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Implementation Guide for the San Rafael Desert Travel Management Plan

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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

TABLE OF CONTENTS

TABLES

FIGURES

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 manual[1] (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

[1] 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:

> <u>OHV Limited Areas</u>
> 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: • 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: • 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.	*Enter in FAMS. Update GIS database to "crosswalk" with evaluation and inventory numbers.*
Phase I	Develop and publish up-to-date, readily available map of BLM travel route network.	*This is the first step in the effort to increase public knowledge of the travel network and plans for its future. To be cost-effective, maps may cover an area larger than just TMA BLM lands.*
Phase I	Develop a signing plan and initiate an outreach program.	*This can be done at the District level.*
Phase I	Pursue funding for outreach literature, signs, and staff needed to implement the route-marking effort.	
Phase I	Establish databases and protocols for collecting monitoring data. Identify initial sites for resource monitoring.	*Clear identification of the information required would result in more effective monitoring and data recording.*
Phase I	Prepare for initial signing of network.	*As funding allows, this may include hiring seasonal trail ranger(s) or contracting for initial signing.*
Phase I	Sign the travel route network with route markers and inventory maintenance and restoration needs. Prioritize by area.	*The principal goal is to make the open and limited travel routes more attractive than closed travel routes.*
Phase I	Set up partnerships with existing local groups and clubs and local, county, State, and tribal government organizations. As needed/possible, recruit and train volunteers to establish patrols and place route markers.	*Greater public compliance with OHV regulations may be achieved over time by involving user groups for this task.*
End of Phase I	Monitor compliance with the TMP route network. Publish an annual report online.	*The report could include pictures of some actions taken.*
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.	*Timely reclamation of such routes would reduce the potential for continued use of those routes.*
Phase II	Update travel network maps and re-publish as necessary.	
All Phases of Plan	Monitor and maintain the open route network markers based on direction in this guide's sign plan.	
Phase II or III	Install bulletin boards/kiosks at primary portals to public lands and where needed based on monitoring.	*Only install at non-portal sites if sites that require additional visitor information have been identified through monitoring.*
Phase III	Explore options for completing a visitor survey for each TMA.	

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.[2] 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)

[2] 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.[3] 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.

[3] 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	Travel management and OHV use monitoring within the planning area will focus on compliance with specific route and area designations and restrictions, with primary emphasis on those routes or areas causing the highest levels of user conflicts or adverse impacts to resources. Various methods of monitoring may be employed including; aerial monitoring, ground patrol, "citizen watch,"" and appropriate methods of remote surveillance such as traffic counters, etc. Evaluate trail impacts on 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. Periodically check that routes meet the objectives set forth in the RMP to ensure resource conditions such as water quality, wildlife/fish habitat, or recreational values are maintained and available to communities and users, and ensure resource values are not compromised. Route or area closures will be regularly monitored for compliance. Cooperation with other agencies in travel management and OHV use monitoring will continue to be emphasized, and improved wherever possible.
Transportation	Periodically check that roads meet the objectives set forth in the RMP to ensure resource conditions are maintained and available to communities and users, and ensure resource values are not compromised. Update the Transportation Plan as monitoring needs are found.

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.

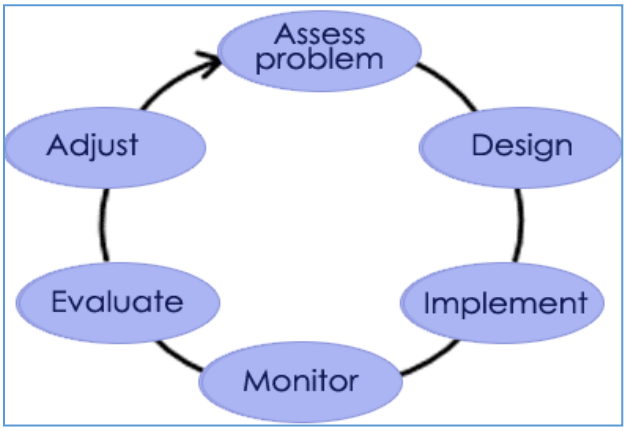

Figure 4.1: Adaptive Management Cycle

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.
"OHV Use" section from "Appendix R-5 —Best Management Practices For Raptors And Their Associated Habitats In Utah, August 2006"	
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.	

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 waddles, etc.), and mechanical erosion control techniques (e.g., ripping, pocking, etc.) to minimize erosion and facilitate site stability.

e) Reclamation techniques for routes in designated wilderness and lands with wilderness characteristics 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: • 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): • 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: • 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	• Number of roads/trails meeting targeted maintenance intensities • Placement and retention of all signing	Road/trail condition assessments	
		Average daily traffic	Traffic counters on key roads/trails	
		Number of illegal, off-system vehicle incursions	• Visual inspections • 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.	• Gully, rill, and sheet erosion • Vegetative cover • Compaction	• Monitor erosion • Monitor vegetative cover • Monitor impacts and gully progressions • Collect and analyze sedimentation and erosion data	
Wildfire burns and other select disturbed areas	Assess the effects of disturbance and reclamation	• Erosion or stabilization • Vegetative cover	Visual inspection	• Large wildfire • Erosion and flooding

Recreation				
Location(s)	Issue/Objective	Indicator (what)	Protocol (how/methods)	*Trigger/Action
SRMAs	Produce targeted recreation opportunities specific to each SRMA	Realization of targeted benefits for each SRMA.	• 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	• Monitor "development creep" with regard to authorizing expansion of designated road systems and recreation facilities into settings targeted as more primitive; monitor lack of development in SRMAs where development was targeted • Monitor landscape change via VRM	
		Social setting conditions, such as group size, encounters with other users, and evidence of use	• Existing 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	• 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-2016-027[4] 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)

[4] 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).

