June 2026

# Trail Canyon Travel Management Plan

**Environmental Assessment** **DOI-BLM-UT-P020-2026-0003-EA**

*I have considered the factors mandated by the National Environmental Policy Act (NEPA). This environmental assessment represents the Bureau of Land Management's (BLM's) good-faith effort to fulfill NEPA's requirements by prioritizing documentation of the most important relevant considerations within the statutorily mandated page limits and timeline. This prioritization reflects BLM's expert judgment; and any considerations addressed briefly or left unaddressed are, in BLM's judgment, comparatively non-substantive and would not meaningfully inform BLM's consideration of environmental effects and the decision to be made. The EA is substantially complete, considers the factors mandated by NEPA, and, in my judgment, contains analysis adequate to inform BLM's decision regarding the proposed action.*

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## Acronyms

| Acronym | Full Terminology |
|---|---|
| ACEC | Area of Critical Environmental Concern |
| APE | Area of Potential Effect |
| ATV | All-Terrain Vehicle |
| BCC | Birds of Conservation Concern |
| BLM | Bureau of Land Management |
| BMP | Best Management Practice |
| CFR | Code of Federal Regulations |
| DOI | U.S. Department of the Interior |
| EIS | Environmental Impact Statement |
| GHG | Greenhouse gas |
| GIS | Geographic information system |
| GPS | Global Positioning System |
| GTLF | Ground Transportation Linear Feature |
| HPTP | Historic Properties Treatment Plan |
| IDT | Interdisciplinary Team |
| IPaC | Information for Planning and Consultation |
| KFO | Kanab Field Office |
| KML | Google Earth keyhole markup language |
| KMZ | Google Earth keyhole markup language zipped |
| LWC | Land with Wilderness Characteristics |
| MBTA | Migratory Bird Treaty Act |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NSE | NatureServe Explorer |
| OHV | Off-Highway Vehicle or Off-Road Vehicle |
| PFYC | Potential Fossil Yield Classification |
| PLPCO | State of Utah Public Lands Policy Coordinating Office |
| PRPA | Paleontological Resources Preservation Act |
| RMZ | Recreation Management Zone |
| RMP | Resource Management Plan |
| ROW | Right-of-Way |
| SHPO | Utah State Historic Preservation Office |
| SRMA | Special Recreation Management Area |
| SRP | Special Recreation Permit |
| TLA | Utah Trust Lands Administration |
| TMA | Travel Management Area |
| TMP | Travel Management Plan |
| Travel PA | BLM's Travel and Transportation Management Programmatic Agreement with the Advisory Council on Historic Preservation and the Utah State Historic Preservation Office |
| UDWR | Utah Division of Wildlife Resources |
| USFWS | U.S. Fish and Wildlife Service |
| UTV | Utility Terrain Vehicle |
| VMT | Vehicle Miles Traveled |
| VRI | Visual Resource Inventory |
| VRM | Visual Resource Management |
| WSA | Wilderness Study Area |

# CHAPTER 1. INTRODUCTION

## 1.1. Background

The Bureau of Land Management (BLM) 2008 Kanab Field Office Record of Decision and Approved Resource Management Plan (2008 RMP) included an implementation-level travel management plan (2008 TMP, Appendix 7) that designated routes for use by off-road vehicles through the collective efforts of and interdisciplinary team (IDT) (see 2008 RMP, Map 10), including those routes within the Trail Canyon Travel Management Area (TMA). For details on the route designation processes BLM undertook for the 2008 RMP, see the 2008 RMP pages 29-30 and 106-106, Map 10, and Appendix 7.

The 2008 RMP designated approximately 98% of the Kanab Field Office (KFO) area, previously managed as open to cross-country OHV use, as *limited to designated routes*, effectively reducing impacts from OHV use. In the 2008 TMP, the BLM designated 449 miles of routes as OHV-Open within the TMA while designating 15 miles of routes as OHV-Closed to all motorized use and earmarking them for reclamation, offering protections for the area's natural and cultural resources. OHV travel in the TMA has been managed in accordance with the 2008 TMP. In 2013, a court adjudicated two R.S. 2477 rights-of-way in favor of Kane County: BLM portions of the Hancock Road and Sand Dunes Road/Yellowjacket Road. Approximately 24 miles of these roads occur on BLM administered lands. In response to the adjudication, the BLM adjusted its 2008 TMP to include these 24 miles. This adjustment resulted in an updated total of 473 miles of routes on BLM land designated for OHV-Open use in the TMA.

In a 2017 Settlement Agreement[1] resolving legal challenges to the 2008 RMP, the BLM agreed to issue a new TMP for the Trail Canyon TMA. The 2017 Settlement Agreement outlined the process for completing the TMP. In addition to complying with the 2017 Settlement Agreement, the BLM's active planning of the route designations in the Trail Canyon TMA will ensure the travel network continues to meet the goals and objectives of the TMA's resource values and uses. This process includes evaluating whether previously designated routes have an affirmed purpose and need and ensuring the route designation alternatives would comply with BLM's OHV regulation 43 CFR. 8342.1 which requires the BLM to designate routes in a manner that protects the resources of public lands, promotes the safety of all users of those lands, and minimizes conflicts among the various users of those lands.

The term off-road vehicle is synonymous with "off-highway vehicle" (OHV) and is referred to by this term hereafter in this Environmental Assessment (EA). The Code of Federal Regulations (CFR) 43 CFR 8340.0-5 define OHVs as any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) Any nonamphibious registered motorboat; (2) Any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) Any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) Vehicles in official use; (5) E-bikes (i) While being used on roads and trails upon which mechanized, non-motorized

[1] The 2017 Settlement Agreement was a result of Southern Utah Wilderness Alliance, et al. v. U.S. Department of the Interior, et al., U.S. District Court (D. Utah), Consolidated Case No. 2:12-cv-257. The 2017 Settlement Agreement can be accessed online at https://www.blm.gov/sites/default/files/docs/2026-04/Final_Settlement_Agreement.pdf

use is allowed; (ii) That are being used in a manner where the motor is not exclusively propelling the e-bike for an extended period of time; and (iii) Where the authorized officer has expressly determined, as part of a land-use planning or implementation-level decision, that e-bikes should be treated the same as non-motorized bicycles; and (6) Any combat or combat support vehicle when used in times of national defense emergencies.

To form a revised travel network, the BLM plans to designate routes within the TMA as OHV-Open, OHV-Limited, or OHV-Closed as defined in the following categories:

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

As a part of this effort, the BLM evaluated 469 miles of routes (594 route segments[2]) on 182,766 acres of BLM-managed lands in the Trail Canyon TMA. This EA analyzes the effects of the proposed route designations. The TMA Implementation Guide (0) describes actions (education and outreach, sign installation, route maintenance, enforcement, monitoring, and reclamation) that BLM would take after completion of the TMP. The route designations selected would replace the implementation-level decisions of the 2008 TMP.

## 1.2. Purpose and Need

The need for the BLM to develop the Trail Canyon TMP is established by the Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 U.S.C. 1701 et seq.) is to manage, develop, and enhance public lands under its jurisdiction in a manner that protects the resources, promotes the safety of all users, and minimizes conflicts among various users.

The purposes of the Trail Canyon TMP are to designate inventoried existing routes on BLM-managed lands within the TMA as OHV-Open, OHV-Limited, or OHV-Closed in accordance with the goals and objectives of the TMA's resource values and uses and to ensure travel and transportation management in the TMA conforms with applicable laws, regulations, and policies.

Additionally, the Trail Canyon TMP would meet the provisions of the 2017 Settlement Agreement, directing BLM to issue a new TMP for the TMA in conformance with procedure and documentation requirements outlined in the 2017 Settlement Agreement.

[2] Route segments represent portions of a route that were intentionally divided into multiple parts. Segmentation may occur for several reasons, but the primary purpose is to support more accurate evaluations and development of alternatives. When two or more consecutive segments belong to the same route and are all designated OHV-Open, they will be recombined into a single continuous route.

## 1.3. Decision To Be Made

The BLM Authorized Officer will determine which route network would be appropriate for BLM-administered lands in the TMA and will decide which routes will be designated OHV-Open, OHV-Limited, or OHV-Closed within that travel network. The final OHV route designations will be selected from the range of alternatives considered in this EA and may include the modification of an alternative or a combination of the alternatives. The decision will identify the selected route designations and the rationale for the decision. The BLM decision will be limited to BLM-administered lands, but potential effects of BLM route designations on routes, actions, resources, and resource uses on lands outside BLM jurisdiction were considered in the effects analyses to the extent that they are known or can be estimated.

The BLM Authorized Officer, in this TMP, will not authorize construction of any new routes.

The BLM Authorized Officer will not, in this TMP, make any decisions affecting existing or future authorized users. Authorized users are excluded from the definition of OHV in 43 C.F.R. § 8340.0-5(a). Examples of authorized users include, but are not limited to, grazing permittees accessing authorized range facilities, landowners or their lessees who have been authorized to access their inholdings, and other permit holders acting pursuant to their permit authorizations (such as rights-of-way or mineral leases). If the selected route designations preclude public OHV access to Utah Trust Lands Administration (TLA) parcels, TLA and its permittees may obtain authorization to access those parcels from the BLM. The BLM will continue to work with current and future authorized users as appropriate to ensure reasonable access. As the need arises, and in accordance with applicable laws and regulations, any route (including those that are designated OHV-Closed) could be made available to authorized uses.

The State of Utah and its counties may hold valid existing rights-of-way (ROWs) in the TMA pursuant to Revised Statute 2477 (R.S. 2477), Act of July 28, 1866, Chapter 262, 8,14; Stat. 252, 253, codified at 43 USC 932. Congress repealed R.S. 2477 through passage of FLPMA. R.S. 2477 rights are determined through a process that is independent of the BLM's travel planning process. For example, the State and counties are currently asserting their R.S. 2477 claims in pending Quiet Title Act litigation against the United States. This travel planning effort does not provide evidence bearing on or addressing the validity of any R.S. 2477 assertions and does not adjudicate, analyze, or otherwise determine the validity of claimed ROWs. Nothing in this TMP is intended to extinguish a valid existing right or alter the legal rights the State and counties may have to assert and protect R.S. 2477 rights. If it is determined that the State or counties possess valid existing R.S. 2477 ROWs in the TMA, the BLM will clarify, through appropriate mechanisms and consistent with applicable law, that the route designations in the travel plan are subject to those ROWs.

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

## 1.4. TMA Overview

Maps showing the Trail Canyon TMA, inventoried routes evaluated and considered for designation, and proposed alternatives can be found in C. The BLM manages 182,766 acres out of the 326,376-acre TMA within Kane County, Utah. It is bounded by the Dixie National Forest on the north, U.S. Hwy 89 on the east, the Utah-Arizona border on the south, and Zion National Park on the west. The TMA lies on the western edge of the Colorado Plateau physiographic province, is part of the Colorado River Basin, and includes part of three different watersheds: the Upper Virgin River, Kanab Creek, and Ft. Pierce Wash. The area is dominated by pinyon-juniper, with smaller amounts of sagebrush steppe and non-vegetated habitat. The most popular recreational activities in the TMA are OHV use, backpacking, hunting, hiking, and sightseeing; recreation use continues to increase along with visitation increase to nearby areas such as Zion National Park, Grand Staircase-Escalante National Monument, and Coral Pink Sand Dunes State Park. Surface jurisdictions in the TMA are displayed in Table 1.

**Table 1: TMA Approximate Acreage by Jurisdiction**

| Jurisdiction | Acres | % of TMA |
|---|---|---|
| BLM | 182,737 | 56% |
| Private | 111,175 | 34% |
| Utah Trust Lands Administration | 28,709 | 9% |
| Utah State Parks | 3,728 | 1% |
| Other | 27 | <1% |
| **Total** | **326,376** | **100%** |

## 1.5. Conformance with BLM Land Use Plan

The action alternatives described in this document are in conformance with applicable management direction in the 2008 RMP, which provides overarching management decisions, goals, and guidance for this travel planning effort. The alternatives were also developed in accordance with applicable laws and regulations. RMP decisions and goals to which this project conforms and relationships to laws and regulations are detailed in Appendix A.

## 1.6. Scoping and Issues

### 1.6.1. Internal Scoping

BLM and Cooperating Agencies identified route- and route designation-related issues that could affect the natural and human environment within the TMA. Internal review occurred concurrently with the route evaluation and travel network creation process described in Appendix D.

### 1.6.2. External Scoping

The BLM released preliminary travel network alternatives for public input from October 30 to November 30, 2020, receiving 23 comments: 1 from a government agency/cooperator, 3 from special interest groups, and 19 from individuals. Comments raised 14 main issues, including: keeping all access open (10); reducing route redundancy (8); limiting access to sensitive areas (7); closing routes in WSAs to motorized use (5); concerns over OHV-favored management (4); reducing user conflicts (4); designating routes only with demonstrated need (3); improving

management of OHV impacts (3); using current on-the-ground data for the EA baseline (2); the current model exceeding historic WSA use thresholds (2); reducing total routes (1); expanding OHV access, including in WSAs (1); enforcing OHV carrying capacities in WSAs (1); and keeping SITLA access routes open (1).

### 1.6.3. Issues

While many preliminary issues related to the route designation alternatives were identified through internal and external review, not all issues warrant detailed analysis in this EA. Issues that are brought forward for detailed analysis are based on guidance in the DOI NEPA Handbook (DOI 2026).

