128	12b	<p>Price RMP OHV-5 to -7 specifies that motorized use is permitted only on designated routes. BLM contends that 71% of the routes evaluated for designation in the SRD TMA are existing undesignated routes which are receiving use and would continue to receive use regardless of TMP alternative selected. By failing to account for its reclaimed or nonexistent roads and previous travel management decisions (closed or undesignated routes), BLM inaccurately inflates the impacts of the no action alternative and minimize the impact of the alternatives by inferring that the nonexistent, closed, or undesignated routes are available for motorized vehicle use. To accurately evaluate the baseline, BLM must identify previously closed routes and explain why those routes were closed.</p>	<p>Alternative A has been refined and the EA has been clarified to detail the BLM's route inventory and evaluation process and baseline for comparison. The 2008 RMP did not designate any routes as OHV-closed. The BLM has re-evaluated numerous routes based on public comment, and has adjusted the route evaluations and proposed designations accordingly when re-evaluation indicated the route's condition was something other than what was reflected in the initial inventory.</p>

Letter #	Comment #	Public Comment	BLM Response
28	27	Motorized References need to be adequately considered. The analysis has not adequately considered information that supports the need and value of motorized recreation.	<p>The EA considers motorized recreation as part of the multiple uses allowed on BLM-managed public lands, and the purpose and need of the EA, in part, is to consider motorized use within the study area.</p> <p>EA Section 3.3.1. has been updated to clarify the recreational use of motorized vehicles.</p>
128	59	<p>The EA also ignores the reasonably foreseeable impacts from the Henry Mountains Fremont Gorge TMA and San Rafael Swell TMA. Both TMAs are adjacent to the San Rafael Desert TMA. See MAP_BLM TMAs (attached). 1) In fact, BLM is proposing to designate routes that would lead to the Henry Mountains Fremont Gorge TMA, including to routes that are not currently designated for motorized use. See id.; MAP_Routes Extending to Other TMAs (attached). 2) Similarly, the Price field office is in the midst of evaluating OHV routes for the San Rafael Swell TMA which is just across Highway 24 from the San Rafael Desert TMA. See Bureau of Land Mgmt., Travel and Transportation Mgmt., https://www.blm.gov/programs/recreation/recreation-programs/travel-and-transportation/utah. 3) Adding more motorized vehicle routes in an area adjacent to the San Rafael Desert TMA would likely result in increased motorized vehicle users and must be analyzed accordingly. See <i>Sierra Club v. U.S. Forest Serv.</i>, 857 F. Supp. 2d 1167, 1181 (D. Utah 2012). The designation of motorized vehicle routes in these three adjacent TMAs would impact a number of resources, including but not limited to wildlife, special status species, air quality, water quality, cultural resources.</p>	Cumulative impact areas have been identified and the past, present, and reasonably foreseeable projects have been clarified throughout Chapter 3.

Letter #	Comment #	Public Comment	BLM Response
128 128	65 47	<p>The EA failed to take a hard look at impacts to lands with wilderness characteristics. First, in the EA, BLM fails to provide meaningful-and essential-baseline data. Among other things, the EA does not provide any data regarding the specific wilderness character units, the number of routes to be designated as "open" or "limited" in each specific wilderness characteristics unit under each alternative, the total acreage impacted in each unit under each alternative, and whether route designations would reduce the eligibility of any unit from future designation as Wilderness (i.e., reduce the unit below the 5,000 acre threshold). See EA at 56-59.</p> <p>BLM merely states that there are eleven impacted wilderness characteristics units and then, without any record support, claims that the units will all suffer "common" impacts. Id. at 56. BLM reaches this conclusion despite never having disclosed how many routes are in each unit, the length of those routes, and whether the routes bisect the respective unit or are considered to be "cherry-stems." The full extent of BLM's NEPA analysis in the EA is to compare each alternative-at the planning level scale-without providing any actual site-specific analysis regarding potential impacts to wilderness characteristics from each (or any) of the alternatives or routes. Id. 58-59.</p>	<p>The EA has been updated to add wilderness character unit names, acreages, inventory date, and miles of existing routes to the affected environment. Tables disclosing the mileages of proposed designations per unit, per alternative, have been added to the effects analyses for LWC.</p> <p>The EA Section 3.2.9 has also been updated to clarify effects to wilderness characteristics including solitude and primitive or unconfined recreation.</p>

Letter #	Comment #	Public Comment	BLM Response
128	47	<p>Under the Settlement Agreement, BLM must "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." Settlement Agreement § 17.B(e). BLM has failed to do that here. In its route evaluation forms, BLM never discusses how designation of a route through identified LWC as open to motorized vehicles would impact the constituent elements of wilderness characteristics. Instead, BLM only considers the constituent elements of wilderness characteristics when it discusses "closing" a route. BLM must revise its route evaluation forms to account for potential damage to constituent elements of wilderness characteristics.</p>	<p>The 2017 Settlement Agreement states “BLM will explain in the NEPA document how each proposed route network will ‘minimize damage’ to resources of the public lands...” and “BLM will consider in the NEPA document at least one proposed alternative route network that would not designate for ORV use any route where BLM has determined that such use may ‘damage’ ...BLM-inventoried wilderness characteristics...” The BLM has disclosed in the EA the potential damage to wilderness characteristics. The Final EA has been updated to more clearly present BLM's analysis of impacts to wilderness characteristics.</p> <p>Regarding the route report requirements, the 2017 Settlement Agreement 17 (d) states BLM will “document in each route report all direct and indirect impacts to soil, watershed, vegetation, or other resources of public lands...including identified cultural resources and...wilderness characteristics.” To fulfill this requirement, the BLM has identified in the route report’s special resources concern table the presence of wilderness characteristics. Then each alternative’s table discloses how the proposed designation under that alternative (closed, limited, or open) affects wilderness characteristics. For example, closed-route impact text says: “By closing the route, the potential for future impacts to wilderness character and impairment of wilderness suitability would be minimized while wilderness characteristics of naturalness and opportunities for solitude would be enhanced.” Open-route impact text says: “Continued use of this route would minimize impacts to wilderness characteristics (LWC or Natural Area) by providing reasonable access to these lands on a pre-existing route, reducing the potential for new disturbances from cross-country use.</p>

Letter #	Comment #	Public Comment	BLM Response
148	11	Section 3.3.4.2 Cumulative Impacts - This paragraph correctly states that route designations in the travel management area will impact people's ability to explore for new mineral deposits. However, the analysis in the various alternatives seems to focus solely on how access to existing mineral sites would be impacted. In the ID Team Checklist (Appendix E) under Geology/Mineral/Energy Production it states that "roads which are being considered for closure should be reviewed and analyzed for access to various existing and/or potential mineral activity (both fluid and solid minerals)." The impact of route closures under the various alternatives to exploration for new mineral deposits should also be analyzed and discussed.	The General Mining Law of 1872 gives to the locators and owners of mining claims, as a necessary incident, the right of ingress and egress across public lands to their claims for the purposes of maintaining the claims and as a means toward removing the minerals. For exploration activity greater than casual use and which causes surface disturbance of 5 acres or less of public lands, the operator must file a complete Notice of Intent with the responsible BLM Field Office. A completed Notice constitutes vehicle use authorization. The EA has been corrected to reflect that the designations apply to public OHV use only, and that permitted users will still have access to mining and other land authorizations.
128	46	BLM further relies on its unsupported contention that low speeds on routes will retain soils and vegetation and minimize potential for soil erosion and vegetative loss and thus minimize damage for those resources. See, e.g., BLM, Route Evaluation Forms SD695; SD698; SD701. BLM provides no support for this assumption. If vegetation, including rare or sensitive plants, are present in the track of a route, it makes no difference how often or at what speeds travel occurs on those routes. Furthermore, on semiarid Utah lands, even a single pass of a vehicle can increase wind and water erosion of soils. See Diane W. Davidson, supra, at 111.	<p>Vehicle speed can result in fugitive dust emissions (from soil disturbance), and this dust can affect other species as described in the EA. Research has found that higher vehicle speeds result in higher dust emissions (Goossens & Buck, 2009).</p> <p>The information in Davidson et al. is considered in EA Chapter 3 as having effects on plant communities. The reference does not present new information.</p>

Letter #	Comment #	Public Comment	BLM Response
134	32	<p>BLM's expectation that no routes in the San Rafael Desert will be promoted as a destination is unreasonable. BLM's scoping report makes clear that several routes, including routes that lead to or through cultural resources are being actively promoted by various OHV riding groups. See generally Bureau of Land Mgmt., San Rafael Desert Travel Management Plan Scoping Report (June 25, 2019). Multiple scoping comments request the opening of Cottonwood Wash, Junes Bottom and San Rafael River crossings. See e.g., id. at PDF pgs. 33, 257-259, 264, 268-69, 271. The comment letters specifically note that designation of those routes is supported by the Sage Riders, Green River Jeep Posse and Pathfinders Motorcycle Club. See id. at 268-69. The Grand Mesa Jeep Club, which the letter boasts includes over 100 families, also specifically requested for Cottonwood Wash and San Rafael river crossings to be open. Id. at 272-73. In fact, many of the scoping comments BLM received from the motorized community reflect a form letter that requested motorized access to the same seven or so routes. See generally id. It is unreasonable to assume that-at the very least-these seven routes will not be actively promoted these OHV groups.</p>	<p>The destination statement has been removed from the EA.</p>
164	9	<p>The DEA Section 1.3 "Purpose and Need" (on Page 2) adequately acknowledges that most of the SRD was not even inventoried of routes prior to approval of the current travel plan in 2008, which is why the RMP pledged to follow up with a later planning effort for considering additional routes. The DEA Section 2.3 (on Page 9) points out that, of all the subsequently inventoried routes that are missing from the 2008 travel plan, only 3% of them were deliberately closed by the BLM. The DEA Table 2.1 "Miles of routes by designation and alternative" (Page 8) finally compares each alternative to the total mileage of BM-inventoried routes, which is 1,202.7 although that figure misses the 80 miles of BLM-inventoried routes in the Labyrinth Canyon Wilderness as well as some existing routes across the SRD not inventoried. Therefore, the percentage of existing routes that would be closed by each alternative, which BLM reports to be 70% / 35% / 26% for Alternatives B / C/ D, is actually higher.</p>	<p>Alternative A has been refined to reflect current conditions. Calculations in Table 2.1 do not include the routes within the Wilderness area. The routes within the Wilderness area are not included because with Wilderness designation they are no longer accessible.</p> <p>Table 2.1 has been updated in the Final EA. EA Section 2.3 has been updated to clarify the change from open area available for cross country travel to travel limited to designated routes in the 2008 RMP.</p>

Letter #	Comment #	Public Comment	BLM Response
169	1	The statement of "Purpose and Need" (Sec. 1.3, p.2) could use some clarification. OHV travel in the San Rafael Desert Travel Management Area (TMA) is now limited to certain designated routes: those stipulated in the 2008 Price RMP (and packaged in this EA as "Alternative A"). The statement of "Purpose and Need" should explain more clearly why the BLM is revisiting this now.	The Purpose and Need section of the EA (Section 1.3.) has been updated to clarify the purpose and need for this travel management planning effort. The planning history of the area is included in other sections.
173	3	Three bird species federally listed under the Endangered Species Act - the Mexican Spotted Owl (Threatened), Southwestern Willow Flycatcher (Endangered), and Yellow-billed Cuckoo (Threatened) would be adversely impacted by the expansion of off-road vehicle routes and uses. Four sensitive species - Bald Eagle, Golden Eagle, Ferruginous Hawk and Burrowing Owl would also be negatively affected.	EA Sections 3.2.7. and 3.2.8. describe direct and indirect effects to wildlife from OHV disturbance and other human activities, and the effects of the action alternatives. These sections have been updated with additional information resulting ESA Section 7 consultation.
128 128	61 38	Adequately evaluating the cumulative impacts of the SRD TMP is especially important with regard to wildlife. For instance, the white-tailed prairie dog, western toad, sharp-tailed grouse, kit fox, Great Plains toad and ferruginous hawk all have habitat within each of the three TMA. See MAP_ White Tailed Prairie Dog Connectivity (attached); MAP_ Western Toad Connectivity (attached); MAP_ Sharp Tailed Grouse Connectivity (attached); MAP_ Kit Fox Connectivity (attached); MAP_ Great Plains Toad Connectivity (attached); MAP_ Ferruginous Hawk Connecvity (attached). Route designations in each of these TMAs can lead to habitat fragmentation, direct mortality, loss of riparian habitat and introduction of invasive species which can displace native vegetation necessary for foraging, security and nesting.	EA Sections 3.2.7. and 3.2.8. analyze impacts, including cumulative effects, to special status and sensitive wildlife species. The biological report explains why the Western Toad was excluded from analysis. Sharp-tailed grouse was not considered because it is not a Threatened, Endangered, Candidate, BLM Sensitive, or Utah species of concern. The Columbian sharp-tailed grouse which is mentioned in UDWR's most recent Wilderness Action Plan is, according to UDWR, now limited to a remnant population in eastern Box Elder, Cache, and Morgan counties.

134	35	<p>Without calculating fragmentation metrics or applying any scientific literature regarding species impacts to the miles of routes designated in this alternative (or any other alternatives), BLM has no way of knowing or asserting that simply by reducing the mileage of the designated route system, BLM is generating beneficial impacts to wildlife. In fact, the scientific literature indicates that there are certain thresholds for route density and core habitat over which species are impacted. We referenced much of this literature in our scoping comments. This means that BLM is not adequately protecting wildlife simply by closing or limiting use - BLM must reduce those metrics below the established thresholds to benefit wildlife. ...</p> <p>The minimal analysis included in the EA, which simply summarizes miles of designated routes without conducting impact analysis using scientific metrics or tying that analysis to the scientific literature, is inadequate to satisfy the minimization criteria; ensure consistency with the Price RMP direction to reduce fragmentation as required by FLPMA; or protect big game and other species habitat. This failure to calculate and consider route densities and other fragmentation metrics is inconsistent with BLM travel and transportation efforts elsewhere. For example, the BLM White River Field Office in Colorado included route density calculations in its Travel and Transportation Management Resource Management Plan Amendment Draft RMPA/EA from July 2018. In this document, BLM calculates route densities for proposed alternatives by Game Management Unit and includes hard targets for route densities in key habitats in at least one alternative. WRFO includes targets for route density of "1.5 mi/mi² across all GMU summer and severe winter range and 2.5 mi/mi² across all GMU general winter range and winter concentration areas." White River Field Office TTM Draft RMPA/EA, p. 42. Price Field Office (PFO) should include similar metrics in its analysis in order to better inform its route designation decisions and protect key wildlife habitats. BLM must revise the EA to calculate habitat fragmentation metrics under each alternative and analyze impacts to desert bighorn sheep, mule deer, pronghorn, migratory birds, and other species utilizing scientific literature. We are including with</p>	<p>The BLM considers habitat loss/fragmentation/degradation in Section 3.2.8.2. The EA has been updated to include route density metrics within the General Wildlife section to better facilitate comparison between Alternatives. The literature was reviewed and the impacts identified were dependent upon ecoregion, degree of use on a route, and type of use on the route. Given these constraints and the lack of applicable research available, species specific thresholds were not calculated.</p>
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Letter #	Comment #	Public Comment	BLM Response
		<p>these comments a new synthesis of habitat fragmentation literature which BLM should utilize in re-analyzing species impacts based on fragmentation metrics. BLM must then develop and adopt alternatives that reduce habitat fragmentation in the context of scientific thresholds (rather than merely reducing mileage) in order to conform to the Price RMP and comply with the agency's obligations under FLPMA and NEPA.</p>	
134	18	<p>TMA travel planning complies with the transportation (TRV) decisions listed above because ensuring access to a variety of lands was a key part of assigning route designations, roads that were designated as OHV-Closed (sometimes because they were redundant) received designations that placed them under natural reclamation... Moreover, maintaining connectivity and reducing habitat fragmentation were considerations that drove route designations. Draft EA at p. 4. However, the alternatives considered, particularly Alternatives C and D, fail to meet all of these criteria and therefore do not conform to the Price RMP. This is especially true regarding road densities and reducing habitat fragmentation by maintaining habitat connectivity. In fact, Alternatives C and D would increase road density and habitat fragmentation by designating hundreds of miles of new routes throughout the TMA, as discussed elsewhere in these comments.</p>	<p>See response to Comment #134-35 above.</p>

Letter #	Comment #	Public Comment	BLM Response
145	5	<p>Table 1.2. Key RMP travel-related management decisions and goals: This table omits RMP decision, Recreation 8. 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. This is a very specific resource allocation decision made at the RMP level. It should not be overturned by an activity plan absent a plan amendment to the RMP. This is the only mountain bike specific designation in the RMP. The history and administrative record on the Junes Bottom route is quite extensive. It is not one of the generic, undesignated routes addressed in this plan. Closure of Junes Bottom to OHVs and designating it for mountain bike use was an intentional, RMP level decision.</p>	<p>The road to June's Bottom is a constructed road. The 2003 San Rafael Route Plan designated this road as closed. The 2008 RMP did not designate the June's Bottom Road as open for OHV use, but did allow for mountain bike use on it. This route is a County D road, and with the Dingell Act it was cherry stemmed to within ¼ mile to the river. The Dingell Act did not restrict route use.</p> <p>Per the Travel and Transportation Planning Handbook, opening, limiting, or closing a specific route is an implementation level decision. An RMP is required to make management level decisions such as opening or closing areas. Occasionally, as in the case of June's Bottom Road, an RMP will also provide implementation level decisions. However, a plan amendment is not needed to change an implementation level decision, regardless of whether the RMP or an implementation plan provided the decision in question.</p> <p>In this case, the Dingell Act has cherry-stemmed the route from Wilderness areas, and in light of these changing conditions, the BLM is acting within policy to revisit the appropriate level of use allowable on the road in an implementation level plan.</p>

Letter #	Comment #	Public Comment	BLM Response
145	13	<p>The implementation discussed in this document and detailed in the TMP Implementation Guide is subject to available funding and resources. For the purposes of this analysis, it is assumed that funding and resources would be available for implementation. This is a huge assumption given current BLM budget situation. There is a long history of Price Field Office making commitments that are never met due to lack of funding and management support. Given that history, this assumption is not at all realistic. At least provide an analysis of how much you could reasonably accomplish with current funding levels and trends. Not getting the funding is a reasonable, foreseeable occurrence. You should provide a description of the management response if funding is not forthcoming. For example, designated routes would remain closed until required implementation actions and signage are in place.</p>	<p>The BLM has no reason to believe that future projects, management priorities, and necessary staff positions will not be funded through future annual budget allocations. The BLM intends to implement the selected alternative.</p>
128	40	<p>...</p> <p>See generally SRD Implementation Guide. While monitoring and adaptive management are an important and necessary component of travel planning, BLM may not satisfy its obligation to designate a travel network that complies with the minimization criteria now by relying on potential future actions that may or may not occur. For instance, the Implementation Guide includes a number of resource-specific minimization and mitigation options, including relocating or closing routes, signing routes, monitoring and law enforcement. See SRD Implementation Guide App. 8. But these are "possible" actions BLM may take and are "subject to available funding and resources." See id.; EA at 13. The potential futility of these mitigation strategies is especially relevant where, as here, BLM has failed to sign, monitor and enforce existing route designations despite committing to do so in the San Rafael Route Designation Plan. SRRDP DR/FONSI at 5. Minimization criteria compliance cannot be accomplished with implementation strategies; it must be complied with through travel network design and route-by-route evaluation.</p>	

Letter #	Comment #	Public Comment	BLM Response
110	2	<p>Now, I want you to consider another impact increased vehicular travel could have on rare desert species I consider vital for my quality of life. These rare plants represent the larger flora that depends of stable landscapes to survive and flourish. This short list of rare plants are important to me, and occur in various parts of the San Rafael Desert between the San Rafael Reef and the canyon country along the Green and Colorado rivers. These are all listed in the Utah Native Plant Society's list of rare and sensitive species.</p> <p><i>Eriogonum smithii</i> - Flat-Top Wild Buckwheat <i>Euphorbia nephradenia</i> - Paria Spurge <i>Oreoxis trotteri</i> - Trotter's False Carrot <i>Psorothamnus polydenius var. jonesii</i> - Jones' dalea <i>Dalea flavescens</i> - Canyonlands prairie clover <i>Sphaeralcea psoraloides</i> - Scurfpea Globemallow</p> <p>Impacts on these plants from vehicular travel in the San Rafael Desert concern me in the realm of commutative impacts that result from increased wheeled vehicle travel on desert landscapes. BLM must look beyond the obvious and consider every impact, including the contribution increased desert dust from the San Rafael Desert could mean for local and global climate effects.</p>	<p>The impacts to the species listed, except for <i>Dalea flavescens</i> which is not a Threatened, Endangered, Candidate or BLM Sensitive species, and several other special status plant species can be found in Chapter 3.2.6 of the EA.</p> <p>The BLM has considered the indirect effects mentioned. For example, effects of fugitive dust to Threatened, Endangered, Candidate, or Sensitive plant habitat were quantified for each alternative utilizing a 300-foot buffer, extending outward from either side of the route. This buffer captures the area of plant habitat that could be affected by fugitive dust resulting from OHVs.</p>
28	15	<p>The continual closure of motorized access and motorized recreation on lands managed by the Agency demonstrates it intent to eliminate motorized access and motorized recreation without adequately disclosing their intent and the cumulative effect. The significant negative cumulative effect of all motorized closures on the youth, disabled, elderly, and veterans has not been adequately evaluated and mitigated in this proposal.</p>	<p>The objective of BLM regulations regarding OHV use (43 CFR 8340.0-2) is to protect the resources of the public lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands. This plan seeks to respond to that objective. The BLM is not aware of data that demonstrates a disproportionate effect to youth, disabled, elderly, or veterans will occur from the designation of existing routes in the San Rafael area. Census demographics for Emery County show that the average age of the population of Emery County is 35 years, 31% of the population is younger than age 17, 41% of the population is age 17 to 55, and 28% of the population is over age 55. (https://datausa.io/profile/geo/emery-county-ut#demographics). No data exists that the BLM is aware of that ties these ages to OHV use.</p>

Letter #	Comment #	Public Comment	BLM Response
145	19	<p>The Green River, Barrier Creek, San Rafael River, Muddy Creek and Keg Spring were all found to be eligible rivers under the Wild and Scenic Rivers Act. All were found suitable under at least one alternative. While eligible rivers do not get statutory protection under the Act, BLM policy is to address possible impacts to suitability, eligibility arising from BLM actions. It is BLM's policy to protect eligibility. Each of these rivers should be analyzed for impacts of route designation on free flowing characteristics, Outstandingly Remarkable Values and tentative classification using the eligibility finding as the baseline inventory. See BLM Manual 6400 for specific direction.</p>	<p>Under the 2008 RMP Final EIS & Record of Decision, Barrier Creek and Keg Spring Canyon were considered and not determined to be eligible under the Wild & Scenic River Act. Impacts to the resources identified as outstandingly remarkable values of the San Rafael River (cultural, historic, scenic, recreational, and wildlife) are included in the document under their respective sections. The Green River Wild and Scenic River is addressed in the Interdisciplinary Team Checklist.</p>
145	20	<p>The Green River through Labyrinth Canyon is now a designated WSR. The impact to WSR characteristics should not be dismissed. The Checklist states as fact the Junes Bottom route was in use when the eligibility determination was made. Junes Bottom was closed in the 2003 plan, well before the eligibility determinations were published in the Draft RMP. The route was closed when the WSR designation was made by Congress. Designating this route would be a new action, not continuation of a previous use. Further, the EA admits recreation use and OHV use particularly has been increasing. It certainly could be anticipated the designation, signage, map publications would lead to increased use of the route that may impact the WSR. In short, Wild and Scenic Rivers is an issue that must be analyzed in detail by this EA.</p>	<p>The Green River Wild and Scenic River is addressed in the Interdisciplinary Team Checklist.</p>
128	37	<p>Roads significantly disrupt plant communities by harming cryptobiotic soils crusts, killing or injuring plants and pollinators and introducing nonnative plants. See Diane W. Davidson, supra, at 110. OHV use directly impacts special status plants through "soil compaction and erosion, dusting along roads, increased spread of noxious weeds, hydrological changes resulting from headcuts, destruction of biocrusts, crushing of plants and illegal plant collection. EA at 38. Those direct effects also lead to indirect effects such as increased presence of invasive species and noxious weeds leading to "decreased water, nutrients, and pollination for special status plants." EA at 39.</p>	<p>Most of the routes evaluated have little to no cryptobiotic soil crusts on the travel surface. Cross country travel is prohibited in this TMA. By designating motorized routes, impacts to soils will be limited. No new routes will be constructed with this TMP. A designated route network will better limit OHV use to the routes designated as open to OHVs. The EA addresses soils in Section 3.2.2. The EA addresses vegetation in Sections 3.2.5. and 3.2.6.</p>