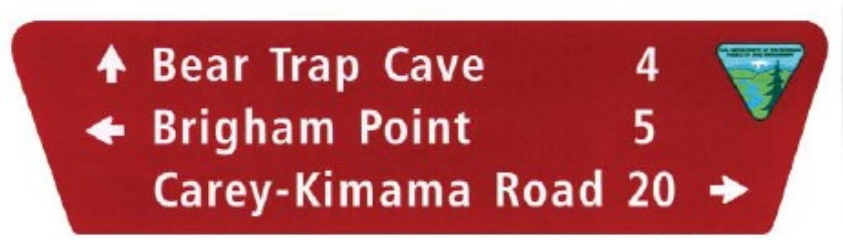

Figure A.4. Directional guide sign with guidance to multiple destinations

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:

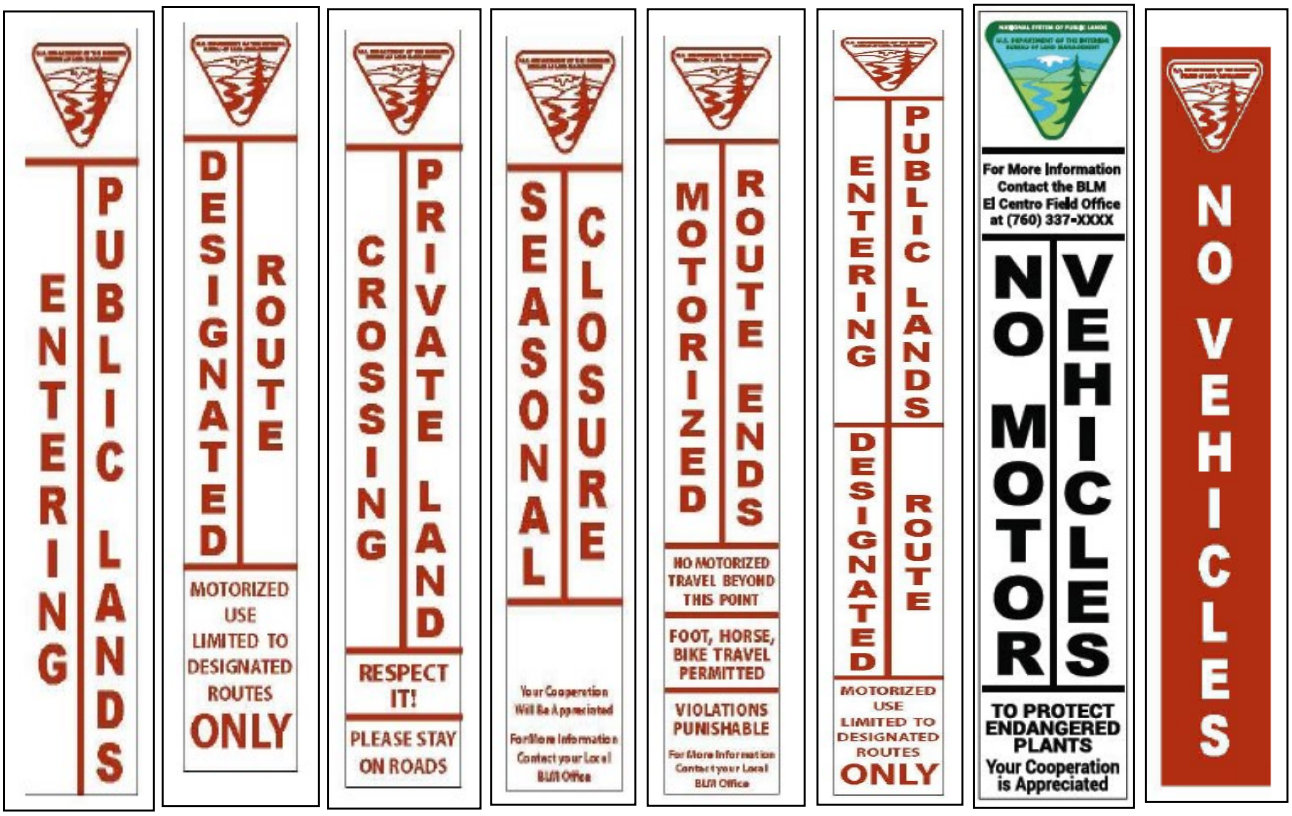

Figure A.10. Additional travel management signs

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 ofproject 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 previous 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 habitat[5] prior to any ground disturbing activities to determine if suitable Ute ladies'-tresses habitat is present.
2. Within suitable habitat[6], 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 occupied[7] 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

[5] *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

[6] *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>.

[7] *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.