**Issue 1:** How would the route designation alternatives impact the important and relevant values of the Cottonwood Canyon ACEC?
**Issue 2:** How would the route designation alternatives impact cultural resources within the TMA?
**Issue 3:** How would the route designation alternatives impact T&E plant species and their habitat within the TMA?
**Issue 4:** How would the route designation alternatives impact recreation opportunities in the TMA?
**Issue 5:** How would the route network alternatives impact soil stability?
**Issue 6:** How would the route designation alternatives impact size, apparent naturalness, and outstanding opportunities for solitude or primitive and unconfined recreation in WSAs within the TMA?
**Issue 7:** How would the route designation alternatives impact the outstandingly remarkable values of WSRs flowing through or adjacent to the TMA?
**Issue 8:** How would the route designation alternatives affect visual resources within the TMA?
**Issue 9:** How would the route designation alternatives affect water quality, hydrology, and riparian areas within the TMA?
**Issue 10:** How would the route designation alternatives affect size, apparent naturalness, and outstanding opportunities for solitude or primitive and unconfined recreation in lands identified by the BLM as possessing wilderness characteristics?
**Issue 11:** How would the route designation alternatives impact general wildlife species?
**Issue 12:** How would the route designation alternatives affect T&E and BLM Sensitive wildlife species and their habitats within the TMA?

The BLM identified an additional 16 issues and determined a detailed analysis was not warranted (DOI 2026, Section 1.5). These issues are analyzed in brief (AIB) in Appendix B with a concise discussion regarding the context and intensity of the effects related to each issue. The AIB issues do not relate to how the proposed action or alternatives respond to the purpose and need or they have no potential for significant effects.

Some resources are not associated with potential issues because they are not present or would not be affected in any way by the route designations. Those resources are listed in Table 24 at the end of the AIB Appendix along with rationale explaining why no analysis is needed.

# CHAPTER 2. ALTERNATIVES

## 2.1. Travel Network Development Methodology

The BLM developed the travel network alternatives (see maps in Appendix C) by compiling a linear feature route inventory within the TMA; evaluating the routes in accordance with BLM policy and the 2017 Settlement Agreement; and gathering and incorporating information from the public and cooperating agencies.

## 2.2. Route Inventory

The BLM compiled the route inventory to be considered for designation as a part of this travel planning effort. The following subsections describe the process for developing the route inventory.

## 2.3. Inventory and Data Collection

The route inventory began in 2019 using field surveys, aerial imagery, and IDT input. The BLM collected inventory data, showing route locations and attributes. Data also included GPS-collected points describing features on or near routes and linear features the were not components of the 2008 TMP. During IDT review of the linear features identified through inventory some were found to be linear disturbances and are not brought forward for analysis. Conversely 19 miles of these linear features were found to have a purpose and need and brought forward for analysis.

The route inventory consists of 449 miles of routes designated in the 2008 TMP plus the 19 miles of identified linear features missed in 2008. The Hancock Road and Sand Dunes Road/Yellowjacket Roads (adjudicated R.S. 2477 to Kane County) are not being analyzed in this TMP as they are not BLM administered routes. Rounded up the total miles of evaluated routes analyzed is 469 miles.

## 2.4. Preparation for route evaluation

The IDT collected and compiled additional data (such as cultural resource inventory and soils data) necessary to propose route designations appropriate to the alternatives for each linear feature carried forward for evaluation.

## 2.5. Route Evaluation and Network Alternative Development

The BLM IDT began evaluating the 469 miles of routes considered for designation. The results of these route evaluations are shown, route by route, in each of the separate route reports (available on the project ePlanning webpage) for each route or route segment in the TMA. These multi-page route reports catalogue the resources relating to each route, along with route attributes.

The route evaluation process (which included evaluating resource and user conflicts along with the purpose and need for the route) was used to inform proposed route designations across the action alternatives B–D.

For each route, the BLM considered and documented the following:

- characteristics (e.g., location, maintenance frequency, class, use level, vehicle type accommodation),

- condition (e.g., braiding, washed out),
- connectivity (e.g., if routes on adjacent land ownerships are open to public use),
- public purpose and need (e.g., destinations or experiences provided by the route, whether the other routes provide access to the same destinations or experiences),
- known user conflicts,
- official and/or authorized uses (e.g., facility access, permit access, etc.),
- recreational attractions (e.g., campsites, overlooks),
- resource values (e.g., within or near special status species or habitat),
- design features to minimize effects (e.g., cultural resource monitoring), and
- necessity of the route within the travel network.

In addition to cataloging the resources relating to each route and route attributes, the route reports include the proposed designation for the subject route under each alternative. Alternative A (i.e., current management) represents the 2008 TMP, as amended. Alternatives B-D were created by weighing resource conflicts against purpose and need for the route in consideration of the goals of each alternative. Alternative B emphasizes resource conservation, Alternative C allows public OHV access while conserving sensitive resources, and Alternative D emphasizes public OHV access.

Additionally, the BLM considered and discussed opportunities and techniques for avoiding or mitigating route designation effects to minimize damage, disruption, and conflict with various resources and users. The BLM proposed routes as open or limited where doing so would result in minimal resource damage or redirect travel to routes in less sensitive areas. The BLM also identified implementation actions associated with specific route designations to address resource concerns or user conflict (see Appendix E).

The BLM considered travel network connectivity to create the proposed range of alternatives by discussing how different route designations in a particular travel network area would redirect OHV use patterns and what resources would be affected by those use patterns. When identifying the travel network areas, the BLM considered primary uses in the area being reviewed, such as, hunting, firewood cutting, camping and exploring. The BLM documented in the route forms which routes are particularly important for travel network connectivity. The BLM also considered the route designation criteria (43 CFR 8342.1), issues identified through internal and external review, the requirements of the Settlement Agreement (see Settlement Agreement Section 17. (f)), and the management decisions and objectives in the 2008 RMP for the network as a whole as well as on a route-by-route basis.

Figure 1, below, and figures throughout Chapter 3 enable the reader to compare the miles of routes designated open, limited, and closed for each alternative. The variety of individual designations proposed during route evaluation are available in the route reports and interactive maps (available on the project ePlanning webpage). In some cases, some form of management (e.g., monitoring) was assigned to routes in conjunction with their individual OHV designations, and details on such management can be found in the route reports. Unless otherwise noted, if the route reports include management prescriptions for a selected alternative those prescriptions will be incorporated into the decision. OHV route designations are defined in Section 2.1, and in the BLM Travel and Transportation Management Manual (BLM 2016b, page 7-3).

Map 2 – Map 25 in Appendix C show alternative travel networks and designations for Alternatives A, B, C, and D.

## 2.6. Common to All Alternatives

BLM used the designation criteria at 43 CFR 8342.1 to inform the creation of each alternative network. The designation criteria regulations do not require BLM to eliminate all resource impacts that arise from the designation of a route network. However, the alternative-specific impact minimization considerations are addressed in each Alternative

Also, the TMP Implementation Guide (Appendix E) describes actions that BLM will take after completion of the TMP to minimize impacts or user conflicts from the travel network. The Implementation Guide applies regardless of the route network alternative selected (i.e., common to all alternatives). These actions include education and outreach, sign installation, route maintenance, enforcement, monitoring, and reclamation. The Implementation Guide also identifies BLM's objectives, commitments, priorities, and applicable policies and regulations.

## 2.7. Route Designations by Alternatives

The alternative route designations are described in Figure 1 and show the number of miles to be designated OHV-Open, OHV-Limited, and OHV-Closed in each alternative.

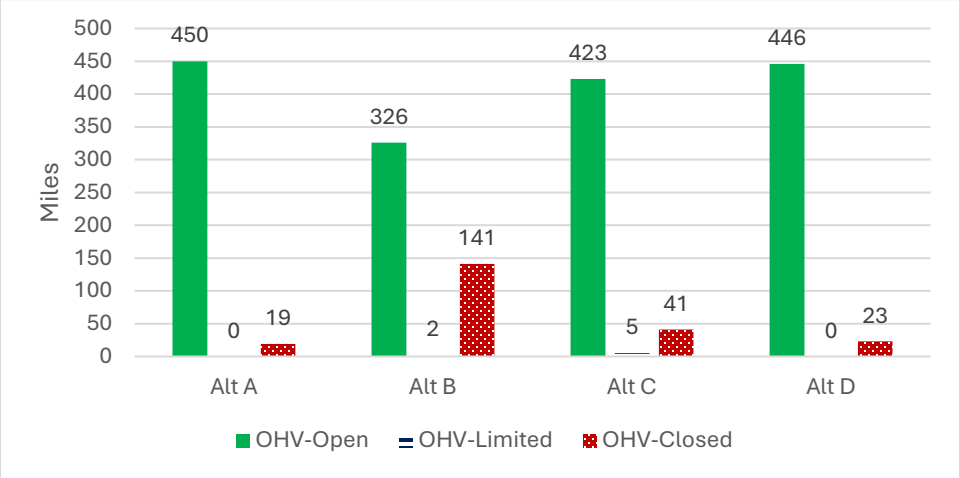


**Figure 1: Miles of Evaluated Routes by Alternative and Designation**

## 2.8. Alternative A

Alternative A consists of the 2008 TMP route designations within the Trail Canyon TMA boundaries. In Alternative A, a total of 473 miles of evaluated routes are designated as OHV-Open, zero miles are OHV-Limited, and 19 miles are OHV-Closed (routes that existed at the time of the 2008 TMP but were left undesignated under that plan; these undesignated routes are now being evaluated for designation). Included in Alternative A's OHV-Open miles are 24.5 miles of primitive routes within WSAs and 6.3 miles of primitive routes within BLM Natural Areas. These primitive routes were designated in the 2008 RMP because "they were considered to serve purposes and needs that could be accommodated while not impairing wilderness suitability" (BLM 2008c) and are available for OHV use. Alternative A would adopt the companion Implementation Guide (Appendix E).

While no changes to OHV-Open routes would occur with Alternative A, continuation of current route use would have effects of the same nature to current levels, but the spatial scope and magnitude of those effects would vary based on route locations. A closure of the 19 miles of missed routes would decrease OHV access opportunities while minimizing adverse effects to other environmental resources. The effects of the OHV-Open route designations were analyzed in the 2008 Kanab Field Office Proposed Resource Management Plan & Final Environmental Impact Statement and would continue under this alternative.

## 2.9. Alternative B

Alternative B would prioritize conservation of sensitive resources. For example, route closures would be prioritized in BLM Natural Areas, lands with wilderness characteristics (LWCs), WSAs, T&E species habitats, and riparian areas to reduce OHV use in sensitive areas. The BLM would not prioritize route closures in areas with no sensitive resources. Fewer miles of routes would be designated open for public OHV use than under any other alternative.

Alternative B would designate 71% (326 miles) as OHV-Open, <1% (2 miles) as OHV-Limited (limited to e-bikes), and 29% (141 miles) as OHV-Closed.

## 2.10. Alternative C

Alternative C would prioritize compatibility between OHV access and conservation of sensitive resources. Route designations for Alternative C were assigned to reduce adverse effects to natural and cultural resources and reduce user conflicts while designating more miles of routes open to OHV use than Alternative B.

Of the evaluated route miles in the TMA, Alternative C would designate 91% (423 miles) as OHV-Open, 1% (5 miles) as OHV-Limited (limited to e-bikes), and 8% (41 miles) as OHV-Closed.

## 2.11. Alternative D

Alternative D would prioritize OHV access and accommodate a range of opportunities and uses while addressing adverse resource effects. Alternative D would designate more miles of routes as OHV-Open than any other alternative.

Of the evaluated route miles in the TMA, Alternative D would designate 95% (446 miles) as OHV-Open, 0% as OHV-Limited, and 5% (23 miles) as OHV-Closed.

## 2.12. Alternatives Considered but Eliminated from Detailed Analysis

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

### 2.12.1. Designate All Routes OHV-Closed

Under this alternative, the BLM would designate all (100%) evaluated routes in the TMA as OHV-Closed. The BLM did not carry this alternative forward for detailed analysis because it would not conform to the applicable land use plan and would not meet the purpose and need for BLM action.

This alternative would not meet the purpose and need because it would eliminate the travel network rather than designating a travel network that provides for OHV use. This alternative

would not conform to the 2008 RMP's goals to maintain existing access, where needed and allowed, to meet public and administrative needs; and to continue compatible traditional, current, and future use of the land by establishing a route system that contributes to protection of sensitive resources, accommodates a variety of uses, minimizes user conflicts, and is sustainable.

### 2.12.2. Designate All Routes Available for OHV Use

Under this alternative, the BLM would designate all (100%) evaluated routes in the TMA as OHV-Open. The BLM did not carry this alternative forward for detailed analysis because it would not conform to the applicable land use plan and would not meet the purpose and need for BLM action.

This alternative would not meet the purpose and need because it would not enhance public lands or protect sensitive resources from adverse effects. Additionally, the regulations at 43 CFR § 8342.1 require designations to be based on the protection of resources on public lands, the promotion of the safety of all the users of public lands, and the minimization of conflicts among various uses of public lands. This alternative would also not comply with the 2017 Settlement Agreement, which states a "route without an identified purpose and need will not be proposed as part of the dedicated travel network" (see Settlement Agreement section 17(a)).

### 2.12.3. Additional Route Closures Alternative

The BLM considered one additional alternative received during the public scoping period, but chose to eliminate it from further analysis as this alternative would close several OHV routes designated as OHV-Open in the BLM's proposed Alternative B in areas not in inventoried LWC. Alternative B has a natural resource emphasis and prioritizes protection of wildlife habitats, natural resources, ecosystems, and landscapes. Going beyond Alternative B, the way this proposed alternative does, does not meets the BLM's defined purpose and need for connectivity and OHV access.

## CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

### 3.1. Overview

This chapter describes the existing condition and trends related to elements of the human environment that may be affected by the route designation alternatives. It also identifies the known and predicted effects related to each issue (DOI 2026) identified in Section 1.6.3 and analyzed in Section 2.10. While the analysis area for each issue is specific to the issue being analyzed, the TMA is the same for all alternatives. For an overview of the TMA setting, see Section 2.4. Implementation of a formal operation and management plan (Appendix E) would help in mitigating or reducing overall network use related effects, despite the projected increased visitation and recreation in the TMA.

### 3.1.1. General Setting and Assumptions

For the purposes of estimating the temporal scope of the effects, the BLM assumes the timeframe for this plan is 20 years to account for effects that may occur over longer timeframes, such as reclamation success. Route maintenance actions performed under this TMP would be performed in a manner that preserves the character, function, and recreation experience the route provides.