Letter #	Comment #	Public Comment	BLM Response
128	17	SUWA provided substantial information including GIS data, georeferenced photo points and resource impact information to BLM in August 2019. See SUWA Comments on San Rafael Desert Travel Management Plan Scoping Report, Baseline Monitoring Report, Preliminary Route Evaluation Forms and Preliminary Alternatives (Aug. 2, 2019). BLM did not incorporate this information into its environmental baseline. EA at 9. Instead, BLM appears to have inappropriately relegated this information only for consideration in Alternative B.	Specific routes presented by SUWA in August 2019 were re-evaluated at that time and any changes in route designations were presented in the Preliminary EA Alternative Maps and Route Reports. In addition, modifications of Alternative B were presented in the Preliminary EA Alternative Maps. Three alternatives suggested by SUWA were considered but not analyzed in detail. See EA Section 2.8 for details.
105	1	I want the BLM to use the same documents I have been using to identify these places.	The commenter submitted numerous references to off road guidebooks, mine maps, rock hounding guides, and maps from PLPCO. The travel route network alternatives were developed from route inventory completed after the 2008 RMP. Some of these references may have been considered in previous travel planning efforts and RMPs. However, this TMP was developed based on an inventory of currently existing routes. No new route construction is proposed with this TMP, only routes currently existing are designated for this plan.
131	8	The potential loss of solitude and quiet due to increased designation of open/limited routes for those recreation users not driving OHVs should be included in the impacts analysis.	The effects of OHV use on solitude and other wilderness characteristics is analyzed in the context of impacts to lands with wilderness characteristics (Section 3.2.9).
128	63	The segment of the San Rafael River that passes through the San Rafael Desert planning area is on the state of Utah's "303(d)" list of impaired waters. See EA at 25. This segment, referred to as "San Rafael Lower," is impaired due to OE Bioassessment and total dissolved solids. See Utah Dept. of Env'tl. Quality, Division of Water Quality, 2016 Final Integrated Report, Chapter 3: Rivers and Stream Assessments at 13 (attached). The EA does not address this factor or analyze how-or whether-the proposed alternatives will impair efforts to bring the San Rafael River into compliance with relevant water quality standards. See EA at 25-28 (failing to address this issue). BLM's analysis must take into account the approved Total Daily Maximum Load (TMDL) for the San Rafael River.	The TMDL states the primary factors in increased TDS in the San Rafael watershed are from agricultural irrigation practices, surface runoff, and natural geological loadings. BMP's recommended by the TMDL for the San Rafael River from the confluence with the Green River to Buckhorn Crossing include: closing trails/roads that are eroded, and limit recreational vehicle usage to non-sensitive areas away from streams. Alternatives B, C, and D would close some routes to OHVs that are proximate to streams and riparian areas (total mileage varies by alternative). Therefore, all action alternatives will comply with recommended BMPS, and reduce TDS loading the San Rafael River. This in turn has the potential to improve OE bioassessment as some aquatic invertebrates are sensitive to TDS.

Letter #	Comment #	Public Comment	BLM Response
28	25c	The road density impact criteria being used is not site specific. The road density impact criteria being used grossly over-estimates the impact on wildlife. The road density impact criteria being used is not a reasonable measure of motorized impact on wildlife habitat.	Effect buffers based on referenced literature were used to determine effects to wildlife. The criteria are not site specific because there is very little research specific to the ecoregion containing the TMA.
28	25d	Topography is a significant factor affecting wildlife habitat. Topography such as in the project area greatly reduces the impact on wildlife and is just as effective as or more effective than cover. The analysis does not reasonably consider topography.	Topography was considered in the wildlife effects analysis as an element of wildlife habitat, not separately. Buffer zones were used to delineate route impacts on adjacent habitat to the routes. See EA Sections 3.2.7. and 3.2.8. for effects to special status and sensitive wildlife.
28	25e	A motorized trail does not have the same impact on wildlife as a road. The impact analysis assumes one size fits all. A criteria and impact analysis must be developed that differentiates between different treads and level of use.	Within the TMA, almost every route is unpaved and degree of use is undetermined. In general, motorized trails have similar impacts to roads as outlined by numerous studies (Ouren et al. 2007, Brooks and Lair 2005, Utah Wildlife Action Plan Joint Team, 2015) and because roads of all kinds share the same general effects, mortality from collision with vehicles, modification of wildlife behavior, alteration of the physical environment, alteration of the chemical environment, spread of exotic species, and increased use of areas by humans (Trombulak and Frissell 2000) the impacts of all motorized routes within the TMA were considered equally.

Letter #	Comment #	Public Comment	BLM Response
128	53	<p>In February 2019, Congress passed the John D. Dingell, Jr., Conservation, Management and Recreation Act. That legislation included the Emery County Public Land Management Act which designated approximately 54,643 acres of land within the San Rafael Desert TMA as wilderness, known as Labyrinth Canyon Wilderness Area. The map establishing the boundaries of the Wilderness Area includes several "cherry stems" which were not designated as wilderness. There is nothing in the legislation itself or the accompanying map that obligates BLM to allow motorized vehicle use on those cherry stems. See John D. Dingell, Jr. Conservation, Management and Recreation Act §§ 1231-32. Nor was it understood between the parties negotiating the legislation that the cherry stems would mandate BLM to designate the cherry stems as open to motorized vehicle use. See Email from Scott Groene, Executive Director, SUWA to Romel Nicholas, Legislative Assistant, Senator Orrin Hatch (Dec. 7, 2018) (attached) ("There is no intention to convert the route out towards June's Bottom, which is only open to mechanized travel in the 2008 plan, to motorized travel. The cherry stem here leaves the route open only to mechanized use, as is the current situation."). Accordingly, BLM must evaluate each of the cherry stems as part of the San Rafael Desert travel planning process and comply with its substantive obligation to minimize impacts to natural and cultural resources, including the newly-designated designated wilderness. See 43 C.F.R. § 8342.1. This includes consideration of whether designating the cherry-stemmed routes would damage designated wilderness. See SRRDP DR/FONSI at 4 (closing June's Bottom to motorized vehicle use because of concerns with route proliferation).</p>	<p>The cherry stem routes were initially evaluated by the interdisciplinary team and designated based on purpose and need of the routes and presence of resources prior to the Dingell Act. With the passing of the Dingell Act, the cherry stem routes were re-evaluated. These routes may be designated as open to OHV use in one or more alternatives, as they are not within the Wilderness.</p> <p>Routes within the Wilderness are not a part of this TMP. Any routes falling within Wilderness were removed from the inventory after the Dingell Act was signed.</p>

Letter #	Comment #	Public Comment	BLM Response
128	79	<p>BLM's rationale for failing to analyze potential impacts to paleontological resources is arbitrary. In its ID Team checklist, BLM acknowledges that there are vertebrate paleontological resources in the San Rafael Desert TMA but concludes that such resources will not be impacted because no new surface disturbance is proposed. See EA, App. E at 94. As discussed above, this assumption is demonstrably false. Both Alternatives C and D would sanction new surface disturbance within the TMA and create new motorized routes and/or authorize grading and improvement of reclaimed or reclaiming routes. Furthermore, BLM allows travel up to 30 meters on either side of a designated route for parking, staging and to facilitate dispersed camping. See EA at 63. Because BLM would allow new surface disturbance both through its route designations as well as authorized off-route travel, BLM must analyze the potential direct, indirect and cumulative effects to paleontological resources.</p>	<p>Dispersed camping is allowed by the Price RMP's REC-3 decision. In the TMA, roadside camping would be allowed within 30 meters on either side of the centerline of designated routes that are open to public use, unless otherwise indicated. A management decision in the 2008 RMP allows "dispersed camping throughout the PFO without permit, unless otherwise designated by the BLM" (BLM 2008b). The same decision also states, "Determine and designate areas for dispersed camping and associated access routes with the cooperation of the counties" (BLM 2008b). OHV access to dispersed camp sites may only occur where there is evidence the site has been used in the past. Examples of this may include (but are not limited to) vehicle tracks, rock fire rings, parking areas, etc. This does not apply to areas where motorized travel is prohibited (e.g., Wilderness areas). The implementation of roadside camping is considered within the discussion of alternatives and implementation actions common to Alternatives B-D.</p>

APPENDIX Q. GLOSSARY

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

Adaptive management: A type of natural resource management in which decisions are made as part of an ongoing science-based process. Adaptive management involves testing, monitoring, and evaluating applied strategies, and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society. Results are used to modify management policy, strategies, and practices.

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

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

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

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

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

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

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

Crucial habitat: According to the DWR: “[Crucial] habitat [is that] on which the local population of a wildlife species depends for survival because there are no alternative ranges or habitats available. Crucial value habitat is essential to the life history requirements of a wildlife species. Degradation or unavailability of crucial habitat will lead to significant declines in carrying capacity and/or numbers of wildlife species in question” (DWR 2019).

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

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

Cultural resource inventory classes:

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

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

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

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

Designated routes: Specific roads and trails identified by the BLM where some type of use is appropriate and allowed.

Disposal: Transfer of public land out of Federal ownership to another party through sale, exchange, Recreation and Public Purposes Act, Desert Land Entry or other land law statutes.

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

Effects

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

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

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

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

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

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

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

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

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

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

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

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

Environmental assessment (EA): Public document for which a federal agency is responsible that serves to: 1) Briefly provide sufficient evidence and analysis for determining whether to

prepare an environmental impact statement or a finding of no significant impact; 2) Aid an agency's compliance with the National Environmental Policy Act when no environmental impact statement is necessary; 3) Facilitate preparation of an environmental impact statement when one is necessary. Shall include brief discussions of the need for the proposal, of alternatives, of the environmental impacts of the proposed action and Alternatives, and a listing of agencies and persons consulted.

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

Erosion: Detachment and movement of soil from the land by wind, water, or gravity.

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

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

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

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

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 2018)

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

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

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

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.

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

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

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

Land use plan: A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land-use-plan level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. The term includes both resource management plans (RMPs) and management framework plans (MFPs).

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

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

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

Minimize: Limit the degree or magnitude of.

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

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

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

Multiple use: The management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output (FLPMA) (from M6840, Special Status Species Manual).

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

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

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

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

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

Native vegetation: Plant species that were in the Project Area prior to European settlement, and consequently are in balance with these ecosystems because they have well developed parasites, predators, and pollinators.

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

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

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

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

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

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

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

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

OHV Open Areas: A designated area where all types of OHV travel is permitted at all times, anywhere in the area subject only to the operating restrictions set forth in subparts 8341 without restriction (43 CFR 8340.0-5(f)). Open area designations are made to achieve a specific recreational goal, objective and setting and are only used in areas managed for intensive OHV activity where there are no special restrictions or where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel..

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

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

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

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

Primitive road: A linear route managed for use by four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standards. Unless specifically prohibited, primitive roads can also include other uses such as hiking, biking, and horseback riding.

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 (equivalent to an EA's DR).

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; tool used by the BLM to record number of visits, types of activities, permits, partnerships, and agreements.

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

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

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

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

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

potholes, and the shores of lakes and reservoirs with stable water levels. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

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

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

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

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

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

Routes: Multiple roads, trails and primitive roads; a group or set of roads, trails, and primitive roads that represents less than 100 percent of the BLM transportation system. Generically, components of the transportation system are described as “routes.”

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.

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

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

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

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

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

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

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

Substantial habitat: According to the DWR: “[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” (DWR 2019).

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

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

Threatened species:

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

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

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

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

Travel management plan (TMP): A document that describes decisions related to the selection and management of a travel network and transportation system.

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

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

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

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

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

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

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

Wilderness characteristics: Wilderness characteristics include size, the appearance of naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation. Indicators of an area's naturalness include the extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats. Outstanding opportunities for solitude or primitive and unconfined types of recreation may be experienced when the sights, sounds, and evidence of other people are rare or infrequent, in locations where visitors can be isolated, alone or secluded from others, where the use of the area is through non-motorized, non-mechanical means, and where no or minimal developed recreation facilities are encountered.

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APPENDIX R. SAN RAFAEL DESERT TRAVEL MANAGEMENT IMPLEMENTATION GUIDE

LIST OF ACRONYMS

BLM	Bureau of Land Management
BMP	Best management practice
CFR	Code of Federal Regulations
CTTM	Comprehensive travel and transportation management
DOT	Department of Transportation
DR	Decision record
EA	Environmental assessment
ERMA	Extensive recreation management area
ESA	Endangered Species Act
FAMS	Facility Asset Management System
FHWA	Federal Highway Administration
FLAP	Federal Lands Access Program
FLPMA	Federal Land Policy and Management Act
FLTP	Federal Lands Transportation Program
GIS	Geographic information system
GPO	U.S. Government Publishing Office
GPS	Global positioning system
GTLF	Ground Transportation Linear Features Data Standard
HPTP	Historic Properties Treatment Plan
LAC	Limit(s) of acceptable change
LUP	Land use plan
LWC	Land with wilderness characteristics
MUTCD	Manual on Uniform Traffic Control Devices
MWC	Land managed for wilderness characteristics
NCA	National conservation area
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OHV	Off-highway vehicle
ORV	Off-road vehicle
RMIS	Recreation Management Information System
RMP	Resource management plan
RMZ	Recreation management zone
ROW	Right-of-way
RSC	Recreation setting characteristic
SHPO	State historical preservation office
SRMA	Special recreation management area
SRP	Special recreation permit
TMA	Travel management area
TMP	Travel management plan
TTM	Travel and transportation management
UTM	Universal Transverse Mercator
VRM	Visual resource management

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1. INTRODUCTION

Creating a Travel Management Plan (TMP) route network and analyzing the potential resource or resource use effects in an Environmental Assessment (EA) is a key component of travel management, but other important related actions take place before and after the TMP and its EA are approved. Active management of the routes in the travel management area (TMA) requires consistent monitoring, maintenance, interface with other resource programs, documentation, etc. This TMP Implementation Guide serves as a tool to assist BLM with those actions. Statewide, off highway vehicle (OHV) recreation continues to increase, and the trend is expected to continue in the San Rafael Desert TMA as well.

1.1 Document Overview

This document, the TMP Implementation Guide, is the implementation component of the San Rafael Desert Travel Management Plan (TMP), located on lands administered by the BLM Price Field Office (PFO). The TMP Implementation Guide's primary purposes are to implement the designations in the adopted San Rafael Desert TMP and to create a management framework that allows for current and future user needs while ensuring the protection of resources and reducing or preventing user conflicts. It provides operation and management guidance for the San Rafael Desert TMA OHV route network as analyzed in the San Rafael Desert TMP EA and adopted and designated in the Decision Record (DR). The EA provides environmental analysis and other data related to development of the San Rafael Desert TMP.

This TMP Implementation Guide is intended to serve as a standalone guide for operating and maintaining the TMA's designated travel route network in accordance with the DR. This implementation guide helps fulfill the purpose and need requirements for this NEPA process, because it meets public access and resource management needs, supports the 2008 PFO Record of Decision and Approved Resource Management Plan (2008 RMP) management decisions, and complies with federal regulations.

As part of ongoing travel management associated with the adopted San Rafael Desert TMP, new route designations may be added or changed in the future to respond to growing public demand for access, Title V ROW considerations, or concerns of damage to resources. Any new or changed designations will be subject to site-specific review as appropriate under applicable laws.

Primary operation and management actions discussed in this TMP Implementation Guide include maintenance and resource protection, public education and outreach, visitor services, working with partners, regulations enforcement, directional signing, reclamation, monitoring, and other guidance.

Monitoring efforts will help the BLM determine the effectiveness of route management and inform the BLM on issues that may need to be addressed with new management decisions or implementation planning. The San Rafael Desert Travel Management Plan Environmental Analysis (EA) identified a number of important resource issues at the heart of the BLM's commitment to provide for multiple land uses while protecting sensitive cultural and natural resources.

The following issues are of particular importance to the San Rafael Desert Travel Management Area (TMA):

- Impacts of OHV travel on known cultural resource sites
- Soil erosion, and its resulting impacts on vegetation
- OHV-related disturbances of sensitive species plants habitat
- OHV-related disturbances on sensitive species wildlife habitat
- Impacts from OHV travel on the defining characteristics of lands with wilderness characteristics and other special management area designations
- User conflicts within the TMA
- Route proliferation within the TMA

In addition, route evaluations identified monitoring activities specific to individual routes. General monitoring schedules are included in the Appendix 2 “Strategies and Schedules” section of this guide.

Note: The BLM intends to fully implement the San Rafael Desert TMA TMP according to this TMP Implementation Guide. However, the operation and management actions discussed in this document are subject to available funding and resources. Availability of staff and funding is a significant factor in TMP implementation. Grants, new appropriations, partnerships, and volunteers may be used to supplement budgets and workforce when possible.

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

1.2 Travel Management Area Overview

The 439,735-acre TMA (377,609 acres of which is BLM managed) is in Emery County and falls under the jurisdiction of the BLM PFO. For more details, see the attached maps and Section 1.4 of the EA. Within the TMA, the following are specially designated areas (i.e., areas designated by Congress or through an RMP process):

- Labyrinth Canyon Wilderness Area
- Wild and Scenic portion of Green River
- Big Flat Tops Area of Critical Environmental Concern (ACEC)
- Bowknot Bend ACEC, located in the new Labyrinth Wilderness
- Dry Lakes ACEC
- Labyrinth Canyon Special Recreation Management Area (SRMA)

There are also areas characterized as lands with wilderness characteristics (LWC) that are not specially designated but are managed for undeveloped character and to provide opportunities for primitive recreation as appropriate. See Appendix 4 in this guide for details on BLM travel management-related requirements for Wilderness, Wild and Scenic Rivers, and LWCs. The Big Flat Tops and Bowknot Bend ACECs are closed to motorized vehicle use per the 2008 RMP). Pages 108 to 110 and Appendix R-9 of the 2008 RMP provide management guidance for the Labyrinth Canyon SRMA (BLM 2008b).

1.3 Background on BLM Travel and Transportation Management (TTM)

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

National BLM policy requires state and field offices to develop TTM plans using a comprehensive, interdisciplinary approach. The BLM requires this approach to integrate TTM with land use planning and resource management programs in a comprehensive process. Because travel and transportation issues affect many of the BLM’s resource management programs, TTM must be conducted using a comprehensive, interdisciplinary approach. Using a collaborative approach can resolve or prevent resource conflicts and issues associated with travel on BLM lands. The San Rafael Desert TMP was developed using the TTM process. (This TMP addresses OHV use of routes in the San Rafael Desert TMA. Non-motorized uses will be addressed in a separate planning process.) See the BLM’s travel management handbook (BLM 2012a) and manual¹⁵ (BLM 2016c) for more information on the TTM process.

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

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

2. TRAVEL MANAGEMENT DECISIONS

2.1 2008 RMP Decisions and Current Management Settings

2.1.1 Previous Individual Route Designations and General Travel Management Guidance

The 2020 San Rafael Desert TMA TMP route network designations supersedes the individual route and area designations assigned in the TMA by the BLM’s 2003 San Rafael Route Designation Plan and the BLM’s 2008 RMP (for more details on these designation efforts, see pages 25 to 27 of the 2008 RMP (BLM 2008b)). For information on PFO travel management considerations, see page 37 of the 2008 RMP. In some cases, individual route designations

¹⁵ The BLM travel management manual was last updated in 2016 and should be used instead of the more outdated handbook when manual topics overlap with handbook topics.

developed in the 2020 San Rafael Desert TMP modify route-specific designations developed in 2003 and 2008. In addition to assigning project-level route designations, the 2008 RMP also provided overarching travel management-related goals, objectives, and management decisions (see Appendix 1 of this guide) to guide future travel management planning efforts such as the 2020 San Rafael Desert TMP.

2.1.2 Area Designations

An area designation is a land use planning (i.e., RMP-level) decision that permits, establishes conditions for, or prohibits OHV activities on specific areas of public lands. The BLM is required to designate all public lands under their jurisdiction as open, limited, or closed to OHVs. OHV area designations are different than individual route designations, which are more comprehensive and specific. After OHV area designations are assigned in RMPs, individual routes may be designated in areas designated as “open,” and individual routes must be designated in areas designated as “limited.” Typically, individual route designations of open, limited, or closed are identified during a route evaluation process and analyzed in an EA accompanying a proposed TMP. This was the case for the San Rafael Desert TMP/EA project.

The 2008 RMP designated the majority of the TMA as “Limited to Designated Roads and Trails.” It also designated part of the TMA (including much of the area that has since become the Labyrinth Canyon Wilderness) as “Closed.” For a depiction of OHV area designations in the TMA, see Map R-17 in the 2008 RMP (BLM 2008b). Though there are exceptions for emergencies and other instances, OHV and mechanized vehicle use is limited to designated routes in the TMA. According to the BLM’s travel management manual, “As an implementation-level decision, any limitation applied in an OHV limited area may change through . . . subsequent implementation level decisions allowing management to adapt based on resource concerns, changes in resource uses, and new information” (BLM 2016c). The BLM’s travel management manual provides definitions for the OHV area designations that apply in the TMA:

OHV Limited Areas

An OHV limited area is governed by one or more defined limitations. A limitation is a restriction at certain times, in certain areas, and/or to certain vehicular uses or users. These restrictions may be of any type but generally fall within the following categories or combination of categories: numbers of vehicles, types of vehicles, time or season of vehicle use, permitted or licensed use only, use on existing roads and trails, or use on designated roads and trails. While the designation of an area to the OHV limited allocation is a land use planning decision, the specific [individual travel route] limitations applicable to the area are considered implementation-level decisions.

The standard limitation will be “limited to designated routes” (i.e., [travel] restricted by implementation-level decisions to the use of specific roads, primitive roads, trails, and other identified routes). If no route-specific decisions exist at the time the RMP decisions are made, the designation of an “OHV Limited Area” will limit all OHV use to the same manner and degree occurring at the time of the designation in the RMP. The “OHV Limited Area” designation will prohibit any new surface disturbance, such as cross-country travel, unless subsequently authorized through another implementation-level decision. After the RMP decision has been issued, the field office will need to determine

the specific type of limitations that will apply to the areas with OHV ‘limited’ area designations. This is done, in most cases, through the development of a travel management plan (TMP) which results in an implementation-level decision for travel on each travel route within a given planning area (see Chapter 4 [of the travel management manual]). For additional information on the implementation of OHV limited area limitations see section 4.2 [of the travel management manual] (BLM 2016c).