For evaluated routes that would be designated as OHV-Open or OHV-Limited under a given alternative, the BLM assumes that impacts of use within the 2008 RMP management decision to allow for vehicle parking for dispersed camping within 150 feet of designated routes would be substantially similar to those impacts associated with the Environmental Impact Statement (EIS) for the 2008 RMP. As part of this TMP the BLM is evaluating 19 additional miles that were missed in 2008 adding to the number of acres evaluated. While the acreage number is different the vehicle parking for dispersed camping is RMP driven and not a TMP decision. This assumption is supported by the route-specific resource data documented during route evaluations which document resources within at least 150 feet of all routes.

The BLM assumes conflicts between different recreation groups in the TMA could occur where they use the same routes to access particular destinations.

None of the alternatives would authorize construction of new routes, designate routes that do not have a purpose and need or do not exist, authorize events, create a destination that would draw new visitors, or authorize an action such as construction of recreation facilities or utility lines.

BLM assumes that while minor numerical errors in the EA may exist because of rounding, the data and numerical values represent the best available information and are accurate for the purposes of disclosing and analyzing the relative potential effects between alternatives. GIS data used is a dynamic data set and is subject to change as new data is received/gathered. BLM will only pull in the new data when substantial changes occur that would affect the analysis.

Finally, for the purposes of this NEPA analyses the assumption, is that the public lands users would operate their OHVs in accordance with the TMP designations and the regulations. The BLM assumes that application of specified operation and management tools provided in the TMP Implementation Guide—such as human-made barriers, route markers, kiosks, and signs to educate OHV users of low-impact and responsible use—would help reduce or prevent visitor behaviors that could otherwise cause adverse effects to resources.

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

## 3.2. ACEC - Issue 1: How would the route designation alternatives impact the important and relevant values of the Cottonwood Canyon ACEC?

The geographic scope of analysis for the Cottonwood Canyon ACEC is the land encompassed within the boundary of the ACEC where the 2008 RMP designated OHV use as limited to designated roads and trails (approximately 3,758 acres) because the relevant and important values identified as needing protection are within that boundary and because effects from the alternatives would not occur in the rest of the ACEC where OHV use is prohibited.

### 3.2.1. Affected Environment

ACEC designations highlight areas where special management attention is needed to protect important and relevant values such as historical, cultural, and scenic values, or fish and wildlife or other natural resources. The Federal Land Policy and Management Act directs the BLM to give priority to the identification and potential designation of ACECs through the land-use planning process. The types of activities allowed within an ACEC depend on the resource and

natural value the area is designated to protect (https://www.blm.gov/programs/planning-and-nepa/planning-101/special-planning-designations/acec-s). The Cottonwood Canyon ACEC (3,758 acres) is the only designated ACEC in the TMA and is managed for its significant scenery, cultural, wildlife, natural processes, and hazard/safety/public welfare values. It is a canyon complex located north of the Kaibab Paiute Reservation, about 3 miles west of Kanab, UT. Approximately 63% of the ACEC is within the Moquith Mountain Wilderness Study Area (for discussion and analysis of impacts to WSAs, see Section 3.6). For more information on this ACEC, see pages 3-101 through 3-102 and Appendix 14 of BLM 2008b. The ACEC contains 3 miles of evaluated routes that are only accessible to vehicles via a locked gate on private land. OHV impacts to the ACEC are minimized due to the limited access to the public.

Current and foreseeable trends and actions in the analysis area affecting the Cottonwood Canyon ACEC include ongoing livestock grazing, recreation, enhancement and preservation of recreational opportunities.

### 3.2.2. Environmental Effects Analysis

The types of effects from OHV use that would diminish any of the ACEC relevant and important values include:

- Degradation of the ACEC's scenic quality.
- Impacts to cultural sites.
- A decline in plant or animal species number and population viability, resulting in the need to list species under the Endangered Species Act or the inability to delist species, based on recovery.
- Habitat loss or adverse modification that contributes to the need to list species under the Endangered Species Act or the inability to delist species, based on recovery.
- Degradation of the ACEC's riparian plant communities.
- Degradation of the ACEC's unique geological features.
- Disturbance or vandalism of the ACEC's watershed resources.

Route use, including incidental use such as parking, passing, and staging, can increase damage and disruption to the natural appearance of landscapes by providing opportunities for route proliferation, illegal off-route landscape damage, littering, and other harmful activities. Routes also impact visual resources through the appearance of contrasting lines where they do not follow natural landscape contours. Changes in color and form from machine-cut backslopes and fill slopes create visible impacts. Potential effects on the vegetation communities, crucial wildlife habitat, and cultural values of the ACEC include trampling of vegetation from off-route motorized or non-motorized use, soil disturbance. route proliferation, and exposure, loss, or damage of cultural resources. Other effects include soil erosion, establishment and spread of noxious weeds from soil disturbance and native vegetation loss, effects of OHV noise on wildlife enhanced risk of wildfire, and enhanced risk for vandalism of water collection facilities or damage to watershed resources.

Indicators of potential OHV route impacts to the important and relevant values of an ACEC include the miles of routes in the ACEC. Figure 2 shows the miles of evaluated routes in each alternative network that are in the Cottonwood Canyon ACEC.

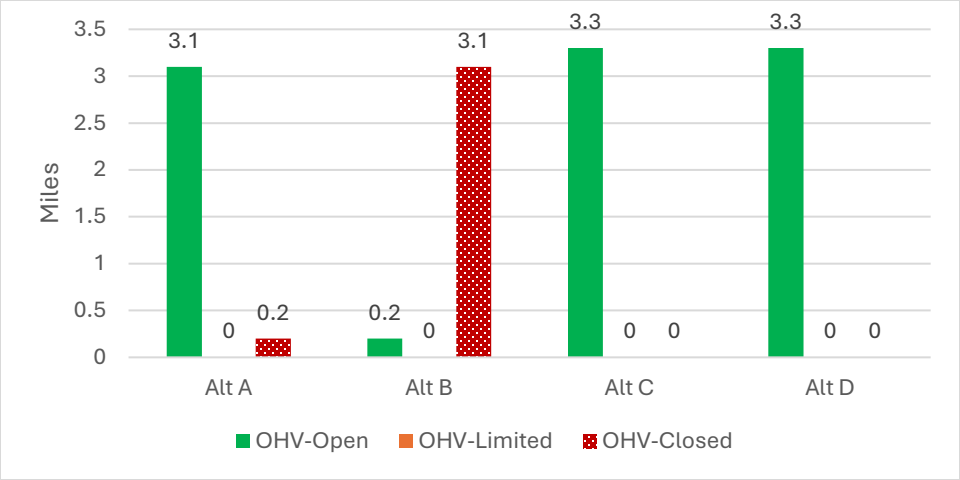


**Figure 2: Miles of Evaluated Routes in Cottonwood Canyon ACEC**

#### 3.2.2.1. Alternative A

Under Alternative A, there would be no route designation changes in the ACEC. All 3.3 miles of evaluated routes in the Cottonwood Canyon ACEC would remain designated as OHV-Open. Effects to the ACEC's relevant and important values from ongoing OHV use (e.g., potential degradation of scenic quality, cultural sites, wildlife habitat, riparian plant communities, unique geological features; disturbance or vandalism of watershed resources; etc.) would reflect current levels.

#### 3.2.2.2. Alternative B

Alternative B would designate just 0.2 miles of evaluated routes within the Cottonwood Canyon ACEC as OHV-Open, a decrease of 3.1 miles compared to Alternative A. Under Alternative B, the same effects on the ACEC's relevant and important values noted above would continue to occur on those routes designated OHV-Open. Overall, the potential for OHV-related impacts to the ACEC under this alternative would be lower than Alternative A and the other action alternatives.

#### 3.2.2.3. Alternatives C and D

Alternatives C and D would each designate 3.3 miles of evaluated routes within the Cottonwood Canyon ACEC as OHV-Open. Under Alternatives C and D, the same effects on the ACEC's relevant and important values noted above would continue to occur on those routes designated for OHV use (OHV-Open or OHV-Limited). Overall, the potential for OHV-related impacts to the ACEC under these alternatives would reflect a continuation of current management as described in the affected environment.

### 3.3. Cultural - Issue 2: How would the route designation alternatives impact cultural resources within the TMA?

The analysis area for impacts to cultural resources consists of a 300 foot corridor centered on all routes under consideration for designation as OHV-Open or OHV-Limited within each travel network alternative because that encompasses both the direct and indirect areas of potential effect for cultural resources through continued public OHV use of route and the limit of vehicle parking for dispersed camping within 150 feet of designated routes.

### 3.3.1. Affected Environment

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

Cultural Resources are identified though cultural resource inventories, which are defined as "a representation of the cultural resource content of a geographical locale" by BLM Manual 8110 – Identifying and Evaluating Cultural Resources. The BLM cultural resource inventory system is composed of three classes of inventory: Class I Existing Information Inventory, Class II Probabilistic Field Survey, and Class III Intensive Field Survey (BLM 2004b). Cultural time periods within the TMA are generally considered as follows (BLM 2008c and Mullins et al. 2018):

**Table 2: Cultural Period Characteristics**

| Cultural Time Period | Timeframe | Characteristics |
|---|---|---|
| Paleoarchaic | 11,500 – 7,000 B.C. | Bands were highly mobile hunter-gatherers with big-game subsistence patterns. Paleoarchaic sites are significant due to scarcity. Few buried components dating to this period have been identified. As the climate shifted, pursuit of a diverse diet became more pronounced and tool traditions would be replaced by Archaic Period styles and technology. |
| Archaic | 7,000 – 100 B.C. | Hunting and gathering lifestyle with subsistence based on small mammals and wild plants. Structures consisted of rock shelters and brush shelters. Populations appear to have increased substantially in the Late Archaic Period (3,000 – 1,000 B.C.). |
| Terminal Archaic/ Early Agricultural | 1,200 – 100 B.C. | Cultural transition to pit house occupancy and shift toward a more agricultural subsistence. Maize-based agriculture evident but not universal in the region. |
| Formative | 100 B.C. – A.D. 1300 | Horticulture practiced. Introduction of bow and arrow, ceramics, and farming with associated semi-sedentary lifestyle and population growth. Larger and more formal pit house settlements developed. |
| Post-Pueblo | A.D. 1300 – 1776 | Gradual phasing out of complex architecture and increase in settlement mobility. Return to hunting-gathering traditions with limited use of ceramics and horticulture. Establishment of Numic socio-cultural groups following collapse of Formative Period cultures in region. Diagnostic artifacts include small unnotched or side notched projectile points and Southern Paiute Brownware ceramics. |
| Spanish-Mexican Period | A.D. 1776 – 1848 | Beginning of period marked by Dominguez-Escalante expedition that passed across the Arizona Strip and |

| | | |
|---|---|---|
| | | southern Utah on their way home to Santa Fe, New Mexico after failing to reach the Franciscan mission in Monterrey, California. Documented use of the Old Spanish Trail through Colorado and central and southwestern Utah for trading between Mexican settlements of southern California and New Mexico. |
| Mormon Colonization Period | A.D. 1850 – 1930 | Mormon colonizers from Salt Lake City settle in southern Utah. As regional Mormon settlements grew and appropriated critical water sources and rangelands for ranching of cattle and sheep, starving Native American tribes began to resist. Development of interconnected settlements with transportation networks connecting ranching operations, springs, streams, and townsites across rangelands. |
| Movie and Tourism Period | A.D. 1930 – Modern Period | Colonizer entrepreneurs and tourism promoters take visitors on hunts and from the Arizona Strip ranches to the North Rim. With railroad and automobile development, tourism in the region flourished. Establishment of Mukuntunweap National Monument, which would become Zion National Monument and then Zion National Park. Film and TV productions at times employed most of the people in Kanab from the 1930s to 1960s. Roads developed to accommodate increase in tourism throughout the region. Livestock ranching continued, though sheepherding gradually converted to cattle from WWII into the 1970s; free grazing practices left rangeland depleted and unproductive, and a series of laws passed over the decades would bring much of the rangeland under control of government agencies. The Navajo continued to utilize the greater region both on their reservation and outside of it. |

The Cottonwood Canyon ACEC, located west of Kanab within the TMA, has cultural resources as one of its relevant and important values (BLM 2008c). The ACEC has high site density with complex sites covering the timespan from the Archaic period into the historic period, with an emphasis on Puebloan archaeology; one site is listed on the National Register (BLM 2008b, Appendix 14).

The BLM's efforts to identify historic properties, analyze effects of the undertaking, and develop a historic properties treatment plan (HPTP) were directed by the 2017 Settlement Agreement and Travel PA. Identification efforts dictated by the Travel PA included identification of an APE for the routes (III.A.1.b), a literature review and cultural resource potential map (III.A.2), site revisits (III.A.3), and Class III inventory (III.A4.b. and Settlement Agreement B.24.a).

Prior to the execution of the Travel PA, BLM consulted with SHPO regarding establishing an Area of Potential Effect (APE) for cultural resources within a 300-foot corridor of each OHV route (i.e. 150 feet on each side of each route's centerline) for approximately 450 miles of route designed as OHV-open in the 2008 RMP. The APE was determined based on the 2008 RMP decision that allows vehicle parking for dispersed camping within 150 feet of designated routes. Following the execution of the Travel PA and the 2017 Settlement Agreement, the BLM maintained this APE. The APE associated with travel routes in the Trail Canyon TMA consists of 15,110 acres on BLM lands.

Prior to the dictated Class III inventories, 4,982 acres (~33%) of the APE had been previously surveyed by various projects and 196 archaeological sites were documented. Class III inventories stipulated by the Settlement Agreement and Travel PA were completed under two separate surveys between 2017 and 2020. The first inventory surveyed 1,936 acres and identified 34 archaeological sites; 19 newly recorded and 15 revisits (Hardin et al. 2018). The second inventory surveyed 5,835 acres and identified 112 archaeological sites; 68 newly recorded and 44 revisits (Karpinski et al. 2021). These surveys included all routes within Cottonwood Canyon ACEC and all routes or portions of routes that are located within the cultural resource potential map's identification of a high potential cultural resource area. A total of 7,771 acres were surveyed as part of the dictated Class III inventories including 6,728 acres of new survey and re-survey of 1,043 acres. A total of 148 archaeological sites were identified; 88 sites were newly recorded; and 56 sites were previously documented sites that were revisited. Overall, 11,710 acres (~77%) of the APE has now been inventoried and 327 archaeological sites documented. This includes past and concurrent inventories.

Current and foreseeable trends and actions in the analysis area affecting cultural resources include livestock grazing, vegetation treatment projects, and increases in public visitation including dispersed camping and OHV use. Public OHV use and associated dispersed camping has resulted in displacement of artifacts, artifact collecting, campfires, vandalism, loss of vegetation, accelerated erosion, exposure and degradation of features, and linear disturbances from unauthorized cross-country travel. All the actions listed have potential to affect historic properties.

The 2008 TMP designated as OHV-Open 281 routes in or proximate to eligible cultural resources, 46 routes in or proximate to not eligible cultural resources, and 2 routes proximate to listed National Register sites. However, the inventory of existing routes considered for designation in this Trail Canyon TMP includes 300 routes in or proximate to eligible resources, 48 routes in or proximate to not eligible cultural resources, and 2 routes proximate to listed National Register sites.

### 3.3.2. Environmental Effects Analysis

There are 327 documented cultural resources in the APE, of which 97 are not eligible for the National Register and therefore definitionally would not be subject to adverse effects as contemplated by the NHPA. The remaining 230 documented cultural resources are listed on, eligible to, or have no eligibility determination for the National Register. 178 cultural resources are physically intersected by routes under the alternatives being considered (Table 4). Up to 149 sites are near (within 150 feet) but not physically intersected by routes (Table 5). When sorted by National Register eligibility and quantified by route designation alternative, the occurrence of cultural resources can be compared between alternatives as displayed in Table 4-6.

**Table 3: Number of Cultural Resources Intersected by Open/Limited Routes**

| Site Status | Alt A | Alt B | Alt C | Alt D |
|---|---|---|---|---|
| National Register Listed | 0 | 0 | 0 | 0 |
| National Register Eligible (or Eligibility Undetermined) | 137 | 95 | 120 | 126 |
| Not Eligible for National Register | 41 | 29 | 36 | 39 |
| Total Sites | 178 | 124 | 156 | 165 |

**Table 4: Number of Cultural Resources within 150 feet of Open/Limited Routes**

| Site Status | Alt A | Alt B | Alt C | Alt D |
|---|---|---|---|---|
| National Register Listed | 0 | 0 | 0 | 0 |
| National Register Eligible (or Eligibility Undetermined) | 93 | 65 | 89 | 90 |
| Not Eligible for National Register | 56 | 43 | 54 | 57 |
| Total Sites | 149 | 108 | 143 | 147 |

**Table 5: Number of Cultural Resources in APE**

| Site Status | Alt A | Alt B | Alt C | Alt D |
|---|---|---|---|---|
| National Register Listed | 0 | 0 | 0 | 0 |
| National Register Eligible (or Eligibility Undetermined) | 230 | 160 | 209 | 216 |
| Not Eligible for National Register | 97 | 72 | 90 | 96 |
| Total Sites | 327 | 232 | 299 | 312 |

Human actions can affect historic properties, intentionally or accidentally, in numerous ways including, but not limited to, vehicular damage to cultural features and artifacts, increased erosion, and by making sites more accessible to vandalism and looting (Spangler and Yentsch 2008; Sampson 2009). Direct and indirect impacts may occur to historic properties from OHV use of routes designated as OHV-Open or OHV-Limited. Illegal activity is another factor that affects historic properties, and public access to cultural resources has potential to increase incidences of crime, such as vandalism and looting with malintent or through negligence. Accidental or intentional adverse effects from everyday OHV related outdoor public recreation activities may also occur, such as surface disturbances associated with dispersed camping, fire rings, trash, and personal waste within cultural sites.

Adverse effects may occur to historic properties if impacts from use of routes designated as OHV-Open or OHV-Limited become intense enough to damage their National Register significance. For example, OHV travel through or immediately adjacent to a historic property may cause soil erosion from treads resulting in exposure and erosion of significant in-situ feature deposits at the time of the activity or incrementally over time, damaging or destroying the important data they may contain and therefore their ability to convey their importance within their cultural context.

Local assessments of site conditions and travel-related impacts at 161 sites indicate that sites adjacent to or crossed by routes are more likely to be impacted by travel and dispersed camping. 60 of the visited sites showed travel-related impacts including, but not limited to, displacement of artifacts, damage to features, loss of soils and vegetation, accelerated erosion, gullying, removal or alteration of historic structures, looting, vandalism, littering, camping within sites, camp fire rings, and off-route travel (Hardin et al. 2018, Karpinski et al. 2021, and Storm 2022).

Assuming a historic property is present on a route, designating that route OHV-Open or OHV-Limited means public OHV users may have the potential to cause effects. Designating routes OHV-Closed may eliminate the potential for public OHV use to cause effects. Travel access restrictions (e.g., OHV-Closed designations) may be effective in reducing unauthorized damage to cultural resources (Hedquist et al. 2014).

Closures of redundant routes were assessed in accordance with Stipulation III.B.1.c. of the 2018 Travel PA for the potential to shift, concentrate, or expand use on open routes. When evaluating potential impacts to cultural resources from route designations and resultant changes in route concentration (if any) the BLM considered numerous factors, including the use level of the route (primary, secondary, or tertiary), the durability of the route surface (i.e., sandy soil, natural gravels, or bedrock), the durability of the cultural resource, the extent of any impacts (minor, moderate, or major), and the reasons users select the route for travel.

Previously documented cultural resources data was recorded during the route evaluation process described in Section 2.4. Cultural resources include archaeological sites that are both eligible and not eligible for the NRHP. Sites that are eligible for the NRHP are often a focus in cultural resources management because they contain important information, distinctive design and/or construction, or are associated with significant events or persons. Route analysis was divided into eligible, not eligible, and National Register-listed cultural resources categories. Indicators of potential impacts on cultural resources from OHV routes include the numbers of routes in proximity to documented cultural sites. Figure 3- Figure 5 show the number of routes in each alternative network that are proximate to various cultural sites.

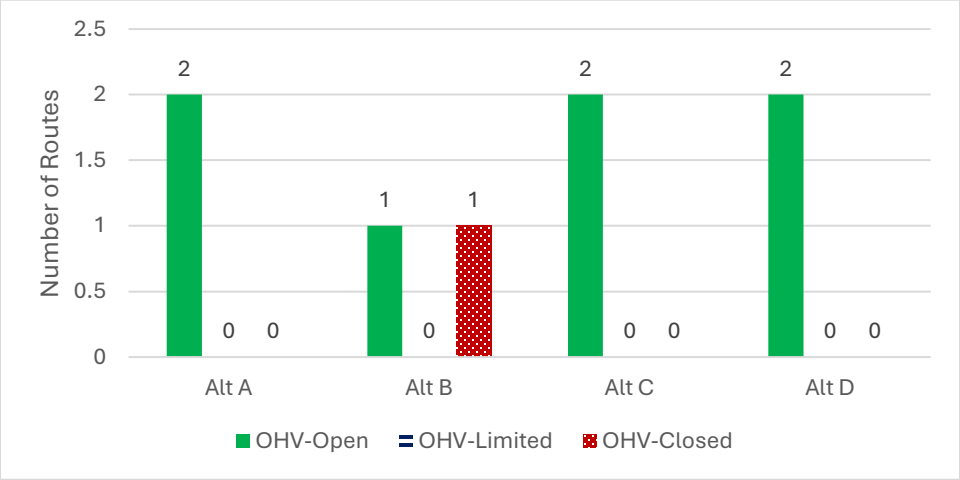


**Figure 3: Number of Evaluated Routes within 2 miles to Listed National Register Sites**

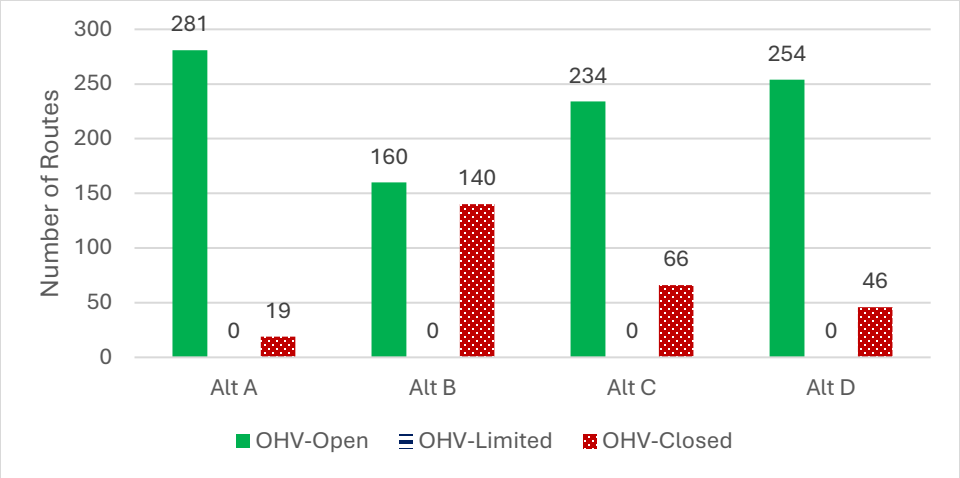


**Figure 4: Number of Evaluated Routes within 150 feet to Eligible Cultural Sites**

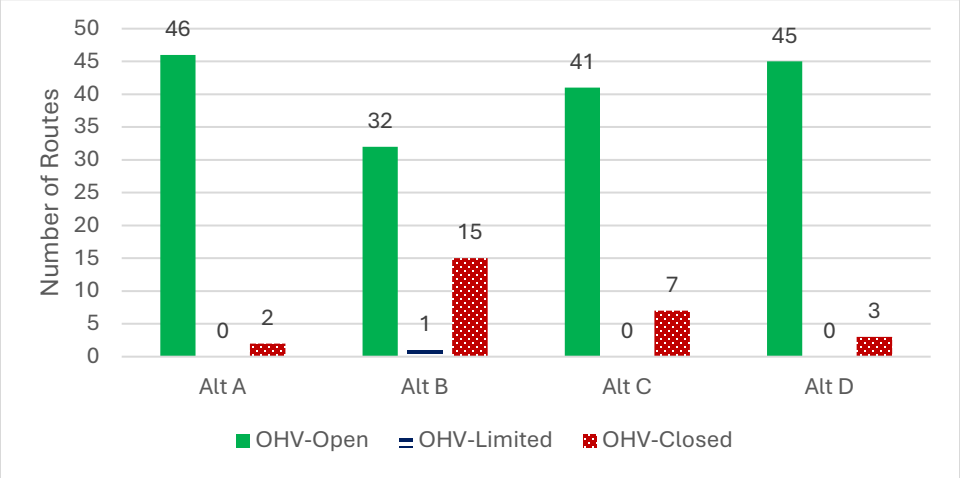


**Figure 5: Number of Evaluated Routes within 150 feet to Not Eligible Cultural Sites**

Based on the above analysis, BLM determined that continued OHV use, including incidental use such as passing, parking, staging, and allowable vehicle parking for dispersed camping may result in adverse effects to 32 historic properties. As directed in Stipulation V. of the Travel PA, the BLM prepared a Historic Properties Treatment Plan which outlines the means for avoiding, minimizing, and mitigating the impacts from the proposed route network. BLM will conduct a combination of treatments with the objective of avoiding, minimizing, and mitigating the potential adverse effects. These treatments can include the protective measures detailed in Appendix E, applied in combinations based on site-specific conditions, to create best management practices for each unique situation. Many historic properties in the treatment plan have features observable from the adjacent vehicle routes and dispersed camp spots; some historic properties have direct impacts from vehicle tires or road maintenance activities; evidence of vandalism and looting are common at most cultural sites in the analysis area, and many sites have accumulated damage from recreational use of the land resulting in wear and tear of routes and dispersed campsite proliferation. All these impacts and more can be reasonably foreseen to continue damaging the historic properties after approval of the TMP unless protective conservation methods are implemented to avoid, minimize, and mitigate the adverse effects.

#### 3.3.2.1. Alternative A

Under Alternative A, there would be no designation changes to OHV-Open routes in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated in 2008. Routes designated as OHV-Open under current management intersect 178 documented cultural resources and are within 150 feet of another 149 documented cultural resources. Alternative A would pose potential adverse effects to 32 historic properties and would require BLM to implement protective measures. Alternative A would have more potential for adverse effects than other alternatives.

#### 3.3.2.2. Alternative B

Routes designated OHV-Open or OHV-Limited would intersect 124 cultural resources and would be within 150 feet of another 108 cultural resources. Alternative B would pose potential adverse effects to 23 historic properties and would require the BLM to implement protective measures. Alternative B would have less potential for adverse effects than other alternatives.

#### 3.3.2.3. Alternative C

Routes designated OHV-Open or OHV-Limited would intersect 156 cultural resources and would be within 150 feet of another 143 cultural resources. Alternative C would pose potential adverse effects to 30 historic properties and would require the BLM to implement protective measures.

#### 3.3.2.4. Alternative D

Routes designated OHV-Open or OHV-Limited would intersect 165 cultural resources and would be within 150 feet of another 147 cultural resources. Alternative D would pose potential adverse effects to historic properties (32) and would require the BLM to implement the most protective measures.

### 3.4. Plants - Issue 3: How would the route designation alternatives impact T&E plant species and their habitat within the TMA?[3]

The analysis area for Special Status Plant Species (T&E and Select BLM Sensitive Species) is the entire TMA plus any contiguous habitat that extends outside the TMA because it is the smallest unit which shows all impacts to special status species and their habitats within the TMA. Each species has their own analysis area listed below.