OHV Closed Areas

OHV use is prohibited in a closed area. Areas should be designated closed when limitations on OHV use will not suffice to protect resources, promote visitor safety, or reduce use conflicts. Access in these areas by means other than OHVs, including those motorized vehicles and users excluded from the definition of an OHV (43 CFR 8340.0 5(a)), mechanized vehicles, and non-mechanized use is still permitted. Closure to non OHVs requires management outside of the 43 CFR 8340 regulation and may require creation of supplementary rules (see 43 CFR 8365.1-6), establishment of closures or restrictions (4 CFR 8364.1), or the addition of stipulations to new authorizations to govern the authorized use of vehicles.

Except as otherwise provided by law or regulation, congressionally designated Wilderness, certain other congressional designations, and some areas established by Presidential proclamation are statutorily closed to motorized and mechanized use. Refer to the appropriate law, regulation, proclamation, or policy for guidance on how to address any exceptions to closures (BLM 2016c).

2.2 Route Designations

One of the purposes of the San Rafael Desert TMP process was to make route-specific designations for each evaluated route in the TMA. For more details on route designation definitions and how they were determined, see Section 2.1 of the EA. For more details on each route designation, see the route reports discussed in Appendix N of the EA. Table 2.1 (below) shows the miles of routes for each EA alternative that fall under broader designation categories. Individual designations (especially “limited”) can be more detailed and customized.

Table 2.1: Miles of Routes and Percentages by Designation for the Selected Alternative (Modified Alternative D as described in the Decision Record) (1,180.8 total evaluated miles)

Selected Alternative		
Designation	Miles	Percent of total evaluated route miles
OHV Open	701.6	59%
OHV Limited	65.2	6%
OHV Closed	414.0	35%

2.3 Transportation Asset Types and the FAMS

“Transportation asset” is a term used to describe roads, primitive roads, and trails that comprise the transportation system. It is the general term used to categorize all BLM-constructed “transportation assets” contained within the Facility Asset Management System (FAMS). The

BLM travel management manual states, “The inclusion of a transportation linear feature in FAMS is not a decision—inclusion in FAMS is a management tool to aid in the implementation of route-related decisions such as administration, maintenance, emergency repair, etc.” (BLM 2016c). If the data are available, the BLM records FAMS numbers during evaluation for routes that are already in the FAMS.

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

Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

Primitive Road: A linear route managed for use by four-wheel drive or high-clearance vehicles. These routes do not normally meet any BLM road design standards. Unless specifically prohibited, primitive roads can also include other uses, such as hiking, biking, and horseback riding.

Trail: A linear route managed for human-powered, stock or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles. (BLM 2016c)

Table 2.2 below shows the mileage of FAMS asset types for the San Rafael Desert TMP adopted in the DR.

Table 2.2: Miles of Routes by Asset Type and Designation

Designation	Primitive Road	Road	Trail
OHV-Open - Open year-round to all OHV travel	320.1	360.3	20.9
OHV-Limited – OHV use limited to specified season, vehicle width, etc.	35.3	4.4	25.5
OHV-Closed – Route not available for OHV use	54.0	6.1	52.7
Allowable Use: Authorized users only	3.3	2.8	0.0
Totals	412.7	373.6	99.1

2.4 Non-Motorized Route Use

TTM encompasses more than the management of OHVs. People can engage in non-motorized uses anywhere on public lands, including those within the TMA, unless an area or route is closed for safety or specific resource protection. Therefore, routes that limit motorized vehicle use to official or administrative purposes or otherwise are designated OHV-closed are often open to non-motorized uses, including but not limited to hiking and horseback riding.

2.5 Cross-Country OHV Travel

The 2008 RMP “does not designate any public lands as open for cross-country travel . . .” (BLM 2008b). The 2008 RMP addresses how its OHV-Limited area designation restricts cross-country travel:

The limited designation in the Approved RMP replaces the large amount of area currently available for cross country travel within the PFO. As a result, the Approved RMP provides a substantial amount of protection to natural (vegetation, soils, scenery, riparian, and wildlife), cultural and paleontological resources by essentially eliminating cross-country travel which is detrimental to these resources. The Approved RMP allows for OHV access and opportunities within the limited designation while still providing protection for sensitive resources and non-motorized recreation users. (BLM 2008b)

2.6 Public Land Access

2.6.1 Introduction

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

2.6.2 Access Routes and Lands from which Access Originates

Interstate 70 (forming the northern boundary of the TMA) and State Highway 24 (forming the western boundary of the TMA) provide major access to and within the TMA. Additional access to the TMA exists via native-surfaced roads crossing the northern, western, and southern boundaries of the TMA. Several of these routes are public and maintained. The TMA has little access from the east where it is bounded by the Green River. Access within the vast majority of the TMA is via routes on BLM or state lands, though some routes provide access from a notable portion of private land in the northeastern part of the TMA. In areas where BLM-administered routes cross private lands, access into the TMA from these routes is not ensured for the long-term, unless the BLM acquires legal permission across these lands. TMP route designations do not apply to private property. Access across private lands in the TMA is a concern for the public and for the BLM’s management of adjacent public lands. The BLM may work to acquire easements from willing landowners to secure access across these lands. To avoid new ground disturbance and impacts to resources, the BLM may encourage use of existing roads in all ROWs issued to access private land.

2.6.3 Public Access Guidance from the 2008 RMP

Table 2.3 below provides examples of some 2008 RMP goals, objectives, and management decisions that are more directly related to public land access than others. However, various 2008 RMP statements can relate to public access in some manner, and the list in Table 2.3 is not comprehensive. A complete list of lands and realty management statements can be found on pages 115 to 122 of the 2008 RMP.

Table 2.3: 2008 RMP Public Land Access-Related Goals, Objectives, and Management Decisions (BLM 2008b)

Goals	
•	Make public lands available through ROWs or leases for such purposes as transportation routes, utilities, transmission lines, and communication sites, in coordination with other resource goals.
Objectives	
•	Develop and maintain a land-ownership pattern that will provide better access for managing and protecting public lands.
•	Maximize appropriate disposal actions to help solve problems related to intermixed landownership patterns.
•	Maintain availability of public lands to meet the habitation, cultivation, trade, mineral development, recreation, and manufacturing needs of external customers and the general public.
•	Maintain and acquire public access to meet resource management needs.
Management Decisions	
LAR-4	Use access or conservation easements to better manage public lands.
LAR-9	Give land exchanges with the State of Utah priority consideration to resolve inholdings issues for the following reasons: <ul style="list-style-type: none"> • A significant number of State land sections administered by SITLA are scattered throughout the PFO. Many of these State lands are inholdings located within designated resource management areas identified in this RMP. SITLA has indicated its desire to exchange SITLA lands within these BLM management areas for BLM-administered lands elsewhere. • The BLM recognizes the opportunity for mutually beneficial land tenure adjustments and will apply the RMP land tenure adjustment criteria. • For legislative land tenure adjustments, all appropriate procedures will be followed consistent with the authorizing legislation.
LAR-11	EXCERPT FROM LAR-11: Consider land ownership changes on lands not specifically identified in the RMP for disposal or acquisition if the changes are in accordance with resource management objectives and other RMP decisions, determined to be in the public interest, and will accomplish one or more of the following criteria: <ul style="list-style-type: none"> • The changes ensure public access to lands in areas where access is needed and cannot otherwise be obtained.

Note: In this guide, 2008 RMP details on public access for the purposes of roadside camping and big game retrieval can be found in Section 10 and Section 11, respectively.

3. IMPLEMENTATION

3.1 Introduction

This TMP Implementation Guide’s primary purposes are to implement the designations in the adopted San Rafael Desert TMP and to create a management framework that allows for current and future user needs while ensuring the protection of resources and reducing or preventing user conflicts. The implementation strategies in this section are expected to assist in achieving these purposes.

3.2 Implementation Strategy and Priorities

3.2.1 Priority of Implementation Actions

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

Monitoring, adaptive management, and budget limitations can affect the BLM's implementation priorities and timeline of completion. When selecting areas/routes for TMP implementation, priorities will be assigned using the five factors listed below. The highest priority for implementation will be given to areas/routes for which all five factors apply:

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

Actions described below may be done concurrently, combined, or conducted in the order in which they are funded. The BLM may attempt to complete implementation in the order shown with heightened priority acknowledged for special emphasis areas such as special designations, areas with sensitive resources, and areas of intensive use (see Section 1.2 for a listing of special emphasis areas in the TMA). The following list indicates the BLM's San Rafael Desert TMP implementation actions and their general/current order of priority:

- 1) Continue public education and outreach efforts. Distribute public access maps and informational brochures of the designated route network in print and electronic (web-based) formats.
- 2) Sign the open route network to make open routes more apparent and attractive than closed routes. Pursue funding for materials and staff needed to implement route and transportation facility signing efforts.
- 3) Conduct maintenance as appropriate on the designated transportation system.
- 4) Establish route closures and assess restoration needs based on inventory and monitoring. Pursue funding for route closure and reclamation if necessary; then begin reclamation of closed routes.
- 5) Establish or maintain partnerships with existing local groups and clubs and local, county, State, and tribal government organizations. As needed and when possible, recruit and train volunteers to establish monitoring patrols and place route markers to augment PFO efforts.
- 6) Install informational kiosks and signs. Maintain and upgrade existing kiosk boards as necessary.
- 7) Monitor compliance with the TMP route network designations, including the route network markers.

8) Make changes to the route network and adjust management strategies as necessary.

Past agency experience gives insight into effective implementation actions as well as the order in which they best occur. The successful implementation of the TMP may proceed in the order listed in Table 3.1 (below). Table 3.1 shows phased prioritization hierarchies.

Table 3.1: TMP Implementation Priorities

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

Phase	Task	Implementation Notes
Phase II	Take actions to reclaim “Closed and Decommissioned” travel routes that continue to receive vehicle traffic.	<i>Timely reclamation of such routes would reduce the potential for continued use of those routes.</i>
Phase II	Update travel network maps and re-publish as necessary.	
All Phases of Plan	Monitor and maintain the open route network markers based on direction in this guide’s sign plan.	
Phase II or III	Install bulletin boards/kiosks at primary portals to public lands and where needed based on monitoring.	<i>Only install at non-portal sites if sites that require additional visitor information have been identified through monitoring.</i>
Phase III	Explore options for completing a visitor survey for each TMA.	

3.2.2 Funding Strategy

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

3.3 Education and Outreach

3.3.1 Introduction

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

3.3.2 Objectives

The main education objectives for the San Rafael Desert TMP are to attain voluntary compliance with route designations and closures and reduce conflicts among public land users. Ensuring compliance with route designations will promote the safety of public land users, facilitate resource protection by discouraging the proliferation of unauthorized routes, and help achieve other identified objectives.

The outreach initiative will promote respect for public, private, and state trust land by providing information on access to public lands, by encouraging users to obtain permission from

landowners if traveling across private or state trust lands, and by specifying where to get additional information and maps. Target messages or themes for this educational effort include:

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

3.3.3 Outreach Strategies

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

- Kiosks and interpretive signage
- Visitor center displays
- In-person public presentations
- Paper and electronic format maps available to the public
 - General visitor map of designated route network (must follow mapping standards of the BLM's *Publication Standards Manual Handbook* [H-1553]).
 - Special area maps
- Website/electronic media
 - Georeferenced PDF maps for viewing on portable electronic devices
 - ArcGIS Online map server
 - Google Earth KML/KMZ files
 - Universal GPS files (GPX) for use with GPS units
 - GPS-compatible route and basemap data loaded on memory cards for sale online and/or at appropriate BLM offices and visitor centers
- Social Media

Signs are one of the most visible mediums used to convey information about the BLM and are often the only formal contact the public has with the BLM. Appropriate, consistent signing that conforms to national standards will help ensure a safe and enjoyable visit to public lands. For more specifics on signage, see this guide's sign plan (section 3.4).

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

information about public land values and user ethics into the terms and conditions of permits and land-use authorizations to reach a wider audience.

3.3.4 Partnerships

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

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

3.4 Sign Plan

Signing is a key element in implementing comprehensive travel and transportation plans on the ground. The BLM will use discretion and professional judgment to select the best signing methods for each situation using the guidance set forth in the Sign Plan, Appendix 6, and may develop more detailed, area-specific plans as needed. The sign component of this guide is intentionally broad in scope. Rather than addressing specific sign needs, requirements, or locations, it establishes sign standards and guidelines for implementation and management of TMP objectives. This is not a static implementation plan; it may be modified as new signing needs are identified. Additional details for signs on BLM lands (installation, ordering, etc.) can be found in the BLM's 2016 National Sign Handbook (BLM 2016b) and the Federal Highway Administration's Manual on Uniform Traffic Control Devices, which is also known as the MUTCD (FHWA 2019).

3.5 Maintenance and Engineering

3.5.1 Overview

This section covers maintenance and engineering considerations for the TMA route network. The "Route-by-Route Implementation Details" table presented in Appendix 5 shows the maintenance and engineering-related implementation details for routes in the network at the time the TMP is approved. These routes should be added to the Ground Transportation Linear Feature (GTLF) dataset, which is the most up-to-date dataset for Utah BLM, and updates in the route network in GTLF will serve as updates to the TMP.

The routes should also be included in the Facility Asset Management System (FAMS). Each route in the Appendix 5 table will have a FAMS route number, a primary route management objective, a functional classification, a FAMS asset type, maintenance intensity, FAMS inclusion/nomination status, and FLTP and FLAP eligibility status. More details on these implementation data types are provided later in this section.

Route maintenance on BLM lands can include general grading and shaping of route surfaces, maintenance and installation of water control structures, placement of gravel surfacing, washout

repairs or realignment, etc. The BLM will maintain roads on public lands in the TMA as specified by maintenance intensities, and condition assessment results that indicate a need for additional maintenance.

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

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

Standards for design, construction, and maintenance of roads and trails within the network should follow BLM policy found in the following manuals and handbooks:

- MS 9113 - Roads (BLM 2015)
- H-9113-1 Road Design (BLM 2011)
- H 9113-2 Roads National Inventory and Condition Assessment Guidance & Instructions (2015a)
- H-9115-1 Primitive Roads Design (BLM 2012b)
- H-9115-2 Primitive Roads Inventory and Condition Assessment Guidance & Instructions (BLM 2012c)

3.5.2 Engineering Interface

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

3.5.2.1 Routes in the Facility Asset Management System (FAMS)

The FAMS is the BLM's official database for the management of transportation system assets and facilities. As such, it plays a vital role in planning for the management and stewardship of BLM assets. All appropriate designated roads, primitive roads, and trails within the travel network addressed in this TMP are classified as transportation assets in the FAMS and will be tracked in the FAMS as well as the Ground Transportation Linear Feature (GTLF) geospatial database.

3.5.2.2 Routes in the Federal Lands Transportation Program (FLTP)

The BLM project lead must coordinate with BLM engineering staff to determine which routes are eligible for FLTP status. FLTP-eligible routes are:

- Owned and maintained by the federal government
- Important and highly valued by the BLM
- Located on, adjacent to, or provide access to federal lands
- Included in the national Federal Lands Transportation Facilities (FLTF) inventory

Routes in the FLTP are also intended to provide access to high-use recreation locations and federal economic generators. Documenting FLTP eligibility for FLTP funding is a requirement for travel management plans (TMPs) in the 2016 BLM travel management manual (BLM 2016c).

3.5.2.3 Route Functional Classifications

The BLM uses three functional classifications (collector, local, and resource) to categorize its roads.¹⁶ These classifications reflect the area served, type and volume of traffic, and maintenance standards. These classifications are described in the subsections below, with text taken from the BLM roads manual (BLM 2015).

Collector Roads: “These BLM roads normally provide primary access to large blocks of land and connect with or are extensions of a public road system. Collector roads accommodate mixed traffic and serve many uses. They generally receive the highest volume of traffic of all the roads in the Bureau system. User cost, safety, comfort, and travel time are primary road management considerations. Collector roads usually require application of the highest standards used by the Bureau. As a result, they have the potential for creating substantial environmental impacts and often require complex mitigation procedures.”

Local Roads: “These BLM roads normally serve a smaller area than collectors and connect to collectors or public road systems. Local roads receive lower volumes, carry fewer traffic types, and generally serve fewer uses. User cost, comfort, and travel time are secondary to construction and maintenance cost considerations. Low volume local roads in mountainous terrain, where operating speed is reduced by effect of terrain, may be single lane roads with turnouts. Environmental impacts are reduced as steeper grades, sharper curves, and lower design speeds than would be permissible on collector roads are allowable.”

Resource Roads: “These BLM roads normally are spur roads that provide point access and connect to local or collector roads. They carry very low volume and accommodate only one or two types of use. Use restrictions are applied to prevent conflicts between users needing the road and users attracted to the road. The location and design of these roads are governed by environmental compatibility and minimizing Bureau [BLM] costs, with minimal consideration for user cost, comfort, or travel time.” (BLM 2015)

¹⁶ Not all routes are considered “roads” in the context of BLM travel management. For example, a trail is a route but not a road. Therefore, functional classifications only pertain to roads and primitive roads. Most of the BLM-managed routes in the TMA function as resource roads.

3.5.2.4 Primary Route Management Objectives

The primary route management objective for each route influences the type of maintenance and engineering to be applied to it. The BLM's GTLF guidelines state that the primary route management objective is "the BLM's reason for the route. [It] summarizes multiple reasons into a single presentable statement" (BLM 2014d). According to the BLM travel management manual, primary route management objectives "should reflect management area direction, including desired future conditions, uses, recreational outcomes and settings, as well as TMP objectives" (BLM 2016c). According to the BLM's GTLF guidelines (BLM 2014d), there are three possible individual route management objectives, which are listed and defined below:

- *Access* - Access to specific location for specific task/project.
- *Connectivity* - Primary objective is travel between 2+ other routes.
- *Experience* - Primary objective is to provide for recreational experience.

3.5.2.5 Engineering and Maintenance Best Management Practices (BMPs) and Standard Operating Procedures (SOPs)

The following engineering-specific BMPs and SOPs will be applied in the TMA:

Best Management Practices

- Road Construction
 - Construct culverts, cross drains, or other water control devices to prevent erosion.
 - Locate and construct roads to minimize excavation and follow existing ground contours as closely as possible.
- Road Drainage
 - Provide adequate drainage from the surface of all roads by using out sloped or crowned roads, drain dips, or in sloped roads with ditches and cross-drains or relief culverts.
 - Vary road grades to reduce concentrated flow in ditches and culverts and on fill slopes and road surfaces.
 - Size drainage structures appropriately to handle anticipated flow during normal runoff or storms.
 - Design relief culverts or roadside ditches to prevent fill erosion or direct discharge of sediment into streams.
 - Prevent cross drains, culverts, water bars, dips, and other drainage structures from discharging onto erodible soils or fill slopes without outfall protection.
 - Plan natural road cross-drainage by in-sloping and using relief culverts or out-sloping and by grade changes. Plan for effective well-placed dips or water bars.
 - Design roads for minimal disruption of drainage patterns.
- Road Maintenance
 - Maintain erosion control features through periodic inspection and maintenance, including cleaning drainage dips and cross-drains, repairing ditches, marking culvert inlets to aid in location, and clearing debris from catch basins and culverts.
 - Avoid using roads during wet periods if such use would damage the road drainage features.
 - Grade road surfaces only as often as necessary to maintain a stable running surface and to retain the original surface drainage.

- Conduct spot maintenance on primitive roads to correct safety issues, conserve resources, or to maintain desired recreation experiences. In most cases, grading the full length of primitive roads is not required or desired.
- Route maintenance will occur within the route prism.
- Design features for T and E species and Sensitive plant habitat
 - All efforts will be made to avoid disturbance in potential habitat areas.
 - Maintenance activities will occur outside the flowering period.
 - Dust will be suppressed using water.
 - If disturbance outside the existing travel surface is required for maintenance activities, then surveys will be conducted within suitable habitat. If plants are located, then appropriate consultation with FWS would be initiated.
- General
 - Ensure that road specifications and plans are consistent with good safety practices.
 - Design, construction, and maintenance of roads, primitive roads, and trails should comply with guidelines identified in the BLM roads manual (BLM 2015), the BLM primitive roads manual (BLM 2012d), the U.S. Forest Service's Trail Construction and Maintenance Notebook (USFS 2007), Guidelines for a Quality [Mountain Bike] Trail Experience (BLM and IMBA 2017), and the National Off-Highway Vehicle Conservation Council's Great Trails resource guide (NOHVCC 2015).
 - Emphasize the use of existing roads (through continued use or reconstruction) to minimize new road construction.
 - Adapt plans to the soils and terrain to minimize disturbance and damage to soil productivity, vegetation, water quality, and wildlife habitat.
 - Implement mitigation techniques when designing and implementing the route system.

Standard Operating Procedures

- Standards and guidelines should be followed per BLM Manuals 9113 (BLM 2015), 9114, and 9115 (BLM 2012d) for BLM road, trail and primitive road maintenance, new construction, or reconstruction.
- The standards and guidelines for primitive roads should be based on the functional requirements of the various types of recreational motorized users.
- The BLM should not develop, endorse or publish road or trail ratings. The BLM should describe the physical aspects of a road, primitive road, or trail and/or recreation site as necessary to avoid visitor inconvenience and align visitor expectations with existing conditions.
- Maintenance should be completed only to the identified maintenance intensity level in support of resource protection, delivery of services to the public, and public safety.
- Maintenance standards for each designated route should be documented, and route modifications will be identified and recommended if necessary.
- Maintenance of routes may be done to minimize soil erosion and other resource degradation. This maintenance should be done on a case-by-case basis, depending upon annual maintenance funding.

- Once the number and type of barriers is determined, maintenance procedures for physical barriers should be developed and tracked manually or systematically by a system such as the FAMS.

3.5.3 Maintenance Intensities

Routes in the TMA network may be maintained in accordance with assigned maintenance intensities and in consideration of resource issues. Maintenance intensities provide guidance for the minimum standards of care for the annual maintenance of BLM routes based on identified management objectives (e.g., natural, cultural, recreation setting, and visual). Each maintenance intensity category provides operational guidance to field personnel on the appropriate intensity, frequency, location, and type of maintenance activities that should be undertaken to keep routes in acceptable condition. They do not describe route geometry, type, types of use, or other physical or managerial characteristics of routes.

The aim of BLM route maintenance in the TMA is to sustain navigability for network roads, primitive roads, and trails without substantially changing routes’ recreational experiences. The top priorities are to protect visitors, reduce hazards, and prevent the degradation of resources.

Based on resource management needs and functional classifications, each route in the TMA will be assigned a maintenance intensity level, which provides the basis for route maintenance in the BLM FAMS database.

Table 3.2, below, shows descriptions of maintenance intensities. The table’s maintenance intensity descriptions are derived from the first appendix item of the BLM roads manual (BLM 2015). Details on the objectives and funding levels for reach maintenance intensity are also in the BLM’s roads manual.¹⁷ Most primitive roads are likely to have low maintenance intensities but should be managed to protect sensitive resources and provide for an acceptable level of health and safety risk given the type of use. Maintenance intensity levels provide the basis for performing maintenance and updating the BLM GTLF and FAMS database for the TMA.

Table 3.2: Maintenance Intensities Under Chosen Alternative

Maintenance Intensity	Descriptions of Routes Under Each Intensity Level
Level 0	Existing routes that would no longer be maintained or declared as routes. Routes identified for removal from the Transportation System entirely.
Level 1	Routes where minimal (low-intensity) maintenance is required to protect 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.

¹⁷ The BLM roads manual referenced above mentions maintenance intensity levels 2 and 4, which are not in the table below because they are “Reserved for Possible Future Use.”

Maintenance Intensity	Descriptions of Routes Under Each Intensity Level
Level 5	Routes for high (maximum) maintenance because of year-round needs, high-volume traffic, or significant use. Also may include routes identified through management objectives as requiring high intensities of maintenance or to be maintained open year-round.

Upgrading a road’s surface, width, or permanently raising the maintenance intensity level on a specific route are considered (like a new route) to be changes to the network, and therefore trigger the need to consider if additional environmental analysis is required.