### 3.4.1. Affected Environment

The TMA includes habitats for three federally listed plant species. Details on habitat, threats, and trends for these species can be found in the "Special Status Species" section of the 2008 Proposed RMP/Final EIS (BLM 2008b, pages 3-37 to 3-50) and NatureServe Explorer (NSE 2024). The affected environment for each species is detailed below.

**Jones cycladenia (*Cycladenia humilis* var. *jonesii*) – Threatened:** Endemic to the Colorado Plateau in Utah and Arizona, Jones cycladenia was listed as threatened on May 5, 1986 (USFWS 1986a) due to the loss and fragmentation of its habitats from OHV and oil, gas, and mineral

[3] The BLM Biological Assessment (BA) analyzed an early version of Alternative D with more open milage than any current alternative. BLM did this to start consultation and has since lowered all alternative's below the consultation mileage. This has led to a difference between the EA alternatives and the BA.

exploration, including uranium mining and tar sands development. At the time of listing, Jones cycladenia was known from four populations with an estimated 338 individuals (7,500 stems); today the species is known from 20 populations with an estimated 3,567 individuals (79,196 stems) in central and southern Utah (Emery, Grand, Garfield, San Juan, and Kane Counties) and northern Arizona (Mohave County) (USFWS 2021). Jones cycladenia is a long-lived clonally reproducing perennial species that is 11–36 centimeters (4.33– 14.17 inches) tall with hairless stems and leaves that are covered by a whitish or bluish waxy coating with pink flowers that bloom from mid-April to early June and occurs between 4,000 and 6,660 feet in elevation, typically on steep slopes, and is restricted to gypsiferous (high gypsum content), saline soils of the Wasatch, Cutler, Summerville, and Chinle formations. This soil is easily degraded, highly erodible, and difficult to rehabilitate after disturbances. Jones cycladenia is found in sparsely vegetated plant communities of mixed desert scrub, juniper, or wild buckwheat-Mormon tea. Surface disturbance in connection with energy (oil, natural gas, and tar sands) and mineral development pose threats to Jones cycladenia. Pollinator availability, small populations, and low levels of sexual reproduction are vulnerabilities that may exacerbate the threats (USFWS 2021). Large swaths of the TMA contain modeled potential habitat for Jones cycladenia (47,217 acres of modeled habitat and 8,743 acres of modeled habitat are within 300 feet of the routes) though there are no known populations within the TMA.

**Siler pincushion cactus (*Pediocactus sileri*) – Threatened:** Siler pincushion cactus was first listed as endangered on October 26, 1979 (USFWS 1979) before being reclassified as threatened on December 27, 1993 (USFWS 1993b). The plant is a small, solitary or occasionally clustered, spherical cactus about 4 inches (10 centimeters) tall and 3-4 inches (7.5-10 centimeters) in diameter (USFWS 1986b). This species is known to occur primarily on BLM lands in Arizona and within Kane County and Washington County, Utah. This cactus is restricted to a specific soil type and has a very restricted range in desert scrub communities at elevations of 2,780 to 5,400 feet (BLM 2008b). It grows mainly on low hills with outcrops of gray or red clay that often have a "badlands" appearance (USFWS 1986b). Threats to this species include disturbance from OHV use, livestock, insecticide spraying, and possibly mining. In addition, species decline has resulted from private collectors and commercial suppliers (BLM 2008b). The TMA contains 5,261 acres (along the southern border of the TMA near Kanab) potential habitat for Siler pincushion cactus, there are there are no known populations of the species within the TMA.

**Welsh's milkweed (*Asclepias welshii*) – Threatened:** Welsh's milkweed was listed as threatened on October 28, 1987 (USFWS 1987). It is a tall, herbaceous plant with stems rising about 40 inches (1 meter) tall. Stems may rise singularly or in clusters with vertical taproots connected by horizontal runners. The leaves are displayed in opposite pairs along the stems (USFWS 1992). Plants grow on open sand dunes between 5,570 and 6,230 feet in elevation. Its Recovery Plan describes the sand dunes on which the species occurs as "islands" of suitable habitat within a "sea" of unsuitable geologic substrates. Pinyon/juniper woodlands, scrub oak, sagebrush, and ponderosa pine communities surround the open dune habitats that support the milkweed. Welsh's milkweed is vulnerable to habitat destruction from OHV use (USFWS 1992). Three distinct populations exist on BLM-managed lands in Kane County, Utah and Coconino County, Arizona. These populations are referred to as Coral Pink, Sand Hills, and Sand Cove; only the Coral Pink population is found in the Trail Canyon TMA. The TMA contains designated critical habitat for the species. Designated critical habitat for Welsh's Milkweed within the TMA encompasses approximately 1313.65 acres of potential habitat. There are no routes that occur

within designated critical habitat, there are 35 acres of critical habitat that occur within the 300-foot road buffer (proximate to the 50 road).

Current and foreseeable trends and actions affecting T&E plants in the analysis area include ongoing livestock grazing, recreation, and enhancement of recreational opportunities.

### 3.4.2. Environmental Effects Analysis

The special status plant species within the TMA evolved with a specific set of habitat characteristics which may be threatened by OHV use and other recreational activities such as roadside camping, hiking, mountain biking, etc. OHV and related anthropogenic use can impact special status plants through direct impacts to individuals such as crushing of plants and illegal collection; indirect changes in physiological processes via fugitive dust deposition leading to reduced stomatal conductance, increased transpiration rates, increased leaf temperature, decreased photosynthetic rates, and decreased reproductive rates (Farmer 1993, Goossens and Buck 2009); and alteration in suitable habitat resulting from destruction of vegetation, soil compaction, soil erosion, spread of noxious weeds, hydrologic changes from headcuts, reduced infiltration, and destruction of biocrusts (Assaeed et al. 2019, Brooks and Lair 2005, Ouren et al. 2007, Trombulak and Frissell 2000). Soil compaction alters habitat suitability for special status plants by changing soil characteristics, reducing pore spaces, and increasing soil density, which results in reduced water infiltration, reduced seedling establishment, and increased competition with roadside weeds more adapted to disturbed conditions (Brooks and Lair 2005). These soil changes exacerbate the introduction and spread of invasive plant species or noxious weeds that result from OHV use. Invasive plants and weeds compete with native plants in or near the evaluated routes. Reduced populations of native species and increases in non-native invasive species can be directly linked to OHV recreation (Ouren et al. 2007). Habitat alteration, fragmentation, and deterioration means increased competition for water, space, and nutrients, which results in decreased reproductive success for special status plants. In this way, the relatively small and disparate effects of individual OHV incursions can take on additive impacts and result in large-scale habitat alteration.

The alternative networks include implementation actions to help manage and maintain designated route opportunities for OHV use in or near special status species habitats that could improve conditions for special status plants. These clarifying, management, and maintenance actions include installing new signs, route maintenance (grading, installing water control structures, surfacing, etc.), route decommissioning or reclamation (including ripping the ground and planting seed, grading/recontouring), installing fencing or barriers, or mulching on closed routes. Best management practices (BMPs) and Species-Specific Conservation Measures would be applied to any areas where future surveys locate any individuals of listed species. If implementation is proposed that falls outside of the previously disturbed area, additional site-specific NEPA would be required before the activity could occur.

Figure 6 and Figure 7 were used to inform effects analysis. They present miles of evaluated routes in or proximate to (within 300 feet of) special status plants habitats, which are used as an indicator of the effects evaluated routes would have on the TMA's special status plants and their habitats.

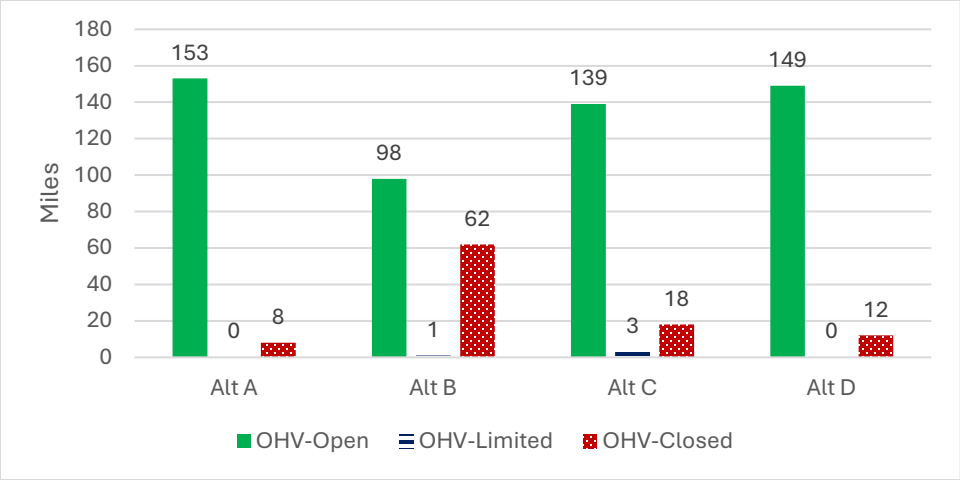


**Figure 6: Miles of Evaluated Routes in Jones Cycladenia Modeled Habitat**

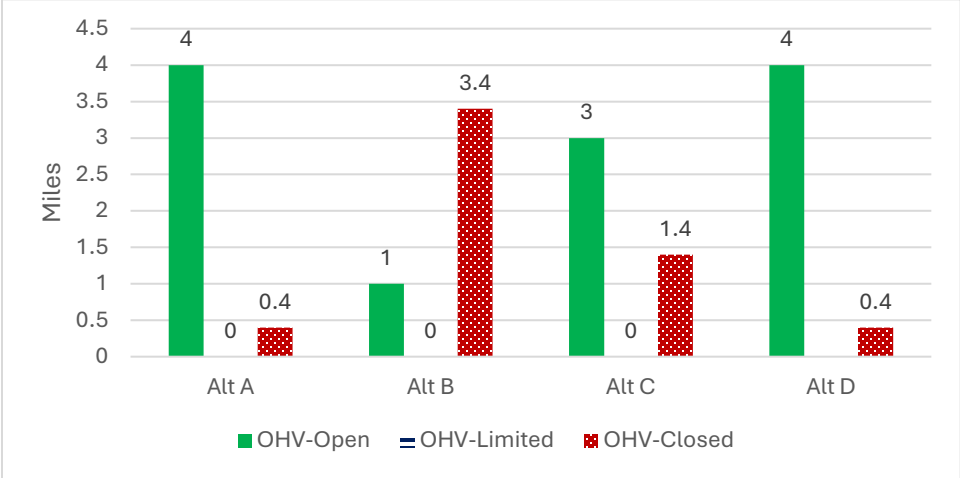


**Figure 7: Miles of Evaluated Routes in Siler Pincushion Cactus Modeled Habitat**

A Biological Opinion was issued by the US Fish and Wildlife service on February 7, 2022. The conclusion of that opinion stated "It is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Mexican spotted owl, Jones cycladenia, Welsh's milkweed, and Siler pincushion cactus or result in the adverse modification of critical habitat for Mexican spotted owl, or Welsh's milkweed."

### 3.4.2.1. Alternative A

Under Alternative A, there would be no designation changes to OHV-Open routes in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated in 2008. Of the 161 miles of evaluated routes in or proximate to (within 300 feet of) Jones cycladenia modeled habitat, 95% (153 miles) would remain designated OHV-Open. Approximately 91% (4 miles) of the 4.4 miles of evaluated routes in or proximate to Siler pincushion cactus modeled habitat would remain OHV-Open. Impacts to special status plant habitat from ongoing OHV and related anthropogenic use would reflect similar impacts to current management.

Because there are no known populations of the Jones Cycladenia and the Siler pincushion cactus with the TMA, impacts from ongoing OHV use (e.g., crushing or damaging, dusting, competition from invasive and noxious weed spread, direct mortality, injury, habitat fragmentation, etc.) would not reflect a change from current use.

#### 3.4.2.2. Alternative B

Alternative B would designate 99 miles of evaluated routes as OHV-Open in or proximate to Jones cycladenia modeled habitat, a 35% (62 miles) reduction from Alternative A. Alternative B would designate 1 mile of evaluated routes as OHV-Open in or proximate to Siler pincushion cactus modeled habitat, a 77% (3.4 miles) reduction compared to Alternative A. The same types of effects on special status plant habitats noted above would continue to occur from those routes designated OHV-Open.

#### 3.4.2.3. Alternative C

Alternative C would designate 142 miles of evaluated routes for OHV use (OHV-Open or OHV-Limited) in or proximate to Jones cycladenia modeled habitat, a 7% (19 miles) reduction from Alternative A. Alternative C would designate 3 miles of evaluated routes for OHV use in or proximate to Siler pincushion cactus modeled habitat, a 31% (1.4 mile) reduction compared to Alternative A. The same types of effects on special status plant habitats noted above would continue to occur from those routes designated OHV-Open or OHV-Limited.

#### 3.4.2.4. Alternative D

Alternative D would designate 149 miles of evaluated routes for OHV use in or proximate to Jones cycladenia modeled habitat, a 3% (12 miles) reduction from Alternative A. Alternative D would designate 4 miles of evaluated routes for OHV use in or proximate to Siler pincushion cactus modeled habitat, and 0.4 mile as OHV-Closed. The same types of effects on special status plant habitats noted above would continue to occur from those routes designated OHV-Open.

## 3.5. Recreation - Issue 4: How would the route designation alternatives impact recreation opportunities in the TMA?

The analysis area for recreation opportunities focuses on the immediate vicinity of the TMA.