3.5.4 Transportation Facilities

This TMP does not identify specific transportation facilities that may need improvement or development, although these needs may be considered as future needs arise. Any future agency actions involving facilities would be addressed in area-specific activity-level or project-level plans, which would include travel-related decisions. Examples of such facilities could include campsites, staging areas, protective fencing, barriers, information kiosks, administrative gates, trailheads, and non-motorized trails. These site-specific projects would be subject to review as appropriate under applicable laws and would be developed to avoid or mitigate impacts to natural resources or significant cultural resources. After development, these sites would be incorporated into this TMP and considered part of the travel network.

3.5.5 New Route Development

The addition of new routes is part of the operation and management of the overall travel network. New route development may be prudent, depending on the situation. For example, resource protection or administrative concerns might require the relocation of an existing route. The BLM or members of the public might also request new routes to improve or enhance access or experiences (e.g., creating a travel loop or non-motorized trails). Engineering staff will be involved early in the process of planning, locating, designing, constructing, and choosing and applying BMPs associated with new routes. New routes and changes to the network require application of appropriate NEPA review.

New routes may be proposed through site-specific project plans, permits, or ROW requests. The route evaluation process and NEPA review (both of which may be done concurrently) must occur prior to the implementation or construction of a new route. If authorized, new routes and any associated ROWs would become part of the designated transportation system; closed routes would be removed from the transportation system. The BLM’s travel management manual (BLM 2016c) provides broad guidelines on how to appropriately add new routes to a BLM travel network.

All new roads, primitive roads, and trails would meet the standards for design, construction, and maintenance found in BLM manuals and handbooks (e.g., “Appendix 8: Trail Planning and Standards” in the BLM travel management handbook (BLM 2012a)). Among other guidance, all new TMA routes would meet the standards for design, construction, and maintenance found in the BLM’s Roads Design Handbook (BLM 2011) and Primitive Roads Design Handbook

(2012b). Such guidance provides details on specifics such as degree of curvature, sight distance, alignment, etc.

3.5.6 Route Relocation and Realignment

Route widening, realignments, or travel surface upgrades can occur if:

- Appropriately addressed by TMP EA or other NEPA.
- Needed to achieve route standards or management objectives.
- Needed for public safety.
- Done in accordance with TMA route maintenance and construction standards.

3.5.7 Processing of Proposed Route Changes

The process of adding new routes (OHV or non-motorized) to the designated route network and implementing other route changes require appropriate NEPA review. All proposed route changes should be processed as follows:

- Route locations would, at a minimum, be mapped or located using accepted GPS devices and presented to the BLM (if proposed by a third party) for consideration. Locations of route proposals off designated OHV routes would be documented and mapped using non-OHV methods.
- The BLM may consider opening an administrative route to public use.
- Route proposals submitted to the BLM shall include a description of the route (including its proposed width), its proposed use(s) (including expected traffic and design vehicle), and rationale for its need.
- The proposed location shall be staked and flagged or otherwise identified for on-the-ground review by resource specialists.
- The route location shall be analyzed for potential conflicts, such as (but not limited to): wildlife habitat and movement, adverse effects to NRHP-eligible cultural resources, visual resources, other recreation uses, mining claims or leases, grazing facilities, ROWs, public safety, and proximity to other jurisdictions (such as private land). A structured process will be used to evaluate and document potential route conditions.
- The conflict assessment may lead to development of mitigation actions or alternative locations or designs.
- An NEPA review would be conducted to determine the environmental effects of the proposed route, any reasonable alternatives, and recommended mitigation.
- A decision would be issued by the field manager based on 2008 RMP conformance, resource objectives, and environmental impacts.
- If the decision is to approve the addition of the route, this TMP would be updated accordingly.
- The BLM may require that a licensed surveyor provide a cadastral survey (to be reviewed by a BLM cadastral surveyor) of a route prior to issuance of a ROW authorization.

3.6 Enforcement

3.6.1 Overview

Law enforcement coverage in the TMA is currently provided by BLM law enforcement and local sheriff and/or police departments. The BLM maintains the authority to temporarily, permanently,

partially, or completely suspend any activity based on safety issues or unacceptable resource impacts. Enforcement actions typically occur in response to complaints, and patrols are conducted on a periodic basis, depending on other priorities. Typical law enforcement concerns related to public use in the TMA include: route proliferation, dumping, vandalism, theft of government property, littering, interfering with livestock operations, medical emergencies, search-and-rescue operations, illegal removal of natural resources, unauthorized cross-country OHV use, firearms violations, and driving under the influence of alcohol or drugs. State vehicle laws will be applied to OHV use where applicable. The following measures are important for successful law enforcement in the TMA:

- Increase the presence of BLM and partner agency law enforcement.
- Improve and expand interagency cooperation.
- Increase public education efforts to promote awareness of and voluntary compliance with use restrictions and regulations through information posted on handouts, kiosks, and websites, etc.
- Prioritize how to use limited law enforcement resources to the greatest effect:
 - Concentrate law enforcement efforts during high-use periods such as weekends and holidays.
 - Focus targeted enforcement in the most high-use areas.
- Support volunteer efforts to educate the public on rules and proper land use etiquette, such as NGOs leading Leave No Trace seminars.

3.6.2 Regulations to be Enforced

The public land regulations described in 43 CFR 8340 (GPO 2016), 43 CFR 8360 (GPO 2009a), and 43 CFR 9268.3 (GPO 2001) will be enforced to implement travel management and route designations within the TMA. These regulations will be enforced by BLM law enforcement officers to protect public safety and resources. They may be supplemented as deemed necessary by Supplementary Rules, which may be established pursuant 43 CFR 8360 under a separate action to implement use restrictions identified in RMP decisions. State of Utah motor vehicle laws and regulations, including OHV regulations, apply on BLM-administered lands in the TMA and will continue to be enforced.

3.6.3 Patrols

In addition to responding to complaints emergency situations, and where monitoring has found user conflicts or resource concerns BLM enforcement officers and field staff will focus patrols on those routes to detect and deter current and future illegal activity, check compliance with route designations, and educate visitors about BLM, state, and federal laws and regulations. During regular patrols, enforcement officers and field staff may document observed OHV impacts to resources as appropriate or as a general component of monitoring. Continual, highly visible patrols by BLM staff would maintain an authoritative presence in the field.

Personnel from partner agencies, such as the Utah Division of Wildlife Resources (UDWR) Emery County Sheriff's Department, and the Utah Highway Patrol may also assist BLM staff with law enforcement duties on BLM-administered lands in the TMA. Local police departments may patrol in wildland-urban interface areas. Coordinated interagency efforts may be undertaken to provide an official presence during times of peak use or to supplement ongoing resource protection-related operations.

3.7 Supplementary Rules

Supplementary Rules can be established where current regulations (including route designations) do not provide adequate public safety or resource protection. See 43 CFR 8365.1-6 (GPO 2009b) for the supplementary rulemaking process. Speed limits would be an example of supplementary rules within the TMA.

4. LONG-TERM MONITORING PROTOCOL FOR OHV IMPACTS AND OTHER ITEMS

4.1 Overview

4.1.1 Introduction and Purpose of Monitoring

Monitoring is an important part of ensuring proper TMP implementation. Monitoring efforts will help determine the effectiveness of route management and inform BLM on issues that may need to be addressed with new management decisions, implementation planning or focused implementation efforts. The EA identified a number of important resource issues at the heart of BLM's commitment to provide for multiple land uses while protecting sensitive cultural and natural resources. The following issues are of particular importance to the TMA:

- Impacts of OHV travel on known cultural resource sites
- Soil erosion, and its resulting impacts on vegetation
- OHV-related disturbances of special status species plant habitat
- OHV-related disturbances on special status species wildlife habitat
- Impacts from OHV travel on the defining characteristics of lands with wilderness characteristics and other special management area designations
- User conflicts within the TMA
- Route proliferation within the TMA.

As required in 43 CFR 8342.3 (“Designation changes”), “The authorized officer shall monitor effects of the use of off-road vehicles. Based on information so obtained, and whenever the authorized officer deems it necessary to carry out the objectives of this part, designations may be amended, revised, revoked, or other actions taken pursuant to the regulations in this part” (GPO 2016). In the broadest sense, monitoring helps to determine if adequate progress is being made toward management objectives. Among other things, this means that the monitoring program will be used to determine:

- If resource and resource use objectives are being met.
- Visitor satisfaction.
- Use patterns and volumes.
- Condition of roads and trails, the condition of public use areas, and compliance with route designations and use restrictions.
- Effectiveness of cross-jurisdictional enforcement.

4.1.2 Where to Find Monitoring Guidance

Monitoring requirements can be found in the Biological Opinion, Historic Properties Treatment Plan (HPTP) and specific route evaluation reports. Additional strategic monitoring will occur as part of ongoing monitoring and other resource monitoring (such as wilderness monitoring, lands with wilderness character inventory, visual resource inventory, sensitive species monitoring, range management monitoring, new project site consideration etc.). As noted in section 4.2.6.2 the BLM will compile specific monitoring requirements from the Biological Opinion, HPTP and specific route evaluation reports into a checklist so that those monitoring requirements can be tracked and documented.

4.1.3 Who Conducts Monitoring

An effective monitoring program is dependent on establishing a network of monitoring personnel who work with the BLM to report issues or concerns that they encounter while performing their normal daily activities. Monitoring may be conducted by BLM staff, UDWR personnel, commercial Special Recreation Permit (SRP) holders, grazing permittees, and other partners as approved/authorized by the BLM. For example, the Utah Conservation Corps assisted the BLM with the baseline monitoring (BLM 2019a).

4.1.4 Baseline Monitoring Data

In compliance with the 2017 Settlement Agreement, the PFO assembled the San Rafael Desert Travel Management Plan Baseline Monitoring Report. This report can be found at: [Baseline monitoring report](#).

Assembling this report involved collecting information on visually apparent unauthorized surface disturbances off routes as well as visually apparent damage to public lands resources caused by OHV use within the Horseshoe Canyon North WSA (recently reclassified and expanded as the Labyrinth Canyon Wilderness) and lands with BLM-inventoried wilderness characteristics. The baseline monitoring data was used to help inform route decisions within the TMP. See Appendix 2 for more details on baseline monitoring report requirements associated with the 2017 Settlement Agreement.

4.2 Types of Monitoring

4.2.1 Introduction

There are three types of monitoring detailed in this guide: implementation, effectiveness, and resource monitoring. Implementation and effectiveness monitoring assess the effectiveness of management actions. Resource monitoring documents how various indicators of natural resources change over time.

4.2.2 Implementation Monitoring

Implementation monitoring is the most basic type of monitoring, and simply determines whether management actions in the TMP have been implemented in the manners prescribed by applicable planning documents. Implementation monitoring documents the BLM's progress toward full implementation of land use plan (i.e., 2008 RMP) decisions. There are no specific thresholds or indicators required for this type of monitoring.

4.2.3 Effectiveness Monitoring

Effectiveness monitoring is used to determine if TMP implementation activities have achieved 2008 RMP goals and objectives. Effectiveness monitoring results are used to evaluate implementation progress and the effectiveness of the TMP in achieving desired outcomes and conditions. If adverse impacts are discovered, effectiveness monitoring results will also be used to identify adaptive management measures. Effectiveness monitoring will evaluate route conditions, public safety issues, and changes in visitor use patterns/preferences. Effectiveness monitoring may also quantify OHV user compliance.

Effectiveness monitoring asks the following question: Was an activity successful in achieving its objective? Effectiveness monitoring requires knowledge of the objectives established in the 2008 RMP as well as indicators that can be measured. To see the 2008 RMP's travel management-related goals, objectives, and management decisions, see Appendix 1 of this guide. Indicators are established by technical specialists to address specific questions and avoid unnecessary data collection. Effectiveness is measured against the benchmark of achieving the goals and objectives established by the 2008 RMP, which may include regulated standards for resources. Effectiveness monitoring for the route network will be conducted by staff, volunteers, users, and partners *as time and funding permit*; it may include the following elements:

- Visually document implementation or establishment of closure practices (signs, gates, berms, rocks, etc.) or road decommissioning practices and monitor effectiveness of closure. Establish photo-monitoring points to monitor long-term effectiveness of closing/decommissioning routes.
- Determine the level of OHV use across the landscape using trail counters and aerial photos over time. Traffic counters may be employed to determine levels of use on selected routes.
- Identify route proliferation, unauthorized route creation, route conditions, recreation conflicts, and resource damage compared to the Baseline Study. Measure illegal off-trail and off-road travel as linear disturbances or as area impacts, depending on the level and type of use that occurs.
- Monitor litter/trash.
- Monitor reclamation project success.
- Initiate and maintain collaborative partnerships among government agencies, local governments, business communities, volunteers, user groups, stakeholders, educational institutions, individuals, and the private sector to achieve recreation management objectives through BLM-developed monitoring techniques.
- Quantify OHV user compliance and evaluate route conditions, public safety, and changes in visitor preferences and use patterns. It may also help to identify adaptive measures as adverse impacts are discovered.
- Administer a survey on recreation demand, preferences, uses, satisfaction, and information needs in the TMA. This should be done as soon as possible and map publications updated periodically. Work with partners such as universities and user groups to conduct the surveys. Base specific schedule of surveys on TMA conditions and available resources.
- Acquire visitor feedback to monitor whether TMA BLM lands have been clearly mapped and signed for the public. This could be done as part of the survey efforts described above.

- Pay attention to recreational groups, records of field contacts, written trail register comments, and public phone calls to the PFO as part of monitoring the effectiveness of travel management in reducing conflict between different types of users.
- Monitor signing effectiveness through field visits and consideration of amounts of maintenance required.
- Assess primitive road and trail conditions.
- Assess indicators of potential recreation impact issues (e.g., number of new bare soil areas attributable to visitor use, number of campfire pits, additional litter or trash along primitive roads, etc.).

4.2.4 Resource Monitoring

Resource monitoring documents how implementation of the TMP influences natural resources over time. Validating management actions' effects on natural resources is more complex than determining the result of compliance or effectiveness monitoring.

Resource monitoring (as well as management) will be adaptive. Monitoring protocols or techniques may be adjusted as new methods are developed or if it is discovered that current monitoring is not meeting management information needs. Some routes with "Open with Management" and "Limited with Management" designations have had monitoring specified for a variety of resources, and those monitoring protocols may be implemented (subject to funding and available resources). Resource monitoring may be accomplished through standard field office protocols in accordance with the 2008 RMP (see below).

4.2.5 TMA-Specific Monitoring

Monitoring the TMP route network could include observation and recording of conditions associated with special resources and indicators specific to the TMA. When monitoring indicates that use of a designated route is resulting in unacceptable resource degradation, it could be considered for redesign, closure, or decommissioning to minimize or eliminate adverse impacts. Appendix R-2 in the 2008 RMP includes a table of specific monitoring guidelines applicable to various resources/uses. Although various resources/uses could somehow be impacted by travel management, Appendix R-2 includes specific methodologies for OHVs and transportation (see table below).

Table 4.1: 2008 RMP Travel Management-Related Monitoring Methodologies (BLM 2008b)

Resource	Suggested Monitoring and Methodology
OHV	<p>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.</p> <p>Evaluate trail impacts on natural 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.</p> <p>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.</p>
Transportation	<p>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.</p>

4.2.6 Field Specific Monitoring Protocols

This section describes how implementation, effectiveness and resource monitoring will be accomplished.

4.2.6.1 Ad hoc monitoring

BLM staff will be briefed on the key issues addressed in the TMP EA and alerted to informally monitor for related resource impacts as they go about their daily work within the TMA. They will be directed to pay close attention to any unauthorized off-route use and apparent user conflicts. During ad hoc monitoring BLM staff may using the “Motor Vehicle Impact Monitoring Protocol,” similar protocol, or may provide a description of the location and impacts to the appropriate resource staff (Field Manager, Assistant Field Manager, Outdoor Recreation Planner, Field Technician, etc.).

Ad hoc monitoring results will be used to help the BLM continually adapt its strategic monitoring efforts including focusing law enforcement patrol to particular areas if needed. Ad hoc monitoring may also include input from authorized users and members of the public who should be encouraged to supply such information. Ad hoc monitoring may also include general consideration of the route itself and maintenance, signage or other needs, that should similarly be passed to appropriate BLM staff.

4.2.6.2 Strategic monitoring

The BLM will conduct strategic monitoring based on requirements from the Biological Opinion, Historic Properties Treatment Plan (HPTP) and specific route evaluation reports. Additional strategic monitoring will occur as part of ongoing monitoring and other resource monitoring (such as wilderness monitoring, lands with wilderness character inventory, visual resource inventory, sensitive species monitoring, range management monitoring, new project site consideration etc.).

The BLM will compile specific monitoring requirements from the Biological Opinion, HPTP and specific route evaluation reports into a checklist so that those monitoring requirements can be tracked and documented.

Additionally, the BLM will strive to annually monitor 20 routes in the TMA using the “Motor Vehicle Impact Monitoring Protocol” or similar protocol. Results of this off-route use specific monitoring will be presented to the Field Manager in an annual memorandum or report and will be used to identify areas of particular resource concern or that may require more focused monitoring needs.

4.3 Adaptive Management

4.3.1 Overview of Adaptive Management

According to the BLM, adaptive management is “a tool designed after the scientific research process. . . [It] requires a measurable objective, monitoring to determine the effectiveness of the management practices in achieving the objective, evaluation to determine if the objective is being reached, and adaptation based on the results” (BLM 2014a). A similar definition is found in 43 CFR 46.30 (GPO 2011). In adaptive management, problems are assessed, designs are formulated to address problems, and then designs are implemented. During/after implementation, monitoring occurs, data gathered during monitoring are evaluated, and management is adjusted based on new findings. However, new problems could arise, or new approaches might be tried after management is adjusted, which could start the cycle over again. Figure 4.1 (below) shows the cycle of adaptive management.

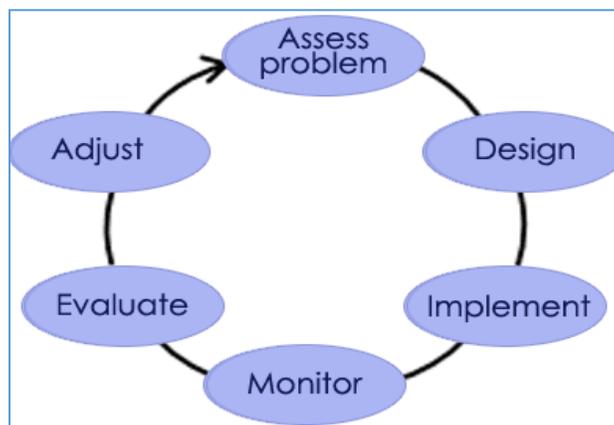


Figure 4.1: Adaptive Management Cycle

4.3.2 Implementing Adaptive Management in the TMA

Some designated routes in the TMA are in or near resources of concern (e.g., special status plants or wildlife, highly erosive soils, etc.) and mitigation is highlighted in route evaluation forms. In addition, Appendix 8 details management strategies for habitat evaluations and monitoring within special status species habitat. The BLM should mitigate adverse effects throughout the TMA on a case-by-case basis as directed in the 2008 RMP. For designated routes identified for adaptive management, results from ongoing monitoring and assessment may be used to adjust and improve management decisions over time. For TMA BLM-administered lands, sufficient monitoring must be planned to determine whether adequate progress is being

made toward achieving priority tasks. If progress is insufficient to achieve tasks in a realistic time period, management actions should be revised.

Adaptive management monitoring may be based on limits of acceptable change (LAC) indicators. Below are some examples of LAC indicators/triggers, which may require adjusting the TMP:

- Desired recreation experiences are not being met as determined by surveys, visitor sign-in logs, or other data-gathering processes conducted in the TMA
- Priority or special status species habitat conditions continue in a downward trend as a result of recreation or travel impacts
- Riparian condition trend is not improving as a result of recreation or travel impacts.
- Degradation of Cultural sites and Wilderness Area boundaries

Adaptive management monitoring focuses on changing conditions that could affect route designations. Through adaptive management, the BLM may modify the TMP to respond to a variety of issues or concerns that could arise in the TMA throughout the life of the TMP. Some more general examples of factors that might alter management are listed below:

- Need to create new roads to access private property, mining claims, public utilities, or other needs
- User-created route proliferation
- Listing of additional special status plant and animal species
- Discovery of additional resources
- Availability of funding to manage and operate the travel management network

Applying adaptive management is an essential component of travel planning. Throughout the life of the TMP, the BLM may use adaptive management and rely on monitoring data to improve this plan. Modification actions based on adaptive management may require additional site-specific analysis in accordance with the NEPA.

4.4 Route Designation Changes

The TMP will remain in effect until rescinded or amended. However, monitoring and TMP evaluation may result in proposals to change individual route designations. Any person, organization, or governmental body may propose that any current route designation be changed. Requests to change route designations must be submitted in writing to the PFO manager and will be processed as follows:

- Upon receipt of a route change proposal, it will be reviewed by the Field Manager. The Field Manager will determine whether the proposal has merit. If the request is rejected, a letter will be sent to the requester indicating the reasons for rejection. If accepted, the request will be forwarded to the appropriate PFO staff and reviewed for recommendations as to the appropriateness of the proposal, and levels of required NEPA review and analysis. When accepting a proposal, the Authorized Officer will consider cost recovery.
- Modifications of the road network during implementation of the TMP may require site-specific review as appropriate under applicable laws.

- Modifications and minor realignments, including alignment changes made through implementation actions shall be documented in the official record, kept on file in the PFO, and considered an update to the TMP.

The Authorized Officer has the authority to make final decisions on route changes. A formal decision to accept or reject a specific request for a route change will only be issued appropriate NEPA documentation and evaluation of a proposal's effect on the total travel network.

4.5 Tracking Plan Implementation Progress

According to the BLM travel management manual: "Field offices will track planning and implementation progress using the travel management module in the Recreation Management Information System (RMIS). States will track statewide progress through long-range transportation plans (see section 6.8 [of the travel management manual]) using the BLM state's TTM planning schedule" (BLM 2016c).

5. MITIGATION

Travel management related mitigation is prescribed and executed at multiple levels. First as described in the 2008 RMP, second as a component of selection of a travel network alternative where routes are assigned an OHV designation that considers impacts to resources, routes purpose and need, route redundancy, etc., and third, as specifically prescribed mitigation measures in route evaluation reports. Additional mitigation will also occur as a result of resource monitoring via adaptive management if needed.

5.1 Overview

Emerging issues (related to specific routes and management actions) may be identified through adaptive management monitoring, and mitigation actions may be considered if monitoring reveals that conditions require mitigation. Typical mitigation measures would be the BMPs that respond to identified resource or resource use issues. Monitoring may continue to be done during and after mitigation measure implementation. Some routes with "Open with Management" and "Limited with Management" designations have mitigation specified for a variety of resources. For route-specific mitigation details, see the route reports discussed in Appendix N of the EA as well as Table A3 ("Route-by-Route Monitoring and Mitigation Details") in Appendix 2 of this Implementation Guide.

5.2 Travel Management Mitigations in the 2008 RMP

The 2008 Price RMP provides the following management statements closely tied to travel management mitigation. The list below is not exhaustive, but it is intended to capture the RMP statements most clearly related to travel management-related mitigation.

Table 5.1: 2008 RMP Travel Management-Related Mitigation Guidance (BLM 208b).

Management Decisions	
TRV-4	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.
TRV-5	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.
OHV-2	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.
WL-8	In the design of facilities associated with federal actions, incorporate concepts of habitat fragmentation and design those facilities to minimize the potential for increasing habitat fragmentation. Consider collocation of facilities, including utility corridors and oil and gas wells. Minimize the intrusion in wildlife habitats. 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
FDN-2	Excerpt from this decision: Off-highway/road vehicle use during periods of prolonged dryness could be further restricted; or, if site-specific conditions warrant, closure to OHVs could be implemented to minimize vehicle-induced injury or damage to rangeland and/or woodland resources and to minimize the potential of spark-caused fires.
<p>“OHV Use” section from “Appendix R-5 —Best Management Practices For Raptors And Their Associated Habitats In Utah, August 2006”</p>	
<p>Special Recreation Management Areas (SRMAs) that are developed for OHV use would not be located in areas that have important nesting, roosting, or foraging habitat for raptors. Off highway vehicle use would be limited to designated roads, trails and managed open areas. Lands categorized as “Open” for OHV use should not be in areas important to raptors for nesting, roosting, and foraging When proposals for OHV events are received, the area to be impacted, [they] would be surveyed by a qualified wildlife biologist to determine if the area is utilized by raptors. Potential conflicts would be identified and either avoided or mitigated prior to the issuance of any permit.</p>	

5.3 Route Management Mitigation Actions for Various Conflict or Impact Scenarios

Appendix 7 presents examples of possible route management mitigation actions that could be considered to address potential route-related resource concerns for riparian areas and water quality, wildlife and vegetation, user conflicts, vandalism, etc. The BLM travel management handbook (BLM 2012a) has additional examples of mitigation measures in “Appendix 5: TTM Challenges and Solutions for Recreation/Trail Management.”

6. ROUTE CLOSURES

6.1 Introduction

Under certain circumstances, to protect public health and safety or prevent unnecessary or undue resource degradation due to unforeseen circumstances, routes may need to be closed or restricted. The authority for implementing such closures and restrictions is given in Section 302

of the Federal Lands Policy and Management Act (FLPMA), which requires the Secretary of the Interior to take action to prevent unnecessary or undue degradation of the lands.

The two principal federal regulations for closures and restrictions during TTM are the special rules provided for OHV management in 43 CFR 8341.2 (GPO 2000) and the closures and restrictions for visitor services in 43 CFR 8364.1 (GPO 2004b).

6.2 Closures in General

The 2008 RMP says that “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” (BLM 2008b). 43 CFR 8364.1 regulates the ability of the authorized officer to close or restrict a specific use or uses of the public lands for the protection of persons, property, and resources. Unlike the special rules found in 43 CFR 8341.2, these closure and restriction orders can apply to any transportation mode or activity but require a formal notification process, including Federal Register publication. The use of this authority is limited to two years by policy, but extensions are approved on a case-by-case basis. NEPA compliance is required for use of this authority.

6.3 Emergency Closures

Emergencies are unforeseen events of such severity that they require immediate action to avoid dire consequences. In the event of an emergency, immediate actions (e.g., closures or public land use restrictions) must be taken to prevent or reduce risks to public health or safety, property, or important resources. Section 2.3 of the BLM NEPA handbook (BLM 2008a) defines the following actions as typical emergency situations:

- Cleanup of a hazardous material spill
- Fire suppression activities related to ongoing wildland fires
- Emergency stabilization actions following wildland fires or other disasters

6.4 Temporary Closures

Where OHV activities are causing considerable adverse effects to resources, temporary closures can be implemented under the authority of 43 CFR 8341.2 and 8364.1. The purpose of a temporary closure and restriction is to protect public health and safety or prevent undue or unnecessary resource degradation due to unforeseen circumstances and should not be used in lieu of permanent closures. The BLM’s travel management manual states:

Where off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife *and fisheries* habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas will be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures are implemented to prevent their recurrence (43 CFR 8341.2). (BLM 2016c)

If site, issue, or resource-specific evaluation is handled through the NEPA analysis process associated with either the 2008 RMP or the TMP’s supporting EA, temporary closures and

restrictions exercised under this process may not require further NEPA review. This may include closure of routes or areas.

7. ROUTE DECOMMISSIONING AND RECLAMATION

7.1 Overview

When a closed route is successfully decommissioned and reclaimed, it should blend into the surrounding area. Effective reclamation of closed routes is important for meeting a variety of management objectives, including:

- Attainment and maintenance of physical and social settings that support prescribed recreation opportunities and outcomes in SRMAs.
- Reduced visitor confusion resulting from unmarked non-system routes.
- Increased visitor safety through reclamation or rerouting of unsafe non-system routes.
- Reduced sign installation and maintenance costs associated with un-reclaimed routes slated for reclamation.
- Restored natural appearance of the landscape.
- Protection of natural resources.

See Appendix 3 for details on reclamation methods as well as the routes that are earmarked for reclamation under the chosen alternative. Note that not all routes designated as OHV-closed are scheduled for decommissioning, as they may remain available for other non-OHV uses.

7.2 Priorities

Certain routes slated for reclamation will have a higher implementation priority than others, as determined by BLM's resource specialists. The BLM will prioritize reclamation in special management areas (e.g., SRMAs), special designation areas (e.g., wilderness, LWCs, etc.), and other sensitive areas. In general, initial reclamation efforts may focus on the following priority types first, in order of importance:

1. Routes that pose a public safety hazard
2. Routes leading into a designated wilderness area
3. Routes causing resource damage, or routes in areas with a high risk for potential impacts to resources such as special status species or their habitat, or any other resources requiring special management or protection

7.3 General Reclamation Strategy

The overall objective for routes slated for reclamation is to remove them from the landscape using a variety of reclamation techniques. The most effective method of reclaiming these routes and preventing further use is to disguise its location. This process favors a natural form of recovery where possible and is the most cost-effective way to reclaim routes slated for reclamation. If disruptive reclamation techniques are to be used, sensitive timeframes or seasons for protected, sensitive, or management priority species should be taken into account. In an attempt to minimize route closure impacts, whenever practicable, the BLM may implement the

least intrusive, minimal impact closure methods first. Initially, most of the routes slated for reclamation may be allowed to naturally reclaim. By preferentially implementing low impact manual reclamation techniques, surface disturbances may be kept to the minimum necessary to close most routes and fulfill management objectives.

Each route was evaluated on a case-by-case basis, and the most appropriate method of reclamation was identified based on factors such as geography, topography, soils, hydrology, and vegetation, as well as management objectives, reclamation costs, modes and conditions of travel, Recreation Setting Characteristics, and other factors. BLM will compile a prioritized list of routes scheduled for reclamation including the reclamation method as prescribed by the TMPs route evaluation reports.

Post-reclamation monitoring of routes is essential to maintaining successful closures. If monitoring indicates the need for additional reclamation efforts after less intrusive closure methods have not been successful, the BLM may consider other closure options through adaptive management. Unless determined as necessary at the beginning of the implementation process, surface-disturbing reclamation actions may only take place after less intrusive methods have been tried. For example, continued vehicular use on a closed route may indicate that natural reclamation has been ineffective on that route. If it is determined that surface-disturbing reclamation techniques are necessary to effectively close a route, the Reclamation Techniques Toolbox in Appendix 3 should be consulted. It features a series of options designed to effectively ensure that closed routes are reclaimed and revegetated. The minimum necessary or “least impact” treatment analyzed in the Reclamation Techniques Toolbox may be applied to each route slated for reclamation to achieve desired outcomes.

7.4 Reclamation Standards

If disruptive reclamation techniques will be used in route reclamation, the reclamation standards listed below, as well as BLM Utah’s [Green River District reclamation guidelines](#), should be followed as applicable.

- a) Routes slated for reclamation will not alter natural hydrologic function and condition of the affected watershed (e.g. closed routes will not divert runoff from natural drainage patterns).
- b) Disturbed areas should be fully re-contoured and re-vegetated with BLM-preferred seed mixtures.
- c) Seeding should be done where necessary to aid reclamation of closed routes. Appropriate seed mixtures should be selected for each site based on site conditions. Reclamation techniques include ripping the surface with a tractor to break up compacted soil and allow rain retention. Broadcast seeding should be done prior to winter. Some areas should be fenced to prevent disturbance and allow for grazing rest during the first two growing seasons. This technique is typically used near main roads where camping or parking may occur.
- d) The BLM should utilize native material such as rock and large woody debris to the greatest extent practicable in combination with manufactured storm water structures (e.g., silt fence, straw wattles, etc.), and mechanical erosion control techniques (e.g., ripping, pocking, etc.) to minimize erosion and facilitate site stability.

- e) Reclamation techniques for routes in designated wilderness and lands with wilderness characteristics should attempt to return the area to its original condition in the shortest amount of time.
- f) Weed and vegetation treatment control measures should be implemented as needed to promote re-vegetation with native plants, prevent any new weed establishment, and control existing weed sources.

Consult Appendix R-3 from the 2008 RMP (BLM 2008b) for stipulations for surface-disturbing activities, which may apply to some forms of intrusive route reclamation.

8. CULTURAL RESOURCE CONSIDERATIONS

Properly considering cultural resources is a critical component of effective travel management: “The BLM must address cultural resources in consultation with state historic preservation officers and under various state-specific protocol agreements, if applicable. The cultural resource inventory strategy required to make TTM decisions should be commensurate to the identified risk to resources. This risk should be based on the known presence of historic properties or on the potential/likelihood for historic properties to occur in a given area based on professional knowledge, judgment, and feedback received during the planning and consultation processes.” (BLM 2016c)

Any and all cultural resource identification efforts, assessments, consultations, mitigations, treatments, protection measures, and/or site treatments for the San Rafael Desert Travel Management Plan have been addressed in separate NHPA Section 106 compliance documents and are therefore not addressed in this document. Cultural resource compliance documents for this TMP undertaking consist of (but are not limited to) a Class III Intensive Field Survey report (and any report amendments or addendums that may take place in the future), government-to-government tribal consultation correspondences and documents, interagency consultation correspondences and documents (including the State Historic Preservation Office), consulting party consultation correspondences and documents, a HPTP developed through consultations under the Travel PA, and any future HPTP amendments or addendums that may take place in the future. Any and all future decisions and actions regarding cultural resources for the San Rafael Desert TMP undertaking will take place through the HPTP and any continuing project consultation, as guided by the Travel PA.

9. REVISED STATUTE 2477 ASSERTIONS

A travel management plan is not intended to provide evidence, bearing on, or address the validity of any Revised Statute 2477 (R.S. 2477) assertions. R.S. 2477 rights are determined through a process that is entirely independent of the BLM's planning process. Consequently, this TMP process does not take into consideration R.S. 2477 evidence. BLM bases travel management planning on purpose and need related to resource uses and associated access to public lands and waters given consideration to the relevant resources. At such time as a decision is made on R.S. 2477 assertions, the BLM will adjust its travel routes accordingly (BLM Manual 1626).

10. ROADSIDE CAMPING AND PULL-OFF CONSIDERATIONS

In the TMA, roadside camping will be allowed within 30 meters on either side of the centerline of designated routes that are open to public use, unless otherwise indicated. A management decision in the 2008 RMP allows “dispersed camping throughout the PFO without permit, unless otherwise designated by the BLM” (BLM 2008b). The same decision also states, “Determine and designate areas for dispersed camping and associated access routes with the cooperation of the counties” (BLM 2008b). OHV access to dispersed camp sites may only occur where there is evidence the site has been used in the past. Examples of this may include (but are not limited to) vehicle tracks, rock fire rings, parking areas, etc. This does not apply to areas where motorized travel is prohibited (e.g., Wilderness areas).

11. GAME RETRIEVAL

According to the 2008 RMP, “OHV use for game retrieval will follow all area and routes designations for OHV use” (BLM 2008b). OHV use off designated roads or trails will not be allowed for game retrieval.

12. NEEDED AUTHORIZATIONS

As part of implementing the TMP, the BLM may seek to acquire legal access to public land where appropriate and necessary. The BLM may also identify needs and request funding for access, exchanges, and acquisitions and incorporate them in the existing ranking system. Easements, ROWs, and permissive access license agreements may include the acquisition of road or trail easements or the issuance of ROWs on an existing or historic physical access. The BLM may pursue such actions where they may contribute to natural resource protection and/or recreation enhancement opportunities. Easements may be acquired through donation or purchase following the procedures set forth in the BLM’s acquisition handbook (H-2100-1) (BLM 2002). Table 2.3 in section 2.6 in this guide lists 2008 RMP public land access-related goals, objectives, and management decisions; some of these are related to needed authorizations. The BLM’s travel management manual provides guidance concerning authorized and permitted motorized uses (BLM 2016c).

13. GROUND TRANSPORTATION LINEAR FEATURE (GTLF) GEOSPATIAL DATA

The BLM’s travel management manual provides the following guidance concerning the maintenance of travel management geographic information systems (GIS) data in the GTLF format (BLM2016c).

For GTLF adherence guidance, consult the BLM’s GTLF data standard, data report, and data implementation guidelines (BLM 2014b, c, and d). A GTLF database is a geospatial database of motorized and non-motorized transportation linear features as they exist on the ground. Features include all linear features, not just what is within the BLM Transportation System. All designated roads, primitive roads, and trails within the travel network addressed in this TMP are

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

The GTLF geodatabase exists to track route conditions and guide future management decisions. Utilized as an adaptive management tool, the geodatabase should be updated regularly to continually collect and update future changes in the transportation system, such as changing use patterns, incorrectly inventoried routes, and route migration. Tracking such changes would increase the effectiveness of implementation within the TMA by facilitating management adjustments and informing future management actions.

14. PRE- AND POST-TMP/EA MANAGEMENT ACTIONS IN GENERAL

Creating a TMP route network and analyzing the potential resource or resource use effects in an EA is a key component of travel management, but other important related actions take place before and after the TMP and its EA are approved. Many of these actions (monitoring, enforcement, etc.) are described in previous sections of this document. Active management of the routes in the TMA requires consistent monitoring and maintenance. Statewide, OHV recreation continues to increase, and the trend is expected to continue in this TMA as well. The BLM's travel management manual provides a reminder on the importance of continuing TTM beyond TMP and EA creation:

“[TTM] is a dynamic process. Upon completion of a TMP, the BLM should keep information and data concerning the travel network and transportation systems up to date, as staffing, budget and priorities allow. The BLM may modify the travel network and transportation systems through monitoring and adaptive management protocols or by specific BLM actions and authorizations. It is critical that the BLM continue TTM after completion of the initial TMP as a routine part of land management.” (2016c)

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APPENDIX 1. TRAVEL MANAGEMENT-RELATED GOALS OBJECTIVES, AND MANAGEMENT DECISIONS FROM 2008 RMP

Table A.1: 2008 RMP Transportation Language (BLM 2008b)

Goals	
•	Upgrade and construct roads to provide essential access for resource management purposes.
•	Continue to support Carbon and Emery counties and the State of Utah in providing a network of roads across public lands.
Objectives	
•	Develop and maintain a Transportation Plan within 5 years of the approval of the RMP.
Management Decisions	
TRV-1	Manage the transportation system in accordance with maintenance agreements with Carbon and Emery counties.
TRV-2	Periodically review and update maintenance agreements with Carbon and Emery counties.
TRV-3	Allow for reasonable access to non-BLM-managed lands within the PFO.
TRV-4	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.
TRV-5	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.
TRV-6	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: <ul style="list-style-type: none"> • Peter’s Point • Mexican Mountain • Cedar Mountain • Hidden Splendor • Tavaputs Ranch.
TRV-7	Allow aircraft to use existing backcountry airstrips and allow minimal maintenance of the airstrips to ensure pilot and passenger safety.

Table A.2: 2008 RMP Recreation and Off-Highway Vehicles Language (BLM 2008b)

Management Decisions	
REC-7	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.).
REC-8	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.
OHV-1	In preparing RMP designations and implementation-level travel management plans, the BLM will follow policy and regulation authority found at: 43 C.F.R. Part 8340; 43 C.F.R. Subpart 8364; and 43 C.F.R. Subpart 9268.

OHV-2	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.
OHV-3	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.
OHV-4	OHV use for game retrieval will follow all area and routes designations for OHV use.
OHV-5	OHV recreation will be managed according to the following open, closed, and limited to designated route categories (Map R-17): <ul style="list-style-type: none"> • 0 acres open • 557,000 acres closed • 1,922,000 acres limited to designated routes
OHV-6	In the areas where OHV use is limited to designated routes, designate routes as follows: <ul style="list-style-type: none"> • 606 miles of approved designated routes (shown in blue on Map R-18) • 670 miles of designated routes carried forward from the 2003 San Rafael Motorized Route Designation Plan (shown in green on Map R-18).
OHV-7	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.
OHV-8	Small open areas for OHV use will be considered. Requests will require review under NEPA and will be considered on a case-by-case basis through a land use plan amendment.
OHV-9	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.

APPENDIX 2. MONITORING SUPPORT MATERIALS

Table A.3: Route-by-Route Monitoring and Mitigation Details (Chosen Alternative)

Route Number	Designation	Monitoring	Miles
SD052	OHV Open	Monitor for recreational use; Adaptive Management Monitoring	1.6
SD083	OHV Open	Monitor for noxious weeds; Monitor for recreational use	6.2
SD113a	OHV Open	Monitor potential adverse effects to historic properties; Adaptive Management Monitoring; Signing - Interpretive; Mitigation - Create Interpretive parking area 30 meters before site	0.4
SD125	OHV Open	Monitor for recreational use; Signing - Directional; Adaptive Management Monitoring	0.3
SD225	OHV Open	Manage wildlife water structure; Adaptive Management Monitoring	3.7
SD311	OHV Open	Maintenance - Install gate in fence	1.1
SD326	OHV Open	Maintenance - Install gate in fence	3.4
SD344	OHV Limited	Monitor use; Signing - Directional	5.0
SD347	OHV Closed	Maintenance - Repair washed out segments	1.3
SD378	OHV Open	Signing - Directional	0.1
SD692	OHV Open	Maintenance - Any changes/modifications to the road must be applied for with BLM	1.1
SD764a	OHV Open	Maintenance - Improve river crossing; Signing - Directional	0.1
SD765	OHV Open	Maintenance - Any route maintenance must be in compliance with ROW	10.1
SD941	OHV Limited	Monitor for recreational use; Signing - Directional	10.3
SD942	OHV Limited	Monitor for recreational use; Signing - Directional	6.4
SD1043	OHV Closed	Signing - Administrative Use Only	0.3
SD1101	OHV Open	Mitigation - Fence adjacent sensitive resources; Signing - Regulatory	0.1

Settlement Agreement Monitoring Requirements

The BLM needs to comply with the 2017 Settlement Agreement which resulted from Southern Utah Wilderness Alliance, et al. v. U.S. Department of the Interior, et al., Case No. 2:12-cv-257 (D. Utah), hereinafter referred to as the 2017 Settlement Agreement.

Below are monitoring requirements from the 2017 Settlement Agreement that apply to the Price Field Office (among other BLM offices in Utah), and therefore the San Rafael Desert TMA.

Monitoring During and After Travel Planning

20. Monitoring in the Vernal, Price, Moab, and Kanab TMAs

a. **Baseline Monitoring Report.** Except for the Henry Mountains and Fremont Gorge TMA, for each TMA identified in paragraph 13, BLM will complete a baseline monitoring report that will document visually-apparent unauthorized surface disturbances off routes as well as visually-apparent damage to public lands resources caused by OHV vehicle use within WSAs, Natural Areas, and/or lands with BLM-inventoried wilderness characteristics. To create the baseline monitoring report, BLM will physically inspect those portions of routes within the TMA that are within or constitute a boundary to a WSA, Natural Area, and/or lands with BLM-inventoried wilderness characteristics. For those portions of routes, BLM will document by site photography and written narrative each disturbance and damage site. At a minimum, BLM will document the following information: (1) the geospatial coordinate of the site of disturbance or damage; (2) the route number or other identifier where the disturbance or

damage was observed, the date of the physical inspection, the TMA in which the inspection took place, and the name of the inspector; (3) the observed usage intensity (i.e., none, light, medium, or heavy); (4) the apparent geographic extent of the disturbance or damage; and (5), if possible, (a) the apparent type of motorized vehicle(s) that caused the disturbance or damage, (b) the apparent purpose of the disturbance (e.g., short spur, dispersed camping, play area, or inadvertent travel), and (c) the type of public land resource damaged by motorized vehicle use. The baseline monitoring report will include the information gathered and recorded during the physical inspection, as well as maps showing the location and nature of any documented disturbance or damage sites. BLM will make its baseline monitoring report available for public review at the same time as the preliminary route evaluation documents identified in paragraph 16.d. BLM need not complete the baseline monitoring report prior to that time, but may do so at its discretion. Baseline monitoring reports described in this paragraph may be used to explain or support any BLM final agency action, but do not themselves constitute final agency action.

b. **Monitoring during planning.** After BLM completes the baseline monitoring report required by paragraph 20.a, BLM will, at least one time per year, inspect all sites where BLM's baseline monitoring report previously identified disturbance and damage. If BLM receives credible information that any new visually-apparent unauthorized surface disturbances off routes or visually-apparent damage to public lands resources caused by motorized vehicle use (1) has occurred along those portions of routes within the TMA that are within or constitute a boundary to a WSA, Natural Area, and/or lands with BLM-inventoried wilderness characteristics and (2) is adversely affecting public land resources, then BLM will inspect the portion of that route, subject to available personnel and passable route conditions. BLM will document its inspection and monitoring of these sites during planning by site photography and written narrative describing each disturbance and damage site. BLM's documentation will include, at a minimum, the following information: (1) the geospatial coordinate of the site of disturbance or damage; (2) the route number or other identifier where the disturbance or damage was observed, the date of physical inspection, the TMA in which the inspection took place, and the name of the inspector; (3) the observed usage intensity (i.e., none, light, medium, or heavy); (4) the apparent geographic extent of the disturbance or damage; and (5), if possible, (a) the apparent type of motorized vehicle(s) that caused the disturbance or damage, (b) the apparent purpose of the disturbance (e.g., short spur, dispersed camping, play area, or inadvertent travel), and (c) the type of public land resource damaged by motorized vehicle use. BLM's documentation and/or reports described in this paragraph may be used to explain or support any BLM final agency action, but do not themselves constitute final agency action. BLM will undertake monitoring more frequently if it determines additional monitoring is warranted. BLM's monitoring obligation identified in this paragraph for the TMAs identified in paragraph 13 will terminate when BLM issues the new TMP for that TMA, regardless of whether administrative or judicial review is sought.

22. Consideration of Considerable Adverse Effects.

a. Any party to the agreement may provide BLM with evidence that (1) motorized vehicle use is causing or will cause considerable adverse effects as set forth in 43 C.F.R. § 8341.2(a) or (2) that action is required to protect persons, property, and public lands and resources pursuant to 43 C.F.R. § 8364.1. When BLM receives such information, it will promptly make such information available to all parties to the Settlement Agreement. BLM will

provide a written response assessing whether action pursuant to § 8341.2(a) or §8364.1 is necessary to the party submitting such information as well as all other parties to the agreement within 90 days of receiving the information.

b. BLM will consider the information collected during monitoring identified in paragraphs 20-21 of this Settlement Agreement and any other relevant information to determine whether motorized vehicle use is causing or will cause considerable adverse effects as set forth in 43 C.F.R. § 8364.1. If so, BLM will take appropriate management action.

c. The obligations outlined in this paragraph start on the effective date of this 2017 Settlement Agreement and end eight years after this Settlement Agreement becomes effective, provided that nothing in this Settlement Agreement exempts or absolves BLM from compliance with applicable regulations, including 43 C.F.R. subparts 8341 and 8364.

23. Monitoring after TMPs are issued. BLM will develop a long-term motorized vehicle monitoring protocol as part of each new TMP prepared for the TMAs identified in paragraph 13. BLM's proposed long-term monitoring protocol will be outlined in the draft and final NEPA document for each TMP, and the public, cooperating agencies, and other stakeholders will have an opportunity to provide input on each TMP's long-term monitoring protocol during the relevant public comment period. Each TMP's long-term monitoring protocol will become effective as provided in the applicable TMP. Once each TMP is issued, the long-term monitoring protocol specific to that TMP will apply and not the terms of this Settlement Agreement.