### 3.5.1. Affected Environment

The TMA offers substantial opportunities for a variety of outdoor recreation activities, particularly OHV use, hunting, scenic viewing, camping, and hiking, and the number of visitors continues to grow annually, peaking each year during the spring and fall months. The BLM anticipates that motorized and non-motorized visitation and recreation in the TMA will increase over time commensurate with population growth regardless of which alternative is selected, as observed elsewhere in Utah (Leaver 2024). Many areas within the TMA offer distinctive opportunities and have become popular recreation destinations. The Coral Pink Sand Dunes provide a unique setting for OHV use, camping, and hiking. Adjacent to this, the Moquith Mountain Wilderness Study Area receives high levels of use, including spill-over from the Coral Pink Sand Dunes State Park as well as trail-based recreation and cultural resources viewing. The Parunuweap Canyon WSA, North Fork Virgin River WSA, and Orderville Canyon WSA have become more popular as well; they provide outstanding opportunities for primitive recreation and access to trails within Zion National Park. Increased recreational use within the TMA is largely attributable to spill-over from increasing numbers of visitors to the region's state and

national parks, and the Grand Staircase-Escalante National Monument. It is also attributable to population growth in Kane County and nearby areas, particularly St. George, the Wasatch Front and Las Vegas, Nevada. The availability and popularity of modern utility terrain vehicles (UTVs), advertising, and the shift to recreating or living on public lands during the COVID pandemic have influenced recreational use and trends within the KFO.

The TMA has a total of 594 evaluated routes comprising 469 miles that directly provide opportunities for recreational OHV use or provide access for other recreation opportunities. This includes routes designated as part of the 2008 TMP as well as additional existing routes that have been inventoried and evaluated by the IDT as part of this TMP. A total of 277 of the 594 evaluated OHV routes provide primary access to recreation destinations (e.g., campsites, vistas, trailheads, etc.).

**Table 6: Number of Evaluated Routes Currently Providing Primary Access to Recreation Destinations[4]**

| Destination | # Routes |
|---|---|
| Undeveloped Campsite | 209 |
| Vista | 113 |
| Undeveloped Parking Area | 27 |
| Trailhead | 16 |
| Developed Parking Area | 14 |
| Interpretive Site | 9 |
| Staging Area | 3 |
| Technical Vehicle Site/Trail | 3 |
| Developed Campground | 2 |
| Group Campground | 2 |
| Day Use Area | 2 |
| Recreation Fee Area | 2 |
| Designated Campsite | 1 |
| OHV Open Area | 1 |

The TMA has four Special Recreation Management Areas (SRMAs). SRMAs are "Areas that require a recreation investment, where more intensive recreation management is needed, and where recreation is a principal management objective. These areas often have high levels of recreation activity or are valuable natural resources" (BLM 2008b). Within some of these SRMAs are Recreation Management Zones (RMZs), subunits of an SRMA that further delineate specific recreation opportunities and recreation setting characteristics.

**Kanab Community SRMA—Non-Motorized Trails RMZ:** This RMZ, the western portion of which is within the TMA, features a town-accessible hiking trail network that offers outstanding

[4] Some routes provide access to more than one recreation destination.

views and varied terrain for hiking, rock climbing and scrambling, wildlife, viewing, photography, and equestrian activities.

**Moquith Mountain SRMA:** This SRMA consists of two RMZs. The Dunes RMZ focuses on unique OHV experiences on the sand dunes as well as camping along the dune fringes. The Non-Dunes Wooded RMZ offers extensive opportunities for OHV and non-motorized experiences, including hiking, camping, hunting, photography, equestrian, and scenic and cultural viewing.

**Orderville Canyon SRMA:** This SRMA offers spectacular, primitive riparian canyon travel with abundant geologic formations and diverse flora and fauna. Primary activities include canyoneering, rock scrambling and climbing, hiking, backpacking, hunting, camping, photography, viewing nature and wildlife, equestrian, and studying geology.

**North Fork Virgin River SRMA:** This SRMA also offers spectacular, primitive riparian canyon travel with abundant geologic formations and diverse flora and fauna. Primary activities include canyoneering, rock scrambling and climbing, hiking, backpacking, hunting, camping, photography, viewing nature and wildlife, equestrian, and studying geology.

**Table 7: Special Recreation Management Areas in the TMA**

| SRMA | BLM Acres | Miles of Evaluated Routes in SRMA |
|---|---|---|
| Kanab Community SRMA | 3,946 | - |
| Moquith Mountain SRMA | 14,927 | 29 |
| North Fork Virgin River SRMA | 1,070 | - |
| Orderville Canyon SRMA | 1,945 | 0.5 |

The BLM administers numerous SRPs within the TMA for a range of authorized commercial activities and events. These consist of but are not limited to vehicle-based tours, activities, and events (including photography workshops, scenic driving tours, and OHV tours and gatherings), hunting, bicycle tours, canyoneering, backpacking, and outdoor education. Consistent with BLM Utah Statewide and Site-Specific Stipulations developed for SRPs, all OHV use associated with SRP's is limited to routes designated as OHV-Open or OHV-Limited.

The evaluated routes throughout the TMA provide vehicle access to dispersed camping opportunities adjacent to its alignment. In accordance with the 2008 RMP, REC-27 specifically allows vehicle parking for dispersed camping within 150 feet of designated routes. Per BLM route evaluations, approximately a third of the evaluated routes access dispersed campsites at one or more places along the route's length. Impacts from dispersed camping were considered during route evaluations and alternative designations. In some cases, mitigation measures were also identified to minimize impacts caused by dispersed camping on open routes. A lack of vehicle-accessed camping opportunities can result in overcrowding, user conflict, and decreased visitor satisfaction which is inconsistent with targeted recreation outcomes in the RMP.

Current and foreseeable trends and actions affecting recreation in the analysis area are as follows: livestock grazing, increases in public visitation, enhancement of recreational opportunities through the development of recreational facilities; residential and commercial development, and vegetation treatment projects.

Effects to recreation commonly stem from conflicts among route users, including recreationists, grazing permittees, and landowners. BLM assumes user conflicts may occur throughout the TMA, being more frequent in areas of concentrated use and areas where both motorized and nonmotorized uses occur.

### 3.5.2. Environmental Effects Analysis

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

Based upon trends within the KFO and statewide, it is highly likely that visitation and demand for recreation opportunities will continue to increase, with visitors continuing to seek a diverse mix of motorized and non-motorized opportunities. Users seeking non-motorized recreation experiences (e.g., hiking, biking, canyoneering, horseback riding, etc.) may in some cases benefit from a travel network that closes more OHV routes, while users seeking OHV-centric opportunities would benefit more from a network with more OHV-Open designations. Conversely, users seeking non-motorized recreation opportunities in remote environments also may benefit from the access afforded by a more expansive, diverse route network. Provision of a variety of motorized and non-motorized opportunities would enhance user safety and experience by separating motorized users from non-motorized users (e.g., reducing or eliminating encounters between OHV and equestrian or mountain bike users). OHV literature indicates that user conflict occurs within the OHV group both between and within sub-groups (motorcycles, all-terrain vehicles (ATVs), UTVs, and full-sized vehicles). ATV/UTV riders and motorcyclists view each other's group behavior as somewhat problematic, albeit with a low intensity of conflict. Drivers of full-sized vehicles perceive the most conflict and experience decreased enjoyment as a result, while ATV/UTV riders generally have the highest tolerance for both fellow riders and other sub-groups (Albritton et al. 2009). Conflict within groups is highest among drivers of full-sized vehicles but still lower than inter-group conflict.

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

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

Indicators of potential travel route designation impacts on recreation opportunities include the number of routes providing access for those opportunities and activities. Figure 8- Figure 12

show the number of routes in each alternative network that provide access for the various recreation opportunities and activities available in the TMA.

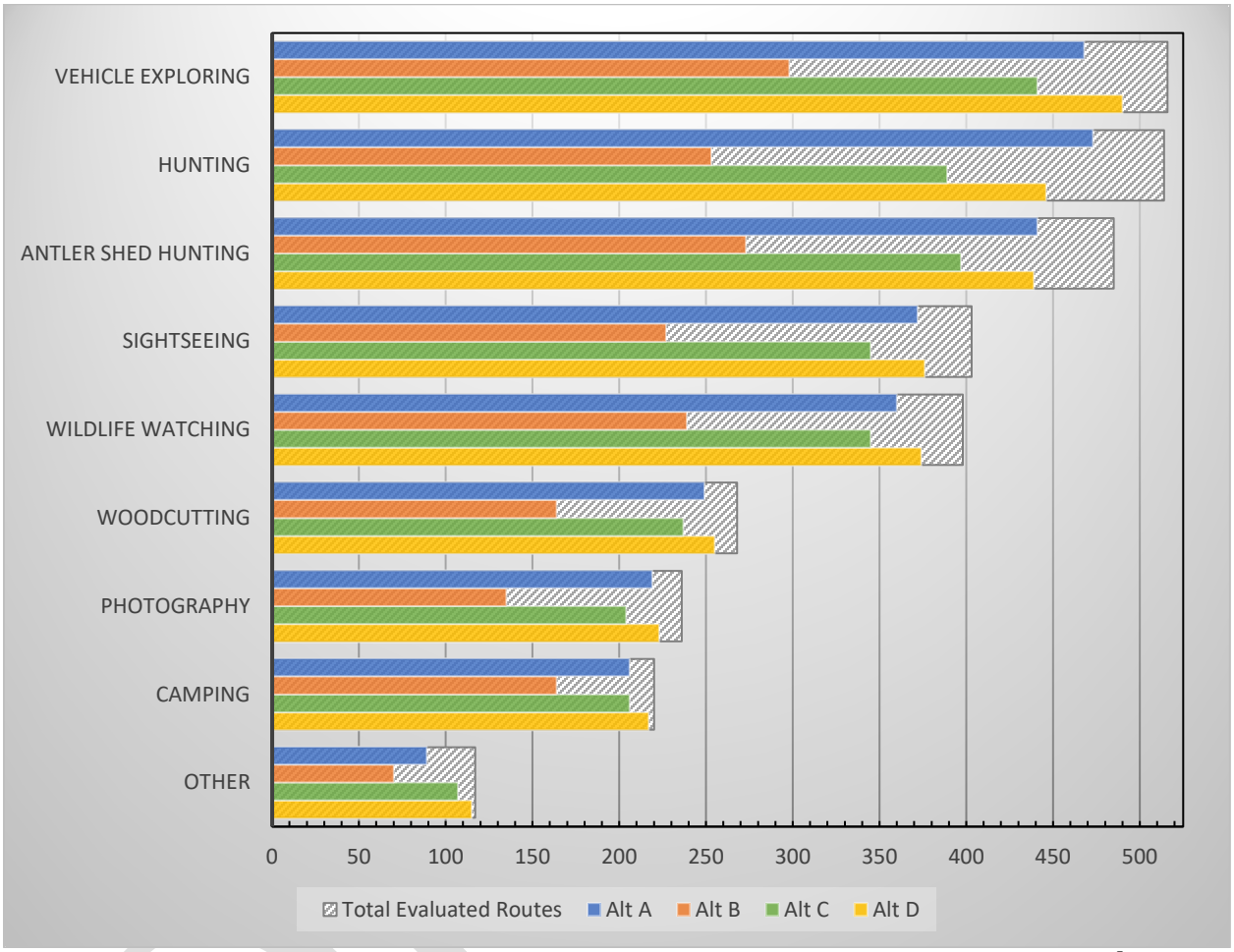


**Figure 8: Number of Evaluated Routes Providing Access for Popular Motorized Activities[5]**

[5] "Other" activities: bicycling/mountain biking, cultural/historical viewing, shooting/archery, rock crawling, Christmas tree cutting (personal use), hill climbing, rock hounding, pine nut picking, and geocaching

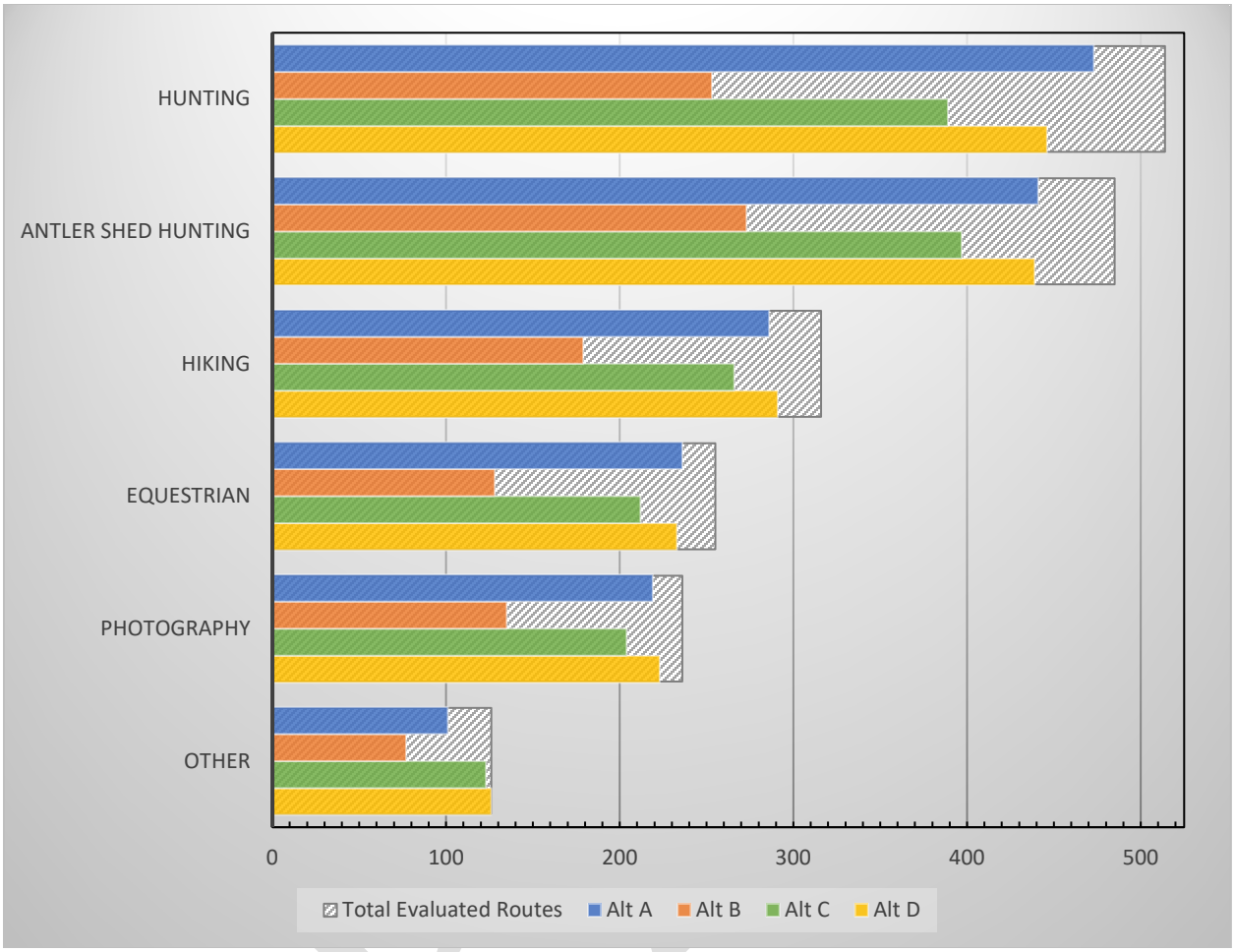


**Figure 9: Number of Evaluated Routes Providing Access for Popular Non-Motorized Activities[6]**

[6] "Other" activities: canyoneering, backpacking, cultural/historical viewing, birding, trail running, sledding, rock climbing, paintball, historic reenactment, and swimming