Example Monitoring Form

Recreation Monitoring Report

Observer: _____ Date: _____

Location: GPS/UTM or Township/Range/Section: _____

Topographic /Quad: _____

Describe Specific Location:

What was observed: (Check the appropriate items and describe them below) Please be very specific with your observations.

_____ Off-Road Vehicle Activity (Car, Truck, OHV; Recent/Old)

_____ How many vehicles were observed

_____ Use of Mechanized Equipment off road (What type)

_____ Litter/Dumping (Quantity consisting of what items)

_____ Cutting Wood/Vegetation (What kind and how severe)

_____ Destroyed Property, government, state, and private (What type)

_____ Evidence of Human Waste (including toilet paper).

_____ Boundary Signs (Apparent, Replacement necessary, Need for signing)

_____ Number of people encountered and from what state

_____ Other (describe) _____

Corrective action taken:

Recommended corrective action:

Was anyone contacted? What was said?

Additional comments

Strategies and Schedules

Travel Management				
Location(s)	Issue/Objective	Indicator (what)	Protocol (how/methods)	Trigger/Action
Designated road/trail system	Management of designated system	<ul style="list-style-type: none"> • Number of roads/trails meeting targeted maintenance intensities • Placement and retention of all signing 	Road/trail condition assessments	
		Average daily traffic	Traffic counters on key roads/trails	
		Number of illegal, off-system vehicle incursions	<ul style="list-style-type: none"> • Visual inspections • NAU protocols 	

Soil, Water, and Air				
Location(s)	Issue/Objective	Indicator (what)	Protocol (how/methods)	Trigger/Action
TMA-wide	Study the effects of continuing erosion that endanger floodplain soils. Map out these areas.	<ul style="list-style-type: none"> • Gully, rill, and sheet erosion • Vegetative cover • Compaction 	<ul style="list-style-type: none"> • Monitor erosion • Monitor vegetative cover • Monitor impacts and gully progressions • Collect and analyze sedimentation and erosion data 	
Wildfire burns and other select disturbed areas	Assess the effects of disturbance and reclamation	<ul style="list-style-type: none"> • Erosion or stabilization • Vegetative cover 	Visual inspection	<ul style="list-style-type: none"> • Large wildfire • Erosion and flooding

Recreation				
Location(s)	Issue/Objective	Indicator (what)	Protocol (how/methods)	*Trigger/Action
SRMAs	Produce targeted recreation opportunities specific to each SRMA	Realization of targeted benefits for each SRMA.	<ul style="list-style-type: none"> • Visitor surveys • Focus groups 	Targeted recreation benefits not realized

Recreation				
Location(s)	Issue/Objective	Indicator (what)	Protocol (how/methods)	*Trigger/Action
	(or RMZ within the SRMA if RMZs are established in the future).	Physical setting conditions, such as remoteness, naturalness, facilities	<ul style="list-style-type: none"> • Monitor “development creep” with regard to authorizing expansion of designated road systems and recreation facilities into settings targeted as more primitive; monitor lack of development in SRMAs where development was targeted • Monitor landscape change via VRM 	
		Social setting conditions, such as group size, encounters with other users, and evidence of use	<ul style="list-style-type: none"> • Existing NAU protocols for evidence of use (rapid site inventory, human impact site monitoring) • Actual counts for group size and encounters 	
		Administrative setting conditions, such as visitor services, management controls, mechanized use	<ul style="list-style-type: none"> • Monitor level of effort to provide visitor information and assistance appropriate to targeted settings • Monitor level of regulation, signing, and permitting applied as appropriate to targeted settings 	

APPENDIX 3. ROUTE RECLAMATION

Closed OHV Routes and Travel Maps

In general, OHV-Closed routes should not appear on the travel map associated with the TMP. However, BLM may choose to include some OHV-Closed routes on maps as helpful points of reference or when needed/helpful for authorized users.

Disguising Routes with Natural Materials

This method, sometimes referred to as “vertical mulching,” is used to hide routes from view. If routes are not on travel maps and are not evident to visitors, they will be unlikely to receive additional use. Often, the first several hundred feet of illegal routes or routes slated for reclamation may be disguised to look like surrounding areas by placing rocks, dead wood and plants, and in some cases planting live vegetation in a natural-looking arrangement. Where possible, materials used should be large enough and abundantly placed in order to deter persons familiar with route locations from easily removing them. In some cases, mechanical tools such as shovels, rakes, and other hand tools may be employed to obliterate embankments, ruts, water bars and ditches.

Ripping and Reseeding Routes

This process mechanically removes routes from the landscape and revegetates them. Native seed mixes should be used. Mechanical removal may be accomplished by hand or, among other methods, with the use of power equipment, excavators, bulldozers, or harrow or seed drills. Herbicides may also be used for revegetation. Based on site-specific conditions, seeding and planting treatments may include:

- Preparing a seedbed.
- Selecting an appropriate seed mix.
- Applying the seed.
- Covering the seed.

Due to the broad spectrum of situations encountered, all possible treatment options and combinations of treatments may be utilized. This process ultimately results in closed routes becoming undetectable.

Barrier Installation

In locations where it is impractical to employ any of the previous methods (e.g., extremely rocky areas) and in areas where administrative use may occasionally be required on a route closed to the public, it may be necessary to install natural or human-made barriers such as large boulders, fences with gates, or other barriers to physically prevent unauthorized use. Where possible and practical, these measures may be removed when routes are reclaimed or fully disguised.

Closing Routes with Informational Signs

This measure may be employed in cases where the previous measures have failed and ripping and seeding or the use of physical barriers is impractical or ineffective. It may also be used on routes to establish an “administrative use only” designation or to identify seasonal closures.

Signs may be clearly marked and placed in locations where they may be highly visible. Signs may be removed when routes are reclaimed or fully disguised.

Other Reclamation Considerations

In general, route closures for recreation are most effective when the designated route system provides the desired recreational opportunities, and closed routes are completely naturalized to eliminate the visual remnants of the former routes. Therefore, route closures will be most effective when any new routes, route redesigns, or reroutes within the transportation system are completed prior to implementation of route reclamation efforts.

A first step in reclamation is to obliterate obvious tracks and other evidence of use on closed routes. Techniques to accomplish this include hand-raking and cutting track edges or berms to break up straight lines. Additional techniques include placing small rocks on routes and mulching routes with local vegetation or dead plant materials. Reclamation actions would typically be limited to the portion of an unauthorized route that is within line of sight from an open route. The objective of obscuring the route to the visual horizon is to blend the disturbed area into the landscape, therefore discouraging continued use of closed routes and reducing the need for signage. The work may be limited to existing surface disturbance, and any reclamation work should first be cleared with the appropriate BLM office's Authorized Officer. A travel route that has historical significance (e.g., an old wagon trail) will not be subjected to any surface disruption. Because surface-disturbing reclamation actions may draw public attention to reclamation sites, the BLM may choose to provide informative signs near the sites that explain the need for and value of resource protection.

Where practicable, reclamation actions may include leaving the beginning portion of a closed route exposed. This would provide pullout areas or dispersed camping opportunities and is likely to discourage or prevent new surface disturbances elsewhere. Also, where appropriate, management may direct travel along open routes to concentrate traffic on maintained routes away from closed routes. This could include focusing maintenance on certain routes far from closed routes. Users may be more attracted to such well-maintained routes because of a more comfortable travel experience. Signing that strategically emphasizes use of routes far away from closed routes could also concentrate traffic away from closed routes. Routes far from closed routes could be well-signed and more emphasized in interpretive materials while routes near closed routes could receive minimal signing and low levels of publicity.

Reclamation Techniques Toolbox

A full suite of reclamation techniques may be employed throughout the TMA, depending on the appropriateness of the method for each route. While most routes may be reclaimed naturally, some may require more intrusive, surface-disturbing restoration methods. The full suite of closure reclamation techniques considered for use within the TMA is described in the Reclamation Techniques Toolbox (Table 7.1) below. As deemed appropriate by BLM management, these closure methods may be used in any combination for each route.

Table A.4: Reclamation Techniques Toolbox

Manual Techniques

Passive/natural reclamation	Allow the route to naturally reclaim without any signing, surface disturbance, or replanting of vegetation. This method is proposed in lightly used areas and on routes where restoration is already occurring. The goal is to avoid attracting attention by not signing or fencing these lightly used routes. This is the least obvious method of closure, least costly to the BLM, and provides a high degree of naturalness when successfully implemented.
Fence and sign/fence only/gate	This method applies to upland routes, dry wash routes and routes limited to authorized users for administrative use. This type of closure has little surface disturbance and is used in areas where fence cutting would be expected to be minimal. Generally, the fence type would be T-post and four strand smooth wire; however, the fence type could be increased to pipe rail/steel rail as needed while still maintaining a small footprint at the beginning or end of a route. Fencing and signs can later be removed to complete the reclamation process. A locked gate could be used to control unauthorized use on routes limited to authorized users such as grazing permittees and BLM staff.
Sign only	This method applies mainly to upland routes in lightly used areas and is proposed for routes in lightly used areas and/or in areas where compliance with signage is expected to be good. The signage can later be removed to complete the reclamation process.
Rake out tracks only	This applies mainly to sandy washes where erasing the evidence of use in lightly used areas may be enough to prevent attracting future use. This is very light on the land and provides a high degree of naturalness when done. The goal is to avoid attracting attention to lightly used routes. Monitoring and raking is required to ensure effectiveness and may be required for up to one year.
Rake out tracks and sign	This method applies mainly to sandy washes in lightly used areas. A sign reinforces the closure by placing physical notice for visitors and to assist law enforcement. This method is low cost to the BLM and provides a moderate degree of naturalness when complete. A downside to this method is the potentially high number of closed signs that can accumulate in a given area and the public perception that many routes are being closed, leading to vandalism. Monitoring is required to ensure effectiveness. Signage can be removed to complete the reclamation.
Vertical mulch with berm/fence and sign	This method works in upland areas where occasional use of routes in lightly used areas prevents natural restoration. A sign provides physical notice and assistance to law enforcement. A T-post and four strand smooth wire fence works best when the fence is placed in an area where bypassing it is difficult. Combined with a sign and/or fencing, actively placing cuttings of sagebrush, transplanted bushes, and scattering dead vegetation in the wheel tracks may be enough to prevent use. Placement of plants in the closed route to the visible horizon minimizes cost and surface disturbance. Seed mixtures may also be applied to enhance the effectiveness of reclamation.
Barriers	Physical blockades constructed to prevent the passage of vehicles. Barriers may be earthen mounds, wire fence, pipe rail fence, post and cable fence, concrete wall sections (also referred to as Jersey or K-rail barriers), or free-standing steel structures commonly referred to as Normandy barriers. To the greatest extent practicable, the BLM may utilize native, natural materials, such as rocks, vegetative debris and wood to minimize further visual impacts to the landscape. For example, wooden split rail fencing may be preferable to metal fencing.
Fence/barrier with signs and parking area	Where an open route dead-ends at a closed route or limited use route, the BLM may develop a simple trailhead at the end of the open, motorized route, with parking space and signage indicating the shift in authorized uses. This would clearly demarcate the boundary between the terminus of an open route and the beginning of a closed or limited use route. By making it evident that a closed route is still open to other forms of use (typically non-motorized and/or non-mechanized uses), this closure method eases the transition from one use to another. Thus, this method of closure may lessen public opposition to route closures and increase public compliance with route designations.
Mechanical Techniques	

Berm with signs	This method would be applied in upland areas where a berm cannot be bypassed. This type of closure has less surface disturbance because soil is only moved to create a berm at the beginning or end of a closed route. Signage provides physical notice to visitors and assistance to law enforcement. The berm stands as an indicator of closure if the sign is removed, providing additional notice to visitors. After a route has restored, berms can be removed or flattened to complete the reclamation process.
Rip/harrow	A more expensive but effective way to eliminate route use and expedite vegetation regrowth. These techniques are necessary in high use areas where use is likely to continue on a route if it is not made completely obvious that the route is being restored. 100% of a closed route surface is disturbed by this method. A tractor-towed disc harrow or a finger-type winged ripper mounted on a tractor or bulldozer would be the typical equipment used. Benefits include reduced soil compaction and improved seed germination and establishment. Drawbacks to these methods are: (1) significant plant growth (20% cover) may take up to five years; (2) no regrowth may occur if barriers are bypassed and use continues on the ripped road bed; (3) the complete removal of existing vegetation resulting in a temporarily prominent disturbed area; (4) increased likelihood of invasive weed infestation, and (5) possible disturbance of undiscovered subsurface cultural resources. Under this method, soils would be ripped or harrowed to a depth of 18 to 24 inches. Preferably compacted soils would be ripped in two passes at perpendicular directions to a minimum depth of 1,824 inches at a furrow spacing of no more than 2 feet.
Engineering/ Grading	If a closed route begins at a route that is regularly maintained with heavy equipment (Maintenance Intensity Level 5), the main route may be maintained in such a way that there is a formidable ditch and berm on the sides of the route, deterring illegal motorized travel on the closed route.

Table A.5: Routes to be Reclaimed (Modified Alternative D)

Routes to be Reclaimed									
SD006	SD007	SD008	SD009	SD015	SD017	SD018	SD024	SD026b	SD027
SD030	SD031	SD032	SD033	SD039	SD040	SD042	SD044	SD045	SD046
SD048	SD049	SD054	SD055	SD060	SD062	SD063	SD064	SD068	SD076
SD083	SD085	SD086	SD088	SD091	SD092	SD094	SD095	SD098	SD100
SD102	SD104	SD107	SD108	SD109	SD110	SD111	SD112	SD113b	SD115
SD116	SD117	SD119	SD127	SD129	SD130	SD134	SD136	SD137	SD138
SD139	SD140	SD141	SD147	SD149	SD150	SD152	SD154	SD155	SD156
SD157	SD158	SD159	SD160	SD161	SD162	SD163	SD164	SD165	SD171
SD172	SD173	SD174	SD175	SD179	SD180	SD181	SD183	SD184	SD185
SD186	SD187	SD188	SD189	SD190	SD191	SD193	SD194	SD195	SD196
SD197	SD198	SD199	SD200	SD201	SD208	SD222	SD223	SD224	SD226
SD227	SD228	SD229	SD230	SD231	SD233	SD234	SD235	SD238	SD241
SD242	SD245	SD248	SD252	SD253	SD254	SD255	SD256	SD257	SD258
SD259	SD260	SD261	SD262	SD263	SD264	SD268	SD269	SD274	SD275
SD276	SD277	SD280	SD281	SD282	SD283	SD284	SD285	SD286	SD287
SD288	SD290	SD291	SD296	SD297	SD298	SD299	SD300	SD302	SD304
SD305	SD306	SD307	SD313	SD314	SD315	SD316	SD317	SD318	SD321
SD322	SD323	SD324	SD325	SD327	SD328	SD329	SD330	SD331	SD332
SD336b	SD339	SD341	SD344	SD348	SD349	SD350	SD351	SD352	SD353
SD354	SD355	SD357	SD358	SD360	SD361	SD362	SD363	SD364	SD365

SD366	SD367	SD369	SD370	SD373	SD374	SD375	SD377	SD379	SD380
SD381	SD382	SD383	SD385	SD386	SD388	SD390	SD391	SD394	SD395
SD397	SD398	SD399	SD400	SD404	SD406	SD407	SD408	SD409	SD410
SD411	SD412	SD413	SD414	SD415	SD416	SD417	SD418	SD419	SD420
SD422	SD423	SD424	SD425	SD445	SD509	SD510	SD512	SD513	SD514
SD521	SD524	SD528	SD530	SD531	SD532	SD533	SD534	SD535	SD539
SD540	SD541	SD547	SD548	SD549	SD550	SD551	SD552	SD554	SD565
SD566	SD567	SD571	SD648	SD649	SD657	SD667	SD676	SD677	SD678
SD691	SD696	SD700	SD702	SD704	SD707	SD712	SD714	SD718	SD721
SD722	SD723	SD724	SD725	SD726	SD727	SD728	SD730	SD732	SD733
SD734	SD735	SD736	SD737b	SD738	SD739	SD743	SD744	SD745	SD746
SD747	SD748	SD749	SD753	SD754	SD755	SD756	SD757	SD758	SD760
SD761	SD764b	SD767	SD779	SD784	SD785	SD786	SD790	SD793	SD794
SD803	SD804	SD807b	SD811	SD813	SD814	SD815	SD816	SD826	SD827
SD828	SD834	SD840	SD842	SD845	SD846	SD847	SD849	SD850	SD851
SD852	SD853	SD855	SD859	SD860	SD866	SD867	SD868	SD871	SD872
SD873	SD874	SD875	SD879	SD883	SD884	SD885	SD887	SD893	SD898
SD899	SD900	SD901	SD903	SD904	SD907	SD909	SD910	SD912	SD913
SD915	SD916	SD921	SD922	SD924	SD925	SD929	SD930	SD935	SD937
SD941	SD942	SD943	SD944	SD945	SD946	SD948b	SD950	SD951	SD954
SD958	SD960	SD967	SD969	SD972	SD975	SD980	SD983	SD986	SD987
SD988	SD989	SD990	SD992	SD994	SD1008	SD1010	SD1013	SD1014	SD1015
SD1017	SD1023	SD1028	SD1030	SD1032	SD1033	SD1034	SD1035	SD1044	SD1045
SD1046	SD1047	SD1048	SD1049	SD1051	SD1056	SD1060	SD1064	SD1070	SD1071
SD1072	SD1076	SD1078	SD1082	SD1087	SD1088	SD1103	SD1105	SD1106b	SD1108
SD1109	SD1110	SD1111	SD1112	SD1115	SD1116	SD1117	SD1121	SD1122	SD1123
SD1124	SD1125	SD1126	SD1127	SD1128	SD1129	SD1130	SD1135	SD1136	SD1141
SD1144	SD1147	SD1150	SD1151	SD1155	SD1165	SD1168	SD1170	SD1173	SD1174
SD1175	SD1179	SD1181	SD1187	SD1192	SD1199	SD1201	SD1205	SD1210	SD1212
SD1217	SD1219	SD1221	SD1222	SD1223	SD1224	SD1225	SD1226	SD1228	SD1231
SD1234	SD1235	SD1238	SD1240	SD1241	SD1243	SD1245	SD1248	SD1250	SD1256
SD1258	SD1261	SD1262	SD1266	SD1268	SD1274	SD1278	SD1279	SD1285	SD1288
SD1291	SD1292	SD1293	SD1295	SD1296	SD1298	SD1301	SD1306	SD1319	SD1331
SD1333	SD1334	SD1335	SD1344	SD1346a	SD1346b				

APPENDIX 4. TRAVEL MANAGEMENT AND ROUTE DESIGNATION GUIDANCE FOR KEY PROTECTED AREAS

Overview

Some special designation rules apply to wilderness, Wild and Scenic Rivers, wilderness study areas (WSAs), inventoried lands with wilderness characteristics (LWCs), and lands managed for wilderness characteristics (MWCs or “natural areas”). In Utah and in the 2017 Settlement Agreement, BLM lands managed for wilderness characteristics in RMPs (MWCs) are known as “natural areas.” The TMA includes the Labyrinth Canyon Wilderness and various LWC units. It does not currently contain WSAs, though they could be established in the future. Also, no TMA LWC units are currently managed for wilderness characteristics in an RMP, but that could change with RMP revisions. Therefore, guidance for all special designations below is included in this guide.

Wilderness

The BLM’s wilderness management manual (BLM 2012h) contains guidance about routes and vehicles in wilderness areas. It lists permanent roads, temporary roads, motor vehicles, and mechanical transport as prohibited uses in wilderness areas. Pages 1-12 to 1-13 of the manual provide more specifics. The BLM’s wilderness manual also provides details on exceptions to these prohibitions on pages 1-15 to 1-17. Information on access authorizations in wilderness areas is provided on pages 1-30 to 1-31. The manual provides guidance on trails and trail systems (including new construction and access points) on pages 1-40 to 1-41.

Wild and Scenic Rivers

The BLM’s wild and scenic rivers manual (BLM 2012i) provides some travel management guidance in the context of rivers officially designated as wild and scenic and rivers that are eligible and suitable for such a designation but not designated. According to the manual, for both designated and eligible/suitable wild and scenic rivers, “motorized and mechanized travel on land or water may be permitted, prohibited, or restricted to protect the river values” (BLM 2012i). For designated wild and scenic rivers, the BLM manual provides the following guidance under the heading of “Transportation System”:

1. *Wild.* New roads are not generally compatible with this classification. A few existing roads leading to the boundary of the river corridor may be acceptable. New trail construction should generally be designed for nonmotorized uses. However, limited motorized uses that are compatible with identified values and unobtrusive trail bridges may be allowed. In order to protect and enhance river values, the BLM should consider restrictions or prohibitions of new airfields if such development is proposed.
2. *Scenic.* New roads and railroads are permitted to parallel the river for short segments or bridge the river if such construction fully protects river values (including the river’s free-flowing condition). Bridge crossings and river access are allowed. New trail construction or airfields must be compatible with and fully protect identified values.
3. *Recreational.* New roads and railroads are permitted to parallel the river if such construction fully protects river values (including the river’s free-flowing condition). Bridge crossings and river access are allowed. New trail construction or airfields must be compatible with and fully protect identified values.” (BLM 2012i)

For eligible/suitable wild and scenic rivers, the BLM manual provides the following guidance under the heading of “Transportation System”:

1. *Wild*. New roads and airfields are not generally compatible with this classification. A few existing roads leading to the boundary of the river corridor may be acceptable. New trail construction should generally be designed for non-motorized uses. However, consider allowing limited motorized uses and unobtrusive bridges that are compatible with identified values.
2. *Scenic*. New roads and railroads may be allowed to parallel the river for short segments or bridge the river if such construction fully protects river values (including the river’s free-flowing condition). Bridge crossings and river access are allowed. New trail construction or airfields should be compatible with and fully protect identified values.
3. *Recreational*. Consider permitting new roads and railroads that parallel the river if such construction fully protects river values (including the river’s free-flowing condition). Bridge crossings and river access are allowed. Consider new trail construction or airfields that are compatible with and fully protect identified values.” (BLM 2012i)

Wilderness Study Areas

In WSAs, OHV and mechanized route use is permitted to continue along certain existing routes, but the BLM is not to designate OHV or mechanized routes and is to instead classify them as “primitive routes.” However, in WSAs, primitive routes can be designated as non-motorized and non-mechanized trails. So, to summarize, in WSAs, OHV use is allowed to continue on some routes, but these routes are not to receive comprehensive individual route designations—unless such designations are non-motorized/non-mechanized (BLM 2016c). Below is the specific related language from the BLM’s travel management manual:

“1. In wilderness study areas, the BLM may permit motorized and mechanized use to continue along existing routes identified in the wilderness inventory conducted in support of sections 603 and 202 of FLPMA. In these cases, the BLM delays final route classification until Congress takes action or the final land use plan decision is to close those routes to motorized and mechanized use. The BLM will not designate primitive roads and motorized/mechanized trails within Wilderness Study Areas (WSA) and will not classify them as assets. The BLM will identify any motorized/mechanized Transportation linear feature located within these areas in a transportation inventory as a motorized/mechanized “primitive route” (see Glossary of Terms).

2. Primitive routes will not become part of the transportation system, classified as a transportation asset, or entered into the FAMS unless they meet one of the following conditions: the BLM designates the routes as non-motorized and nonmechanized trails or Congress releases the WSA from wilderness consideration and the BLM designates the routes.” (BLM 2016c)

In paragraph 20 a., the 2017 Settlement Agreement provides details on baseline monitoring report requirements applicable to visually apparent impacts off routes in WSAs, LWCs, and MWCs/natural areas. See the “Richfield Settlement Monitoring Requirements for Kanab, Moab, Price, and Vernal Field Offices” section of Appendix 2 of this guide for an excerpt of the monitoring report requirement language.

The BLM’s WSA management manual (BLM 2012g) also provides guidance on travel management in WSAs. In its “Policies for Specific Activities” section it covers motorized/mechanical transport and trails guidance on pages 1-27 to 1-29. According to the WSA manual, “Recreational use of motor vehicles or mechanical transport . . . may only be allowed when such use is consistent with all applicable laws and meets the non-impairment standard” (BLM 2012g).

LWCs and MWCs/Natural Areas

Travel management in LWCs and MWCs/natural areas should follow national guidance, which includes the following BLM manuals: 6310—Conducting Wilderness Characteristics Inventory on BLM Lands (Public) (BLM 2012e) and 6320—Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process (Public) (BLM 2012f). Management should not be based on BLM Utah-specific management LWC guidance tied to UT-IM-2016-027¹⁸ as such guidance was rescinded in December 2018. The LWC inventory manual provides LWC context-based definitions for primitive routes and roads on pages 11 to 12. It also provides route analysis guidance in Appendix C.

In MWCs/natural areas, the BLM is not to designate OHV/mechanized routes and is to instead classify them as “primitive routes.” However, in MWCs, primitive routes can be designated as non-motorized and non-mechanized trails (BLM 2016c). Below is the specific related language from the BLM’s travel management manual:

“In lands managed for wilderness characteristics, the BLM will not designate primitive roads and motorized/mechanized trails and will not classify them as assets within lands managed for wilderness characteristics protection in land use plans. Any motorized/mechanized Transportation linear feature located within these areas will be identified in a transportation inventory as a motorized/mechanized “primitive route” (see Ch. 7 – Travel and Transportation Management Definitions) unless a land use plan decision is made to close those routes to motorized/mechanized use. Primitive routes will not be made a part of the transportation system, classified as a transportation asset, or entered into FAMS unless they meet one of the following conditions: the BLM designates routes as non-motorized and non-mechanized trails or, under an RMP decision, the wilderness characteristics will no longer be protected and the BLM designates the routes.” (BLM 2016c)

¹⁸ The following documents should not be followed: *BLM-UT Additional Guidance for Manual 6310 – Conducting Wilderness Inventory on BLM* and *BLM-UT Additional Guidance for Manual 6320 – Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process*.

APPENDIX 5. ROUTE-BY-ROUTE DETAILS

As timing and resources allow BLM will assign the following attributes for each route and track that information in the Ground Transportation Linear Feature dataset:

- Evaluation Route #
- FAMS #
- Primary Route Management Objective
- Functional Classification
- FAMS Asset Type
- Maintenance Intensity
- Indicator of routes inclusion in FAMS
- Indicator of routes FLTP eligibility
- Indicator of routes FLAP eligibility

APPENDIX 6. SIGN PLAN BMPs

This section identifies and describes BMPs for signing routes on BLM land. It focuses on portal/entry signs and route marker signs for individual routes. Additional details for signs on BLM lands (installation, ordering, etc.) can be found in the BLM's 2016 National Sign Handbook (BLM 2016b) and the Federal Highway Administration's Manual on Uniform Traffic Control Devices, which is also known as the MUTCD (FHWA 2019).

Signing Objectives

The main objectives of this sign plan are to identify designated routes on the ground in a clear and consistent manner to eliminate or minimize off-network travel and other misuse of the TMA while reducing user conflict and resource impacts. To accomplish this, the BLM may create and distribute well-designed signs so that the public can understand the designated travel network and comply with its terms and regulations. Signs in the TMA should adhere to a consistent theme and will be consistent with all applicable laws, regulations, policies, and land use plans.

Specific objectives of this sign plan are to:

- 1) Address signing priorities and areas of special emphasis.
- 2) Provide an orientation to the types of signs, their design, and their uses in the TMA.
- 3) Address sign placement for current and proposed signs.
- 4) Outline basic protocols for the monitoring and maintenance of the sign system, including future signing needs.

General objectives for the BLM's use of signs in the TMA are to:

- 1) Identify public lands.
- 2) Promote the health and safety of visitors to the public lands.
- 3) Meet visitor needs for information and direction.
- 4) Ensure visitors are aware of route designations.
- 5) Use sign communication to:
 - a. Inform the visitor of the natural and management features of the public lands and waters.
 - b. Enhance visitor experiences.
 - c. Reduce or mitigate user and management issues.
- 6) Uniformly promote public awareness of the BLM's multiple use mandate and stewardship responsibilities in managing the U.S. public lands and waters through consistent messages and signage.
- 7) Provide uniformity in the shapes, materials, messages, and appearance of BLM signs.

The BLM's 2016 National Sign Handbook provides specific objectives pertaining to sign design: "The BLM must use and place signs judiciously; use the established emblem or wordmark, where appropriate; use approved international symbols and established standards of the sign industry; comply with Uniform Federal Accessibility Standards (UFAS) guidelines; meet specifications established in the Manual on Uniform Traffic Control Devices (MUTCD) for vehicle and pedestrian traffic control signs; comply with federal, state, and local laws, as appropriate; and complement other media, such as maps, brochures, and webpages." (BLM 2016b)

Sign Types and Design

Sign Types Overview

Under the final TMP, various types of signs and markers will be installed according to the current BLM policies and guidance for recreation and travel management signing. Signs appropriate to travel settings (i.e., Backcountry, Frontcountry, etc.) may be installed along roads, primitive roads, and trails. BLM travel management signs should use positive, clear, and simple messaging (BLM 2012a).

Signs are intended to guide, inform, and protect visitors. This section groups and defines the types of signs used on the BLM public lands and waters. Each of these categories has its own requirements and functions. Ideally, to avoid sign clutter, messages should not be mixed on a single sign or in a grouping of signs. The following categories of signs and may be installed in the TMA and include categories listed in the BLM's national sign handbook (BLM 2016b):

- Identification
- Guide (navigation)
- Informational
- Traffic control devices
- Regulatory/warning/safety
- Miscellaneous (temporary, special event, etc.)

Sign Design Overview

From large, informational portal signs to small, individual route markers, clear and accurate signing is crucial to provide all users of the travel network with the information they need to comply with route designations and meet TMP goals and objectives. New signage may incorporate elements from the design standards outlined in the most current version of the BLM's sign handbook (BLM 2016b) in addition to design specifications from the BLM sign shop. Any deviations from these standards must be approved by the BLM National Sign Coordinator.

Portal/Entry Signs

Large wooden portal identification signs (see Figures A.1-A.4 below) may be installed at the beginning of popularly used areas, routes, or entrance points. Figure A.1 shows the current format of portal identification signs on BLM lands that are outside National Conservation Areas (NCAs, no TMA lands are in NCAs). The BLM sign handbook (BLM 2016b) provides greater detail on formatting BLM signs.



Figure A.1. Portal/entry sign example



Figure A.2. Non-NCA BLM identification sign

The illustration at the top of the sign example above (taken from the latest BLM sign handbook) may be used for non-NCA BLM land identification signs in the TMA. According to the BLM sign handbook, this type of sign may require a waiver or approval if located within another agency’s ROW. Within BLM ROWs, the BLM state engineer can make the determination on a case-by-case basis; otherwise signs should comply with the U.S. Department of Transportation’s Manual on Uniform Traffic Control Devices (MUTCD) standards. The handbook goes on to provide specifications for MUTCD-compliant identification signs.



Figure A.3. MUTCD-compliant BLM identification signs

Directional/Guide Sign Overview

Directional signs are essentially guide signs, which typically use arrows and distance indicators to provide guidance for the wayfinding process with roads and trails (BLM 2016b).

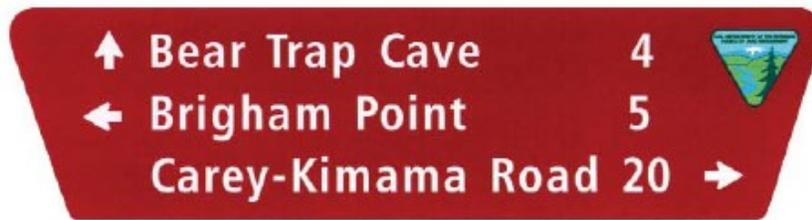


Figure A.4. Directional guide sign with guidance to multiple destinations



Figure A.5. Directional guide sign with guidance to one destination

Information Signs

Information signs may also be used throughout the TMA. See examples below.



Figure A.6. BLM information sign examples

Overview of Route Identification Marker Signing and Numbering Standards

Route markers are a specific type of guide sign. Most TMA signs may be route marker guide signs. Most primitive roads and trails may be identified by their number with flexible, brown fiberglass markers, generally referred to as fiberglass or Carsonite posts. Figure A.7 provides an example of a layout for route markers. Most BLM route markers have white lettering on a brown background.



Figure A.7. Route marker examples

All numbers and decals should be placed within the top portion of the post that will not be driven into the ground. At a minimum, these signs should convey the managing agency and the numeric route identifier along with any other important symbols or graphics, such as those denoting what type of use is allowed or authorized.

Each route ID should come from a pre-assigned TMA -specific block of numbers, which utilize four-digit numbers with no commas, and that start with a particular number (e.g., 9000). If any route is already numbered outside this block, it may need to be re-numbered. Long distance routes, touring loops, or routes to specific destinations may have a route name or symbol in addition to a number (e.g., 9012 Bull Mountain Trail). Local input may be sought when naming loops and trails. The numbering system will be flexible, and numbers may not always be in numeric order. Note: routes that travel between field offices or planning areas may use the navigation number that was assigned to them in the jurisdiction or area that had the earliest designation date.

During the planning process, final navigational identifying numbers may be assigned for marking routes on the ground and in future published maps. However, throughout the travel management process, each travel route may have been assigned more than one identifying number. During the route evaluation phase of travel planning, a unique number is assigned that ensures that routes in GIS correspond to routes in a separate evaluation database. Sometimes existing route label numbers are changed to clarify segments into transportation assets (e.g., roads, primitive roads, and trails). These evaluation numbers are used in route reports (described in Appendix N of the EA). Finally, navigational identifying numbers are assigned as described

above, and they become the official FAMS asset numbers as well. All versions of the travel network routes' various identifying number schemes may be maintained in a GIS database.

To limit the number of markers at an intersection, two routes may be identified on one post using arrow symbols and using both sides of the double-sided fiberglass posts. When adding a route name or where more than two international symbols are needed to convey a restriction or allowable use, the BLM may develop special decals which clearly state needed messages or trail names. If a volunteer group adopts a route, they may be allowed to develop a decal to place on the route's markers. On sign marker posts, trail names or trail adopters may be identified and labeled above route numbers. Not all route markers need to include a route name and numeric route identifier.

Where there is potential for a route to be traveled by motorized vehicles past its designated terminus, "Motorized Route Ends" signs or decals may be used. Routes that are open to administrative use only may be marked prominently with standard "closed" route signs (usually at the beginning of the route) and may be used in conjunction with route markers that display a standard "administrative use only" message.



Figure A.8. BLM route marker on the ground

Where designated OHV routes intersect with closed routes, "closed" route markers may be placed only where absolutely necessary for resource protection or public safety. When these closed routes are completely reclaimed either through natural re-vegetation or reclamation efforts, and the "closed" route markers are no longer necessary, the markers may be removed.

Implementation of signing should be completed in accordance with current BLM policy and guidance per the most current BLM sign handbook (BLM 2016b). Specifics for sign design, use, and location are also determined by the BLM's manuals for roads (BLM 2015) and primitive

roads (BLM 2012d), the BLM’s sign manual (BLM 2004), and the BLM’s travel management handbook (BLM 2012a).

Markers for Travel Routes That Are Open and Limited

Markers for travel routes that are open or limited to OHV travel may follow the basic layout depicted in the signs in Figure A.7. Each marker post may contain the following elements:

- Arrow pointing in the direction of the route being marked
- Route identification number
- Symbols of allowed uses to which the route is open
- Symbols of prohibited uses to which the route is closed
- BLM logo

Markers may also have a decal with GPS coordinates marked at strategic locations.

Markers for Routes That Are Limited (Administrative) or Closed

Markers for travel routes where public motorized vehicle travel is allowed but limited (with various restrictions) may use signs formatted like the first sign in Figure A.9 below. Markers for travel routes that are decommissioned or closed to all forms of motorized vehicle travel may use signs similar to that at the right in Figure A.9. Where motorized vehicle travel is limited to administrative use, signs stating closure to OHVs may be used. Once a route has been decommissioned, and the route footprint has revegetated and blends in with the adjacent landscape, signs may be removed so as not to attract attention to the fact that a travel route once existed.



Figure A.9. Route designation, restriction, and closure signs

Additional Sign Examples

In addition to portal/entry signs, directional signs, general guide signs, designated route marker guide signs, and closure/limitation signs, the following signs may be used:

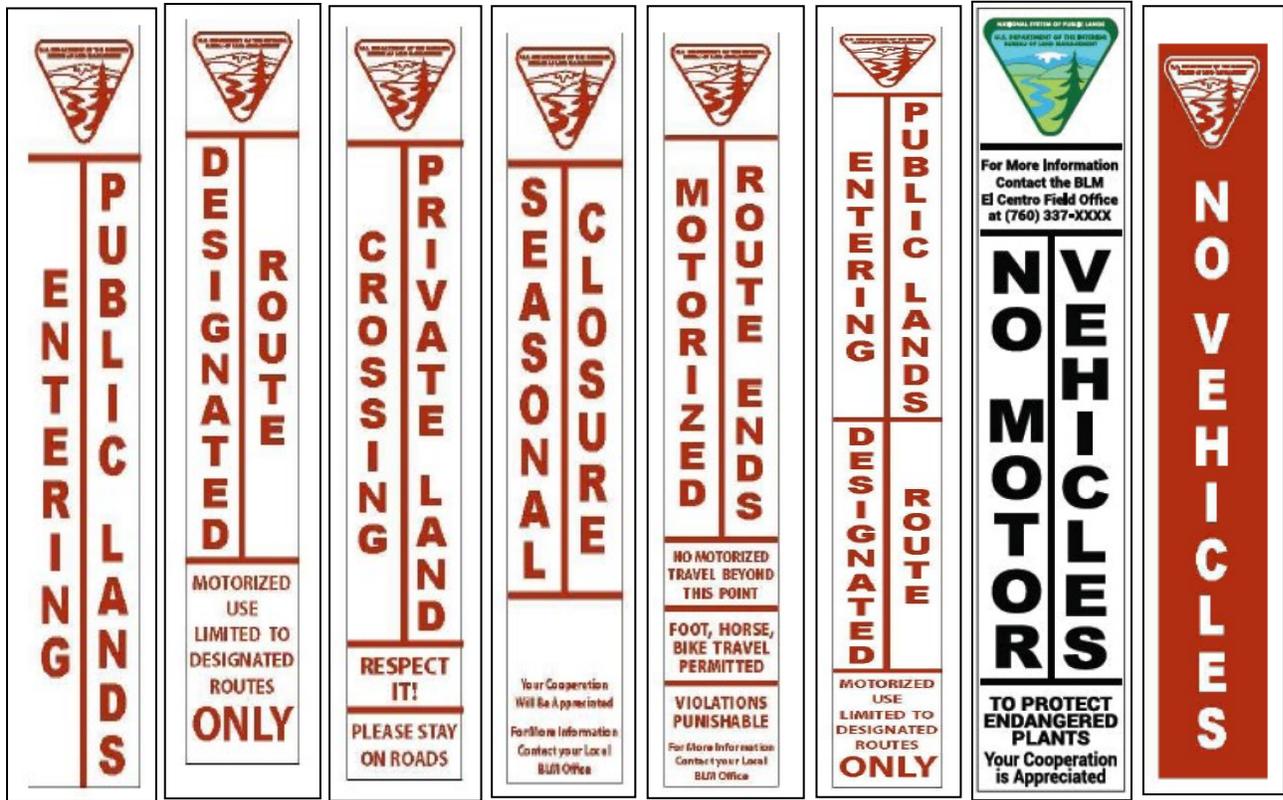


Figure A.10. Additional travel management signs

Sign Placement

Priorities for Placing Signs

Priorities for the placement of signing are listed below in order of importance:

- 1) Public health and safety
- 2) Entrances to and boundaries of areas of national significance (e.g., national monuments, designated wilderness areas, etc.)
- 3) Special management areas (e.g., concentrated recreation sites, watchable wildlife sites, trails, backcountry byways, etc.)
- 4) Travel corridors receiving intensive use
- 5) Enhancement of visitor experience and convenience
- 6) Concentrations of major thoroughfares crossing large blocks of BLM-managed public lands

Priority should be given to the installation and maintenance of route markers (e.g., guide or navigation signs). The intention is to make the network of open and limited routes more obvious and attractive than the closed routes.

Sign Distribution

Signing should be kept to the minimum necessary for visitor management and assistance. Signing may also be used as a tool for resource protection and regulatory and informational purposes. Though signs may not be placed on every route in the travel network, most routes designated as “open” or “limited” to motorized/mechanized travel may be marked with their

navigation number or route identification number at their beginnings and at major intersections. Route markers may be placed periodically to confirm the identity of the route being traveled, serving as reassurance markers. Signing may also occur at other points where following a primitive road or trail might be difficult or confusing to visitors. At the intersection of two major connector routes, larger guide signs with destinations and mileages may be used. Other signs, such as identification signs, kiosks, and regulatory signs may be placed within the TMA as needed according to BLM management priorities.

Sign Monitoring and Maintenance

Monitoring/Maintenance Overview

Through monitoring and ongoing public input, strategies may be developed to constantly improve signing effectiveness. Maintenance procedures and schedules may be developed for signs and markers. Such procedures and schedules would include anticipated replacement needs. A sign inventory and database (see below) may also be created to facilitate tracking of sign locations and sign maintenance.

Signs may be removed or destroyed during the first few years following implementation. Sign replacement could involve utilizing different techniques to more securely ensure a sign's physical placement (e.g., using concrete instead of a stake). The messages some removed or destroyed signs conveyed may also be communicated through alternate means (e.g., public notices, increased BLM interaction with visitors, etc.).

Public message signs may be routinely evaluated to ensure that they are adequately meeting user needs and are consistent with BLM goals and policies. As kiosks typically require more maintenance than other signs, they may be monitored more frequently for evidence of damage and other problems.

The BLM may strive to monitor and maintain TMA signs. Signs may be updated, repaired, or replaced as soon as possible; signs that are found to be unnecessary may be removed. General sign maintenance should be conducted according to Chapter 8 of the BLM's sign handbook (BLM 2016b). Public land users will be encouraged to report missing or damaged signs, and volunteer efforts may be developed to help monitor and replace signs. Costs may be identified through the sign inventory database. For consistency, all future signing should conform to the design standards set forth in the BLM's sign handbook (BLM 2016b).

Sign Surveys and Inventories

A sign inventory (stored in a GIS database) should be developed and maintained. On a regular basis, the BLM should evaluate signs and other communication products (brochures, maps, etc.) for effectiveness (BLM 2016b).

A sign survey may be used to create a sign inventory. Current markers and signs may be inventoried upon TMP implementation. The sign survey used to create a GIS database of sign inventory details may include photos and information such as location, category, sign text, size and color, substrate material, and condition. An electronic GPS data dictionary and fillable

electronic BLM sign survey form are available online. More details can be found on page 8 of the BLM's sign handbook (BLM 2016b).

Sign Effectiveness Planning and Review

The review of existing and proposed signs is essential to assess the need for and usefulness of each sign. Field staff involved with sign placement should have input during this review, helping to determine which signs are worthwhile, which signs should be eliminated, and which signs should be clarified. Field staff may also identify locations where signs are needed to resolve use problems, to improve stewardship ethics, or to accommodate public health and safety issues. Each sign should be planned and reviewed to fulfill the minimum review requirements of the BLM's sign handbook, including visibility, location, condition, etc. (BLM 2016b).

APPENDIX 7. ROUTE MANAGEMENT MITIGATION ACTIONS FOR VARIOUS CONFLICT OR IMPACT SCENARIOS

Introduction

The following sections present examples of possible route management mitigation actions that could be considered to address potential route-related resource concerns. These actions were considered during the route evaluation and alternatives development process. Mitigating actions are listed under resource-conflict scenario descriptions in order of possible implementation from least restrictive to most restrictive. For additional examples of mitigation measures, consult “Appendix 5: TTM Challenges and Solutions for Recreation/Trail Management” in the BLM travel management handbook (BLM 2012a). It provides mitigation measures to address the following topics:

- Route density
- Access management
- Circulation improvement
- Parking improvement
- User conflict resolution
- Quality and diversity of trail experiences

Riparian and Water Quality

Route Location Degrades Riparian Conditions

1. Relocate the route to avoid riparian areas.
2. Raise the route above water level if route is necessary, and it cannot be relocated. Remove compacted road fills and replace with permeable fills (such as corduroy) that allow riparian vegetation root systems to continue to function. If riparian crossing is unavoidable, choose nick points where crossing can occur with minimized impacts.
3. Close the route if no suitable mitigation is possible and perform reclamation.

Route-Associated Human Use Degrades Riparian Conditions

1. Place information and interpretive signs encouraging positive behavior (e.g., “Use only when dry,” etc.).
2. Raise the route above water level or place barriers to keep vehicles and people on routes. Remove compacted road fills and replace with permeable fills (such as corduroy) that allow riparian vegetation root systems to continue to function. If riparian crossing is unavoidable, choose nick points where crossing can occur with minimized impacts.
3. Relocate the route to allow riparian condition to improve.
4. Close the route if no suitable mitigation is possible and perform reclamation.

Route-Associated Human Use Contributes to Water Quality Degradation and Excessive Erosion

1. Review the situation to determine source of degradation; monitor to determine severity.
2. Place water control measures on the route, such as lead-off ditches and rolling dips to drain the entire road surface.

3. Check and ensure adequate buffer strips are provided at drainage structures to avoid direct drainage into water bodies.
4. Tighten spacing between drainage structures based on soil types and route grade.
5. Take reasonable measures to further harden/stabilize the route.
6. Relocate the route or raise the grade if the route is incised.
7. Close the route if no suitable mitigation is possible.

Wildlife and Vegetation

Route-Associated Human Use Degrades a Wildlife Habitat

1. Educate route users through interpretive signs and other information facilities.
2. Place use limitations on the route (time/season of use, type of use, number of users).
3. Review management plans for species (including recovery plans for Endangered Species Act [ESA]-listed species) and follow recommendations.
4. Design mitigation plans to address:
 - Temporary conditions
 - Seasonal conditions
 - Year-round conditions
5. Develop specific mitigation measures based on the site if species management plans are insufficient.
6. Initiate consultation with the U.S. Fish and Wildlife Service (in the case of ESA-listed species).
7. Replace/enhance habitat to offset problems caused by human use; methods could be to:
 - Augment food/water sources.
 - Place barriers along the route to protect specific habitat features.
 - Relocate or expand reproduction sites to be away from the route.
8. Relocate the route.
9. Close route if no suitable mitigation is possible and perform appropriate reclamation. Regarding intrusions into wildlife habitat, a management decision from the 2008 RMP says, “Minimize the intrusion in wildlife habitats. 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” (BLM 2008b).

Route-Associated Human Use Degrades Plant Communities

1. Place interpretive signs to encourage vehicles and people to stay on routes.
2. Conduct public outreach and education regarding noxious weeds and conserving vegetation.
3. Fence the area or place barriers to manage people.
4. Develop a program to improve desired plant communities.
5. Close the route and perform reclamation.