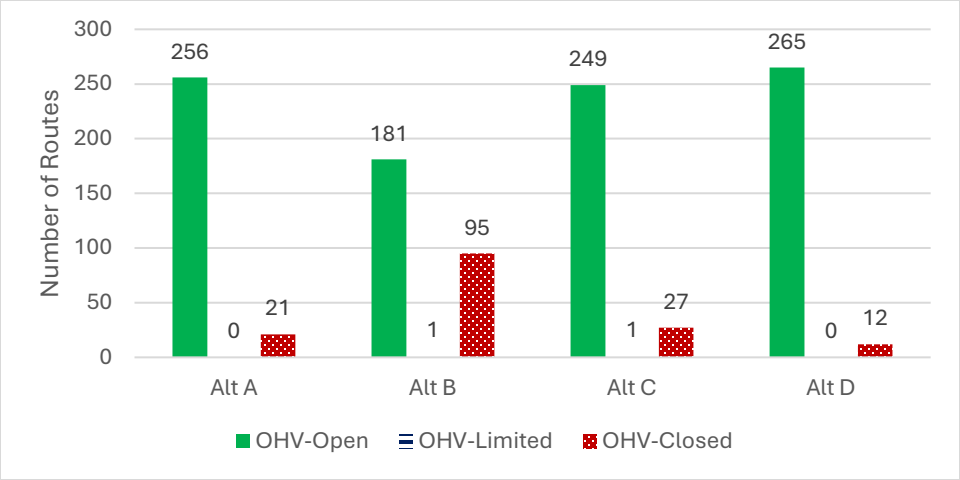


**Figure 10: Number of Evaluated Routes Providing Primary Access to Recreation Destinations[7]**

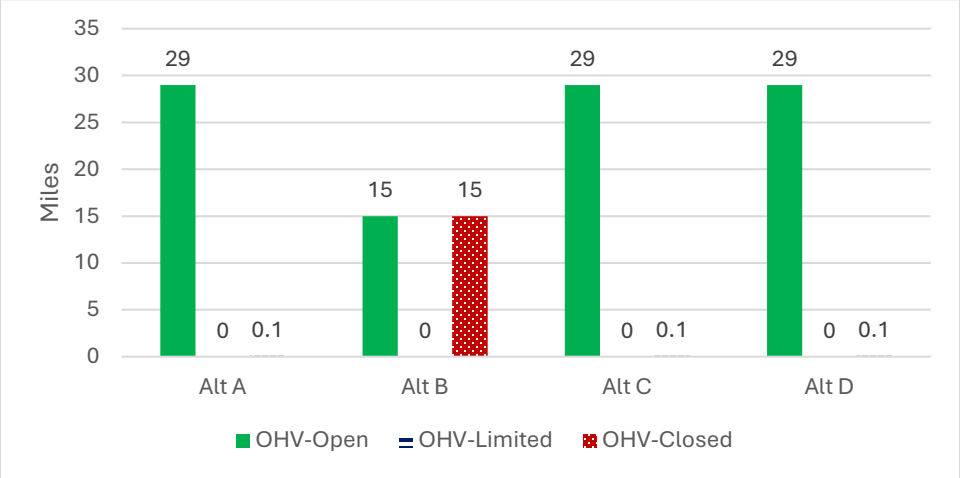


**Figure 11: Miles of Evaluated Routes in Moquith Mountain SRMA**

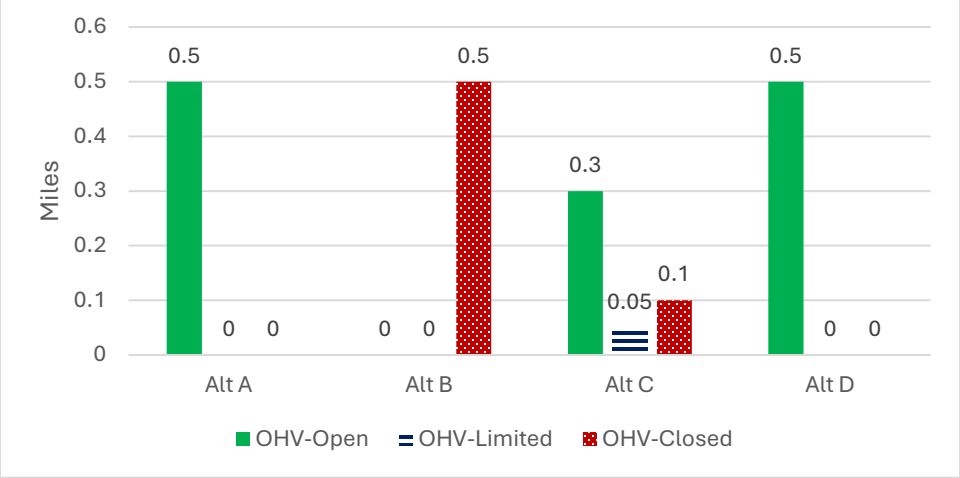


**Figure 12: Miles of Evaluated Routes in Orderville Canyon SRMA**

Note: Kanab Community and North Fork Virgin River SRMAs do not have any evaluated routes within them; therefore, they are not included in the analysis.

#### 3.5.2.1. Alternative A

Under Alternative A, there would be no designation changes to OHV-Open routes in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated in 2008. Of the 277 evaluated routes accessing recreation destinations within the TMA, 92% (255 miles) would remain designated as OHV-Open in this alternative. 29 miles of evaluated routes within the Moquith Mountain SRMA would remain designated for OHV use and 0.1 miles would be designated OHV-Closed. 0.5 miles within the Orderville Canyon SRMA would remain designated OHV-Open. With 96% (450 miles) of the overall evaluated route network within the TMA remaining open to OHV use, effects on user access and conflicts from ongoing OHV use would remain similar to current levels.

#### 3.5.2.2. Alternative B

Alternative B would designate 182 routes accessing recreation destinations for OHV use, a 29% (80 mile) decrease from Alternative A. Under Alternative B, there would be a reduction in routes providing access for popular recreation activities ranging from 27% (75 miles) for camping to 49% (136 miles) for hunting, though there would be very little change in access to activities for which there are sparse recreation opportunities. Of the evaluated routes within the Moquith Mountain SRMA, Alternative B would designate 15 miles as OHV-Open, a 48% reduction from Alternative A. Within the Orderville Canyon SRMA, Alternative B would close the 0.5 miles of evaluated routes. Under Alternative B there would be a reduction in access for popular non-motorized activities ranging from 41% for shed hunting to 52% for equestrian, with an average reduction in access of 40% for other non-motorized activities for which there are sparse opportunities. Overall, Alternative B would have the lowest potential of any alternative for OHV and non-motorized user conflicts within the SRMAs and the TMA as a whole. However, it would also provide the least OHV-facilitated access for recreation opportunities compared to the other alternatives.

For Alternative B, some routes would be closed that currently provide unique recreational opportunities (e.g., access to a specific canyon). Closure of some of these routes may concentrate users to the more populated and well-traveled areas. Conversely, Alternative B could avoid adverse impacts to certain site-specific resources (e.g., specific cultural sites) that provide unique opportunities by virtue of being remote, currently lightly visited, or relatively intact in setting and condition. Additionally, protection of certain areas due to reduction of access would help to address some use conflicts (e.g., UTV use in culturally sensitive areas). Last, some routes might be rerouted to protect cultural sites, and during such rehabilitation and construction there might be periods of interrupted recreation access.

#### 3.5.2.3. Alternative C

Alternative C would designate 250 routes accessing recreation destinations for OHV use (OHV-Open or OHV-Limited), a 2% decrease from Alternative A. Under Alternative C, there would be a reduction in routes accessing the TMA's most popular recreation activities ranging from 1% (camping) to 18% (hunting), though there would be little/no change in access to activities for which there are sparse opportunities. Of the evaluated routes within the Moquith Mountain SRMA, Alternative C would designate 29 miles for OHV use, a 0.2-mile reduction compared to Alternative A. Within the Orderville Canyon SRMA, Alternative C would designate 0.4 miles of

[7] Some routes provide access to more than one recreation destination.

evaluated routes for OHV use, a 0.1-mile decrease from Alternative A. Under Alternative C there would be a reduction in access for popular non-motorized activities ranging from 8% (hiking and photography) to 18% (hunting), with an average increase in access of 3% for other nonmotorized activities for which there are sparse opportunities. Within the SRMAs, Alternative C would have similar potential as Alternative A for OHV and non-motorized user conflicts. Within the TMA, Alternative C would have lower potential than Alternatives A and D but higher potential than Alternative B for user conflicts. However, it would also provide less OHV-facilitated access for recreation opportunities than Alternatives A and D.

Alternative C could provide a diversity of recreation opportunities and might accommodate more user groups, as compared to B. Alternative C could result in less user conflicts than D due to some separation of uses.

#### 3.5.2.4. Alternative D

Alternative D would designate 265 routes accessing recreation destinations for OHV use, a 4% increase from Alternative A. Under Alternative D, the number of routes designated for OHV use accessing various recreation activities would range from a reduction of 6% (hunting) to an increase of 5% (vehicle exploring); there would be little/no change in access to activities for which there are sparse opportunities and, as in Alternative C, increases for a few activities. Within the Moquith Mountain and Orderville Canyon SRMAs, 100% of the evaluated routes would be designated for OHV use as in Alternative A. Within the SRMAs, Alternative D would provide similar access and have similar potential as Alternative A for ongoing OHV and non-motorized user conflicts. Under Alternative D access for popular nonmotorized activities would range from a reduction of 6% (hunting) to an increase of 1% (hiking), with an average increase in access of 6% for other nonmotorized activities for which there are sparse opportunities. Within the TMA as a whole, Alternative D would have similar potential to Alternative A but higher potential than the other action alternatives for OHV and non-motorized user conflicts within the SRMAs and the TMA. It would also provide a similar level of OHV-facilitated access for recreation opportunities to Alternative A and a higher level of access compared to the other action alternatives.

Alternative D would increase route availability, compared with B and C, and might therefore decrease congestion on some routes. However, route density would be the highest for this alternative, and would reduce the opportunity to experience intact landscapes. High route density, combined with less differentiation of uses (as compared to Alternatives B and C), would increase the potential for user conflict. Higher route density fragments wildlife habitat and could reduce the quality of related recreation such as wildlife viewing and hunting.

## 3.6. Soils - Issue 5: How would the route network alternatives impact soil stability?

The analysis area for soils is the TMA because it is the smallest unit which shows all impacts to soils within the TMA.

### 3.6.1. Affected Environment

Soils serve an important role in the TMA, as many resources and uses depend on soil health. Soil types in the TMA, which vary based on landform, geology, vegetation, and microclimate, can range from shallow, rocky soils on plateaus, cliffs, and ridges to deeper soils on alluvial fans and in valley bottoms. The area also has saline and erodible soils; salt and sediment yield are

concerns within the Colorado River Basin (see Section 3.10). Portions of existing routes cross fragile soils (i.e., soils that are especially susceptible to erosion), particularly in the North Fork area.

Additionally, the TMA's biological soil crusts (also called cryptogamic or cryptobiotic soils), composed primarily of cyanolichens and cyanobacteria, serve as important soil stabilizers or living mulches that retain soil moisture and discourage the growth of invasive weeds (BLM 2008b). Cryptobiotic soils, also known as biological soil crusts (Belnap et al. 2001), can play important roles in maintaining soil and ecosystem health and are present in some of the analysis area. In desert soils, physical soil crusts bind soil particles together reducing the potential of erosion. Repeated disturbance or trampling of biological crusts can permanently destroy the living filaments of the organisms, preventing the recovery of the crusts. Blowing dust from disturbed soils can cover nearby crusts, depriving them of needed sunlight, ultimately leading to the death of the living organisms that comprise the crusts. Environmental factors can also affect soils and soil trends in the TMA, including wildfires and changes in vegetation cover due to precipitation amounts.

Overall, the TMA has 3 miles of evaluated routes located within areas with fragile soils.

Current and foreseeable trends and actions affecting soils in the analysis area include precipitation amounts and associated vegetative cover, vegetation treatment projects, ongoing livestock grazing and wildfires.

### 3.6.2. Environmental Effects Analysis

Compaction from OHV use increases soil bulk density and decreases porosity (Ouren et al. 2007). Loss of porosity diminishes soils' ability to support vegetation by inhibiting root access to nutrients and water and reduces the infiltration and availability of water. Ouren et al. concludes, "As vegetative cover, water infiltration, and soil-stabilizing crusts are diminished or disrupted, the precipitation runoff rates increase, further accelerating rates of soil erosion" (2007). This increases potential erosion and sediment transport into water bodies and riparian areas. Particularly on slopes, OHV use can accelerate water erosion by decreasing infiltration rates, loosening surfaces, and channeling run-off (Brooks and Lair 2005). These types of effects are concentrated adjacent to low-traffic, rarely maintained or unmaintained routes which are usually narrow. Routes currently experiencing low use, such as two-tracks, that have vegetation encroaching into the roadway and vegetated areas alongside routes would experience a higher potential for soil loss due to erosion, increased compaction and loss of soil stability with increasing OHV use.