Route Use Contributes to Invasive Plant and Noxious Weed Spread

1. Educate the public about the spread of invasive weeds to prevent new infestations.
2. Encourage thorough cleaning of vehicles entering the area and include cleaning requirements for contractors or authorized users and permittees of the route.
3. Increase weed treatment along the route.

4. Require use of certified weed-free hay for horse users using the route.
5. Possibly limit the season of use on the route to prevent the spread of seeds if weeds are more likely to be spread during a particular season.
6. Limit the route to administrative use.

User Conflicts

Different Travel Speeds Cause Conflict Between Route Users

1. Place signs and information kiosks to raise awareness of need for considerate use of the area.
2. Monitor situation on the ground and request law enforcement support as necessary.
3. Conduct public outreach and education in an attempt change behavior.
4. Eliminate conflicts by separating uses or limit traffic by type or time of use.

Sound Levels Cause Conflict Between Recreationists and/or Local Residents

1. Place signs and information kiosks to raise awareness of sound issues.
2. Monitor situation on the ground and request law enforcement support as necessary.
3. Conduct public outreach and education in an attempt change behavior.
4. Implement “Quiet Time” use restrictions.
5. Reroute traffic to minimize conflict.
6. Place sound-reducing vegetative or constructed embankment barriers (if applicable).
7. Close route if no suitable mitigation is possible.

Administrative Use Attracts Unpermitted Use

1. Limit the amount or season of authorized use of the routes.
2. Add additional signing to the routes indicating they are limited to administrative vehicle use and public non-motorized use.
3. Fence and gate the routes at their intersections with open routes.

Vandalism and Other Resource Impacts

Route Use-Related Resource Vandalism of Range, Wildlife, or Other Facilities

1. Sign and provide informational materials to the visiting public about the protection of range and wildlife facilities.
2. Close the area around range and wildlife facilities to camping and recreational shooting.
3. Designate facility access routes as limited to administrative use.

Route Causes Unacceptable Recreation Settings Characteristic (RSC) Changes

1. Investigate the cause and implement signage and law enforcement as necessary.
2. Design mitigation plans to address:
 - Short-term conditions
 - Implement new signing and public outreach to explain problem.
 - Implement temporary use restrictions (e.g., no overnight camping).
 - Issue emergency closure order and address conditions during closure.
 - Long-term conditions
 - Implement signing and mapping protocols for the area.

- If no suitable mitigation is possible, amend 2008 RMP to close the area.
 - Issue emergency closure order and address conditions during closure.
- 3. Close areas near the route contributing to unacceptable changes.

Proposed Route Exceeds a Visual Resource Management (VRM) Objective

1. Take appropriate action to make the proposed route less noticeable (e.g., landscaping) using the Visual Contrast Rating worksheet.
2. Realign or relocate the proposed route.
3. If no suitable mitigation is possible, construction of the proposed route should not be allowed.

APPENDIX 8. RELEVANT CONSERVATION MEASURES

Surface disturbing implementation activities will follow the BLM committed conservation measures included in the 2008 Price RMP (BLM 2008b), the 2008 Vernal RMP (BLM 2008c) and the 2016 Moab Master Leasing Plan (BLM 2016a), and the project-specific measures listed below. The ones listed here are the most applicable and appropriate measures for the implementation activities associated with this TMP.

Mexican Spotted Owl (*Strix occidentalis lucida*)

The following list of measures provides species-specific guidance, intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions on the Mexican spotted owl (*Strix occidentalis lucida*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the U.S. Fish and Wildlife Service (USFWS). BLM will place restrictions on all authorized (permitted) activities that may adversely affect the Mexican spotted owl in identified Protected Activity Centers (PACs), breeding habitat, or designated critical habitat, to reduce the potential for adverse impacts to the species. Restrictions and procedures have been adapted from guidance published in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (USFWS 2002b), as well as coordination between BLM and the Service. Measures include:

1. Surveys, according to USFWS protocol, will be required prior to any disturbance related activities that have been identified to have the potential to impact Mexican spotted owl, unless current species occupancy and distribution information is complete and available. All surveys must be conducted by USFWS certified individuals and approved by the BLM authorized officer.
2. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the appropriate conservation measures below if project activities occur within 0.5 mile of suitable owl habitat, dependent in part on if the action is temporary or permanent:
 - For all temporary actions that may impact owls or suitable habitat:
 - If action occurs entirely outside of the owl breeding season, and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.
 - If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season.
 - Eliminate access routes created by a project through such means as raking out scars, revegetation, gating access points, etc.
 - For all permanent actions that may impact owls or suitable habitat:
 - Survey two consecutive years for owls according to established protocol prior to commencing of activity.
 - If owls are found, no actions will occur within 0.5 mile of identified nest site.
 - If nest site is unknown, no activity will occur within the designated PAC.

- Limit disturbances to and within suitable owl habitat by staying on designated routes.
- 3. The BLM will require monitoring of activities in designated critical habitat, identified PACs, or breeding habitats, wherein it has been determined that there is a potential for take. If any adverse impacts are observed to occur in a manner, or to an extent that was not considered in the project-specific Section 7 Consultation, then consultation must be reinitiated.
 - Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization, or mitigation measures. Monitoring results would be considered an opportunity for adaptive management, and as such, would be carried forward in the design and implementation of future projects.
- 4. For all survey and monitoring actions:
 - Reports must be provided to affected field offices within 15 days of completion of survey or monitoring efforts.
 - Report any detection of Mexican spotted owls during survey or monitoring to the authorized officer within 48 hours.
- 5. The BLM will, in areas of designated critical habitat, ensure that any physical or biological factors (i.e., the primary constituent elements), as identified in determining and designating such habitat, remains intact during implementation of any BLM-authorized activity.
- 6. For all BLM actions that -may adversely affect the primary constituent elements in any suitable Mexican spotted owl habitat, the BLM will implement measures as appropriate to minimize habitat loss or fragmentation, including rehabilitation of access routes created by the project through such means as raking out scars, revegetation, gating access points, etc.
- 7. Prior to surface disturbing activities in Mexican spotted owl PACs, breeding habitats, or designated critical habitat, specific principles should be considered to control erosion. These principles include:
 - Conduct long-range transportation and access planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
 - Avoid surface disturbance in areas with high erosion hazards to the greatest extent possible. Avoid mid-slope locations, headwalls at the source of tributary drainages, inner valley gorges, and excessively wet slopes such as those near springs. In addition, avoid areas where large cuts and fills would be required.
 - Locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.
- 8. Project developments should be designed and located to avoid direct or indirect loss or modification of Mexican spotted owl nesting and/or identified roosting habitats.
- 10. Water production associated with BLM authorized actions should be managed to ensure maintenance or enhancement of riparian habitats.

Additional Measures for the San Rafael Desert TMP

Within the Modeled Habitat, the BLM will complete habitat evaluations to determine the suitability of the habitat within the next 4 years. The focus will be to complete the evaluation within the modeled habitat located nearest to the designated critical habitat and then work out from Labyrinth Canyon Wilderness Area. Annual reports of the evaluation progress will be submitted to the USFWS until completion. Based on the results of the evaluation, surveys and monitoring will be completed in areas determined appropriate in consultation with the USFWS. Factors to be considered could include distance to a motorized route, habitat quality, and proximity to critical habitat.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions on the Southwestern willow flycatcher (*Empidonax traillii extimus*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Surveys will be required prior to operations that may adversely affect the Southwestern willow flycatcher unless species occupancy data and distribution information is complete and available. Surveys will only be conducted by BLM-approved personnel. In the event species occurrence is verified, project proponents may be required to modify operational plans at the discretion of the authorized officer. Modifications may include appropriate measures for minimization of adverse effects to the Southwestern willow flycatcher and its habitat.
2. The BLM will monitor and restrict, when and where necessary, authorized or casual use activities that may adversely affect the Southwestern willow flycatcher, including but not limited to, recreation, mining, and oil and gas activities. Monitoring results should be considered in the design and implementation of future projects.
3. To monitor the impacts of BLM-authorized projects determined -likely to adversely affect the Southwestern willow flycatcher, the BLM should prepare a short report describing progress, including success of implementation of all associated mitigation. Reports shall be submitted annually to the USFWS Utah Field Office by March 1st beginning one full year from date of implementation of the proposed action. The report shall list and describe the following items:
 - a. Any unforeseen adverse effects resulting from activities of each site-specific project (may also require reinitiation of formal Consultation).
 - b. When, and if, any level of anticipated incidental take is approached (as allowed by separate Incidental Take Statements of site-specific Formal Section 7 Consultation efforts).
 - c. When, or if, the level of anticipated take (as allowed by separate Incidental Take Statements from site-specific formal consultations) is exceeded; and
 - d. Results of annual, periodic monitoring which evaluate the effectiveness of the reasonable and prudent measures or terms and conditions of the site-specific Consultation.
4. The BLM should avoid granting activity permits or authorizing development actions in Southwestern willow flycatcher habitat. Unoccupied potential habitat should be protected in order to preserve them for future management actions associated with the recovery of the Southwestern willow flycatcher.
5. The BLM will ensure project design incorporates measures to avoid direct disturbance to populations and suitable habitats where possible. At a minimum, project designs should include consideration of water flows, slope, seasonal and spatial buffers, possible fencing, and pre-activity flagging of critical areas for avoidance.

6. The BLM will continue to address illegal and unauthorized OHV use and activity upon BLM administered lands. In order to protect, conserve, and recover the Southwestern willow flycatcher in areas of heavy unauthorized use, temporary closures, or use restrictions beyond those which are already in place, may be imposed. As funding allows, the BLM should complete a comprehensive assessment of all OHV use areas that interface with Southwestern willow flycatcher populations. Comparison of Southwestern willow flycatcher populations and OHV use areas using GIS would give BLM personnel another tool to manage and/or minimize impacts.
7. All surface disturbing activities should be restricted within a 0.25-mile buffer from suitable riparian habitats and permanent surface disturbances should be avoided within 0.5 mile of suitable Southwestern willow flycatcher habitat.
 - Unavoidable ground disturbing activities in occupied Southwestern willow flycatcher habitat should only be conducted when preceded by current year survey, should only occur between August 16 and April 30 (the period when Southwestern willow flycatcher are not likely to be breeding), and should be monitored to ensure that adverse impacts to Southwestern willow flycatcher are minimized or avoided, and to document the success of project specific mitigation/protection measures. As monitoring is relatively undefined, project-specific requirements must be identified.
8. The BLM will properly consider nesting periods for Southwestern willow flycatcher when conducting horse gathering operations in the vicinity of habitat.
9. Native species will be preferred over non-native for revegetation of habitat in disturbed areas.
10. The BLM will coordinate with other agencies and private landowners to identify voluntary opportunities to modify current land stewardship practices that may impact the Southwestern willow flycatcher and its habitats.
11. Limit disturbances to within suitable habitat by staying on designated routes.
12. Ground-disturbing activities will require monitoring throughout the duration of the project to ensure that adverse impacts to Southwestern willow flycatcher are avoided. Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization or mitigation measures. Monitoring results would be considered an opportunity for adaptive management and, as such, would be carried forward in the design and implementation of future projects.
13. Habitat disturbances (i.e., organized recreational activities requiring special use permit, etc.) will be avoided within 0.25 mile of suitable Southwestern willow flycatcher habitat from May 1 to August 15.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)

1. Application of appropriate measures will depend whether the action is temporary or permanent, and whether it occurs within or outside the breeding and nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action could continue for more than one breeding season and/or cause a loss of habitat or displace western yellow-billed cuckoos through disturbances.
2. Protocol Breeding Season Surveys will be required in suitable habitats prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by permitted individual(s), and be conducted according to protocol.
3. For all temporary actions that may impact cuckoo or suitable habitat:
 - a. If action occurs entirely outside of the cuckoo breeding season (June 1 – Aug 31), and leaves no structure or habitat disturbance, action can proceed without a presence/absence survey.
 - b. If action is proposed between June 1 and August 31, presence/absence surveys for cuckoo will be conducted prior to commencing activity. If cuckoo are detected, activity should be delayed until September 1.
 - c. Eliminate access routes created by the project through such means as raking out scars, revegetation, gating access points, etc.
4. For all permanent actions that may impact cuckoo or suitable habitat:
 - a. Protocol level surveys by permitted individuals will be conducted prior to commencing activities.
 - b. If cuckoos are detected, no activity will occur within 0.25 mile of occupied habitat.
 - c. Ensure noise levels at 0.25 mile from suitable habitat do not exceed baseline conditions.
5. Temporary or permanent actions will require monitoring throughout the duration of the project to ensure that western yellow-billed cuckoo or its habitat is not affected in a manner or to an extent not previously considered. Avoidance and minimization measures will be evaluated throughout the duration of the project.
6. Re-vegetate with native species all areas of surface disturbance within riparian areas and/or adjacent uplands.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.

Additional Measures for the Desert TMP

Within the potential habitat identified in this BA, the BLM will complete habitat evaluations to determine the suitability of the habitat within the next 4 years. The focus will be to complete the evaluation within the modeled habitat located within a ½ mile from designated routes. Annual reports of the evaluation progress will be submitted to the USFWS until completion. Based on the results of the evaluation, protocol surveys would be completed in suitable habitat within ½ mile of designated routes. County B road (e.g., Lower San Rafael River Road) or HWY 24 would not be considered for surveys because actions through BLM Travel Management would not affect the use on those roads. The surveys and/or monitoring will be completed in areas

determined appropriate in consultation with the USFWS. Factors to be considered could include distance to a motorized route, habitat quality, and proximity to critical habitat.

In areas determined to be suitable habitat, the BLM will monitor all routes including routes designated as closed within ½ mile of the suitable habitat to ensure compliance with the designation in the TMP. If monitoring indicates that disturbance or use is occurring outside the designated OHV-open routes, the BLM will implement appropriate corrective actions as identified in the Implementation Plan or developed in consultation with the USFWS.

San Rafael and Winkler Cactus (*Pediocactus* spp.)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions on the San Rafael (*Pediocactus despainii*) and Winkler cactus (*Pediocactus winkleri*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.
2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:
 - the stabilization of soils to minimize or avoid impacts related to soil erosion;
 - marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
 - require project proponents to conduct surveys and monitoring actions using BLM approved specialists to document population effects and individual impacts.
3. The BLM shall continue to document new populations of San Rafael and Winkler cacti as they are encountered.
4. To assist and support recovery efforts, the BLM will minimize or avoid surface disturbances in habitats that support the species.
5. The BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to populations or individuals where feasible. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.
6. The BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.
7. In areas where dispersed recreational uses are identified as threats to populations of the species, the BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.
8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.
10. As additional funding becomes available, the BLM should develop a travel management plan specifically for areas of occupied and potential habitat for San Rafael and Winkler cactus.
11. As additional funding becomes available, the BLM will conduct or encourage monitoring studies in areas to which topsoil has been placed with the intention of transferring the seed bank from San Rafael and Winkler cactus populations, to mitigate

population losses from development activities. The purpose of these studies would be to evaluate mitigation measures for effectiveness in reestablishing populations of the species.

Wright Fishhook Cactus (*Sclerocactus wrightiae*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Wright fishhook cactus. This list is not comprehensive.

Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.
2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:
 - a. the stabilization of soils to minimize or avoid impacts related to soil erosion;
 - b. marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
 - c. require project proponents to conduct surveys and monitoring actions using BLM approved specialists to document population effects and individual impacts.
3. The BLM shall continue to document new populations of Wright fishhook cactus as they are encountered.
4. To assist and support recovery efforts, the BLM will minimize or avoid surface disturbances in habitats that support the species.
5. The BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to populations or individuals where feasible. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.
6. The BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.
7. In areas where dispersed recreational uses are identified as threats to populations of the species, the BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.
8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.
10. As funding permits, the BLM will consider research opportunities to determine whether the mortality to recruitment ratio of 2.5 to 1, observed by Kass (2001) persists within studied populations. These observed ratios have resulted in the decline and ultimate loss of some populations. Therefore, future research might study how widespread the decline may be. To accomplish this, several populations should be selected that represent a range of habitats, locations, proximity to potential threats and relative population sizes. Populations should be monitored for changes in number and overall condition to determine whether these observed mortality rates are characteristic of the species throughout its range.

Jones Cycladenia (*Cycladenia humilis* var. *jonesii*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions on the Jones cycladenia (*Cycladenia humilis* var. *jonesii*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.
2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:
 - a. the stabilization of soils to minimize or avoid impacts related to soil erosion;
 - b. marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
 - c. require project proponents to conduct surveys and monitoring actions using BLM approved specialists to document population effects and individual impacts.
3. The BLM shall continue to document new populations of Jones cycladenia (*Cycladenia humilis* var. *jonesii*) as they are encountered.
4. To assist and support recovery efforts, the BLM will minimize or avoid surface disturbances in habitats that support the species.
5. The BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to populations or individuals where feasible. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.
6. The BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.
7. In areas where dispersed recreational uses are identified as threats to populations of the species, the BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.
8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.

Barneby Reed-Mustard (*Schoenocrambe barnebyi*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions on the Utah reed mustards. This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.
2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:
 - a. the stabilization of soils to minimize or avoid) impacts related to soil erosion;
 - b. marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
 - c. require project proponents to conduct surveys and monitoring actions using BLM approved specialists to document population effects and individual impacts.
3. The BLM shall continue to document new populations of each species as they are encountered.
4. To assist and support recovery efforts, the BLM will minimize or avoid surface disturbances in habitats that support the species.
5. The BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to suitable habitat, populations or individuals where feasible. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.
6. The BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.
7. In areas where dispersed recreational uses are identified as threats to populations of the species, the BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.
8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.

Ute Ladies'-Tresses (*Spiranthes diluvialis*)

In order to minimize effects to the federally threatened Ute ladies'-tresses, the BLM in coordination with the USFWS developed the following avoidance and minimization measures. Ute ladies'-tresses habitat is provided some protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Although plants, habitat, or populations may be afforded some protection under these regulatory mechanisms, the following conservation measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area, including areas where hydrology might be affected by project activities, within potential habitat¹⁹ prior to any ground disturbing activities to determine if suitable Ute ladies'-tresses habitat is present.
2. Within suitable habitat²⁰, site inventories will be conducted to determine occupancy. Inventories:
 - a. Must be conducted by qualified individual(s) and according to BLM- and USFWS-accepted survey protocols,
 - b. Will be conducted in suitable and occupied²¹ habitat for all areas proposed for surface disturbance or areas that could experience direct or indirect changes in hydrology from project activities,
 - c. Will be conducted prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods (usually August 1st and August 31st in the Uintah Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or USFWS botanist or demonstrating that the nearest known population is in flower),
 - d. Will include, but not be limited to, plant species lists, habitat characteristics, source of hydrology, and estimated hydroperiod, and
 - e. Will be valid until August 1st the following year.
3. Design project infrastructure to minimize direct or indirect impacts to suitable habitat both within and downstream of the project area:
 - a. Alteration and disturbance of hydrology will not be permitted,
 - b. Limit new access routes created by the project,
 - c. Roads and utilities should share common right-of-ways where possible,
 - d. Reduce width of right-of-ways and minimize the depth of excavation needed for the roadbed,
 - e. Construction and right-of-way management measures should avoid soil compaction that would impact Ute ladies' tresses habitat,
 - f. Place signing to limit off-road travel in sensitive areas,
 - g. Stay on designated routes and other cleared/approved areas, and

¹⁹ *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

²⁰ *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Ute ladies'-tresses. Habitat descriptions can be found in Recovery Plans and Federal Register Notices for the species at <<http://www.fws.gov/endangered/wildlife.html>>.

²¹ *Occupied habitat* is defined as areas currently or historically known to support Ute ladies'-tresses; synonymous with "known habitat."

- h. All disturbed areas will be re-vegetated with species approved by USFWS and BLM botanists.
4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
 - a. Follow the above (#3) recommendations for project design within suitable habitats,
 - b. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
 - c. Designs will avoid altering site hydrology and concentrating water flows or sediments into occupied habitat.
5. Occupied Ute ladies'-tresses habitats within 300' of the edge of the road shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Habitat impacts include monitoring any changes in hydrology due to project related activities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the USFWS.
6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Ute ladies'-tresses is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.

Colorado River Endangered Fish: Bonytail (*Gila elegans*), Colorado Pikeminnow (*Ptychocheilus lucius*), Humpback Chub (*Gila cypha*), and Razorback Sucker (*Xyrauchen texanus*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions on the Colorado pikeminnow, Humpback chub, bonytail, and razorback sucker, herein referred to as the Colorado River fishes. This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Monitoring of impacts of site-specific projects authorized by the BLM will result in the preparation of a report describing the progress of each site-specific project, including implementation of any associated reasonable and prudent measures or reasonable and prudent alternatives. This will be a requirement of project proponents and will be included as a condition of approval (COA) on future proposed actions that have been determined to have the potential for take. Reports will be submitted annually to the USFWS - Utah Field Office, beginning after the first full year of implementation of the project, and shall list and describe:
 - a. Any unforeseen direct or indirect adverse impacts that result from activities of each site-specific project;
 - b. Estimated levels of impact or water depletion, in relation to those described in the original project-level Consultation effort, in order to inform the Service of any intentions to reinitiate Section 7 Consultation; and
 - c. Results of annual, periodic monitoring which evaluates the effectiveness of any site-specific terms and conditions that are part of the formal Consultation process. This will include items such as an assessment of whether implementation of each site-specific project is consistent with that described in the BA, and whether the project has complied with terms and conditions.
2. The BLM shall notify the USFWS immediately of any unforeseen impacts detected during project implementation. Any implementation action that may be contributing to the introduction of toxic materials or other causes of fish mortality must be immediately stopped until the situation is remedied. If investigative monitoring efforts demonstrate that the source of fish mortality is not related to the authorized activity, the action may proceed only after notification of USFWS authorities.
3. Unoccupied, suitable habitat areas should be protected in order to preserve them for future management actions associated with the recovery of the Endangered Colorado River Fish, as well as approved reintroduction, or relocation efforts.
 - a. The BLM will avoid impacts where feasible, to habitats considered most representative of prime suitable habitat for these species.
 - b. Surface disturbing activities will be restricted within ¼ mile of the channel centerline of the Green, Price, and San Rafael Rivers
 - c. Surface disturbing activities proposed to occur within floodplains or riparian areas will be avoided unless there is no practical alternative or the development would enhance riparian/aquatic values. If activities must occur in these areas, construction will be designed to include mitigation efforts to maintain, restore,

and/or improve riparian and aquatic conditions. If conditions could not be maintained, offsite mitigation strategies should be considered.

4. The BLM will ensure project proponents are aware that designs must avoid as much direct disturbance to current populations and known habitats as is feasible. Designs should include:
 - a. protections against toxic spills into rivers and floodplains;
 - b. plans for sedimentation reduction;
 - c. minimization of riparian vegetation loss or degradation;
 - d. pre-activity flagging of critical areas for avoidance;
 - e. design of stream-crossings for adequate passage of fish; and
 - f. measures to avoid or minimize impacts on water quality at the 25-year frequency runoff
5. Prior to surface disturbing activities, specific principles will be considered to control erosion. These principles include:
 - Conduct long-range transportation and access planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
 - Avoid, where possible, surface disturbance in areas with high erosion hazards.
 - Design and locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.
7. In areas adjacent to 100-year floodplains, particularly in systems prone to flash floods, the BLM will analyze the risk for flash floods to impact facilities. Potential techniques may be used to minimize the potential for equipment damage and resultant leaks or spills.
8. Water depletions from any portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect and adversely modify the critical habitat of these endangered fish species. Section 7 consultation will be completed with the Service prior to any such water depletions.
9. Design stream-crossings for adequate passage of fish (if present), minimum impact on water quality, and at a minimum, a 25-year frequency run-off.