Off-route vehicle travel, such as passing or parking, can remove soil-stabilizing agents, such as vegetative cover, soil crusts, and woody debris, and increase soil compaction and erosion. Compaction or erosion could increase from route maintenance (e.g., surface and ditch blading.), reclamation (e.g., raking), and sign placement (e.g., digging post holes). Compaction would have longer-term effects up to 20 years, but elevated rates of erosion should return to (or in the case of reclamation be reduced below) their original level. Compaction or erosion could be reduced by designating as OHV-Closed routes disruptive to erosive and cryptobiotic soils. These long-term beneficial effects would last for the estimated 20-year lifetime of the TMP.

Indicators of potential OHV route impacts on soil stability include miles of routes mapped as fragile soils. Figure 13 shows the miles of evaluated routes in each alternative network that are mapped as fragile soils.

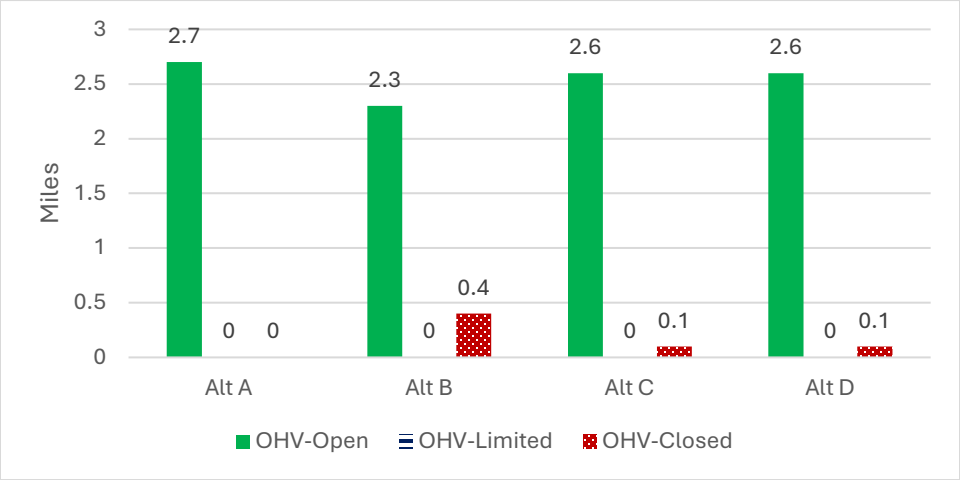


**Figure 13: Miles of Evaluated Routes Mapped as Fragile Soils**

#### 3.6.2.1. Alternative A

Under Alternative A, there would be no designation changes to OHV-Open routes in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated in 2008, of which less than 0.1 miles are in fragile soils. Impacts to soils from ongoing OHV use (e.g., increased soil compaction and susceptibility to erosion, surface rutting from OHV use during wet periods, increased sedimentation into waterways, increased dusting of vegetation, etc.) would reflect similar impact continuation of current management.

#### 3.6.2.2. Alternative B

Alternative B would designate 2.3 miles of evaluated routes in areas mapped as fragile soils as OHV-Open, a decrease of 0.4 miles compared to Alternative A. Under Alternative B, the same types of effects on soils from OHV use noted above would continue to occur on those routes designated OHV-Open. Overall, this alternative would have lower potential than Alternative A and the other action alternatives for impacts to fragile soils within the TMA.

#### 3.6.2.3. Alternatives C and D

Alternatives C and D would designate 2.6 miles of evaluated routes mapped as areas of fragile soils as OHV-Open, a decrease of 0.1 miles compared to Alternative A. Under Alternatives C and D, the same types of effects on soils from OHV use noted above would continue to occur on those routes designated OHV-Open. Overall, Alternatives C and D would have slightly lower potential than Alternative A for impacts to fragile soils within the TMA.

### 3.7. Special Designation, WSA - Issue 6: How would the route designation alternatives impact size, apparent naturalness, and outstanding opportunities for solitude or primitive and unconfined recreation in WSAs within the TMA?

The analysis area is BLM WSAs within the TMA because the WSA bounds the character that has potential to be affected by travel management decisions.

### 3.7.1. Affected Environment

Five WSAs within the TMA were established under the authority of Section 603(c) of FLPMA and are being managed to preserve their wilderness values. Travel by motorized vehicles is allowed within the WSAs primitive routes identified during the original wilderness inventory compiled by the BLM in 1980 (BLM 1980), unless otherwise restricted through a land use planning (i.e., RMP) level decision. A decision in the 2008 RMP stipulates,

> Where routes remain available for motorized use within WSAs, such use could continue on a conditional basis. Use of the existing routes in the WSAs ("primitive routes" when located within WSAs) could continue as long as the use of these routes does not impair wilderness suitability. . .. If Congress designates the area as wilderness, the routes will be closed. In the interim, if use and/or non-compliance are found through monitoring efforts to impair the area's suitability for wilderness designation, BLM would take further action to limit use of the routes or close them. The continued use of these routes, therefore, is based on user compliance and non-impairment of wilderness values (WSA-4). (BLM 2008c, p. 126)

In total, the TMA contains 25 miles of evaluated primitive routes within WSAs that were included as part of the 2008 TMP. Within the Trail Canyon TMA, no additional routes within WSAs have been proposed for designation by the IDT. The five WSAs within the TMA are as follows:

**Canaan Mountain WSA:** Located 20 miles west of Kanab in southwestern Kane County. The WSA borders the BLM Cottonwood Point Wilderness in northwestern Arizona for about 5 miles along the Arizona state line and adjoins Zion National Park on the WSA's northeast boundary for about 4 miles. The WSA features Canaan Mountain, an plateau that rises 2,000 feet above surrounding land and has a quality of remoteness and naturalness not found elsewhere in the immediate region. The WSA also has shallow lakes, springs, and perennial streams (BLM 2008b). Special features include a historic lumber mill site and scenery such as the expansive, intact plateau, waterfalls in deep narrow canyons, and Canaan Mountain's finger-like projections with edges that fall away dramatically (BLM 1991b).

**Moquith Mountain WSA:** Located 4 miles west of Kanab in southwestern Kane County, just north of the Arizona state line and the Kaibab Indian Reservation. Coral Pink Sand Dunes State Park borders most of the WSA along its western boundary. Elevations range from 5,000 feet to 7,000 feet. The variable topography of the WSA includes the Vermilion Cliffs, a portion of the Coral Pink Sand Dunes, rocky tableland, steep cliff canyons, and Moquith Mountain. Other features include perennial streams, hanging gardens, isolated stands of ponderosa pine and aspen, large alcoves, shifting sand dunes, and prehistoric sites. Different portions of the WSA provide outstanding opportunities for solitude and primitive and unconfined recreation, including hiking, backpacking, horseback riding, hunting, photography, and sightseeing (BLM 2008b). Supplemental values include geological, ecological, archaeological, and scenic features such as the Coral Pink Sand Dunes, threatened and endangered plants, relict stands of Quaking Aspen and Douglas Fir, the South Fork Indian Canyon Pictographs, and the colorful red and orange cliffs of Kayenta and Moenave formations (BLM 1991b).

**North Fork Virgin River WSA:** Located 45 miles northwest of Kanab in western Kane County along the eastern boundary of Zion National Park. It is also bordered by state and private land.

Elevations range from 5,400 feet to 6,900 feet. The North Fork of the Virgin River flows westward for 1.5 miles through a canyon in the southern part of the WSA. The WSA is "essentially natural and largely appears as an untouched bench cut by a deep canyon system with outstanding scenic values," much like those of adjacent Zion National Park (BLM 2008b). The winding canyon floor offers outstanding opportunities for solitude and primitive and unconfined recreation. Supplemental values of the WSA include scenery and public access. Special features include sensitive animal and plant species that occur within the area, such as bald eagle, peregrine falcon, 12 additional animal species, and 4 plant species (BLM 1991b).

**Orderville Canyon WSA:** Located 40 miles northwest of Kanab in western Kane County along the eastern boundary of Zion National Park. It is bounded on the east by private lands. The WSA, with elevations range from 5,100 feet on the canyon floor to 6,600 feet at the southwest edge, has a rugged topography and is an deep canyon system with outstanding scenic values similar to adjacent Zion National Park. The WSA contains a 2-mile segment of the upper reaches of Orderville Canyon and its tributary canyons, a system which provides outstanding opportunities for solitude along the canyon floors. The WSA also contains the characteristic of naturalness and much of it offers outstanding opportunities for primitive and unconfined recreation. Special features include sensitive animal and plant species that occur within the area, such as bald eagle, peregrine falcon, 13 additional animal species, and 4 plant species (BLM 1991b).

**Parunuweap Canyon WSA:** Located 25 miles northwest of Kanab in western Kane County along the eastern boundary of Zion National Park. Elevations range from 4,800 feet in canyon bottoms to 6,600 feet on Harris Mountain at the southern end of the WSA. Parunuweap Canyon and its steep tributary canyons, which characterize the WSA, and small areas of sand dunes and more densely vegetated areas offer opportunities for solitude. Portions of the WSA offer opportunities for primitive and unconfined recreation, including backpacking, rock climbing, photography, and sightseeing (BLM 2008b). Special features include scenery comparable to that of Zion National Park, and the historical Elephant Gap/Foote Ranch Road (BLM 1991b).

**Table 8: Wilderness Study Areas in the TMA**

| WSA | BLM Acres | Miles of Evaluated Primitive Routes |
|---|---|---|
| Canaan Mountain WSA | 4,954 | 0.2 |
| Moquith Mountain WSA | 15,234 | 9 |
| North Fork Virgin River WSA | 1,070 | - |
| Orderville Canyon WSA | 1,945 | 0.1 |
| Parunuweap Canyon WSA | 30,899 | 16 |

The 2008 RMP states, "Motorized travel in the WSAs has been a controversial issue and a management concern" because of unauthorized cross-country OHV activity and the unauthorized use of closed routes. The 2008 RMP also makes clear that if off-route OHV use and related impacts to WSAs were to continue, the BLM could implement additional management actions, including OHV travel restrictions or closures.

The most controversial primitive routes in the TMA are located in the Moquith Mountain and Parunuweap Canyon WSAs. An August 29, 2000, Federal Register Notice (65 FR 52437) states

that OHV use in these WSAs is limited to primitive routes identified during the original wilderness inventory compiled by the BLM in 1980 (BLM 1980). Although very popular with motorized users, these primitive routes pose potential resource conflicts with cultural, wildlife, and vegetation resources. Both of these WSAs have experienced recurrent off-route travel in the past which has resulted in impacts primarily to vegetation resources. The 2008 RMP did not allow for continued OHV use on all of the primitive routes within WSAs. There are 7.6 miles of primitive routes that were not designated for OHV use in the 2008 RMP which are disputed by groups and individuals favoring continued OHV access. One primitive route within the Moquith Mountain WSA accesses a popular viewpoint on the Kaibab Paiute reservation just over the state line in Arizona. In order to resolve a conflict with tribal resource management goals and objectives the BLM has disallowed continued OHV use on this primitive route. To discourage unauthorized use of this route, BLM has installed and maintains a section of wooden barrier fence where the closed route leaves the primitive route. This barrier is sometimes removed by the public to gain access to the viewpoint.

Other controversial primitive routes in the Parunuweap Canyon WSA were not designated in the 2008 RMP due to their duplicative nature or due to resource conflicts and adverse effects to riparian, cultural and threatened wildlife resources. Cumulatively, the BLM currently assesses that wilderness characteristics of WSAs within the TMA have not degraded, and WSA suitability for preservation as wilderness has not been impaired by ongoing OHV use.

Current and foreseeable trends and actions in the analysis area affecting WSAs include livestock grazing and related improvements and recreational use. Recreation, including OHV use, has the potential to affect the WSAs' important values, since recreation use is projected to increase regardless of alternative chosen.

### 3.7.2. Environmental Effects Analysis

Continued OHV use within these WSAs may contribute to the degradation or loss of existing wilderness characteristics as a result of travel-related impacts such as vehicle noise, wheel tracks, creation of dispersed camp sites, resource damage on or along travel routes, and expanded human presence. OHV access and the presence of OHVs can also lead to a loss of solitude and opportunities to experience primitive and unconfined recreation. Resource damage can occur near travel routes from vehicle passing, parking, staging, and the creation of social trails, etc., potentially causing adverse effects that may result in degradation of naturalness. Conversely, primitive routes within WSAs that maintain ongoing OHV opportunities could help decrease OHV user inclination to travel off-route and degrade natural character. Limiting OHV use to existing primitive routes (where motorized travel is allowed), would confine soil and vegetation disturbance caused by motor vehicles to those routes and result in no change to the natural character of WSAs. TMP implementation actions such as the placement of barriers for closed routes, signing[8], and restoration/maintenance[9] from violations and emergencies would result in localized disturbances that could temporarily contribute to degradation of naturalness.

8 Per BLM Manual 6330, "Motorized/mechanized primitive routes may be signed only to the extent necessary to prevent resource damage or users getting lost" (BLM 2012c).
9 Per BLM Manual 6330, "No improvement or maintenance of any primitive routes will be permitted to facilitate recreational motor vehicle or mechanized vehicle use in WSAs if it does not meet the non-impairment standard or one of the exceptions" (BLM 2012c).

Routes closed to OHV travel and earmarked for reclamation would reduce the overall network footprint within WSAs over time.

Indicators of potential impacts on WSAs from OHV use include the total miles of primitive routes present within the WSAs. Figures 14-Figure 17 show the miles of evaluated primitive routes in each alternative network that are in the WSAs in the TMA.[10]

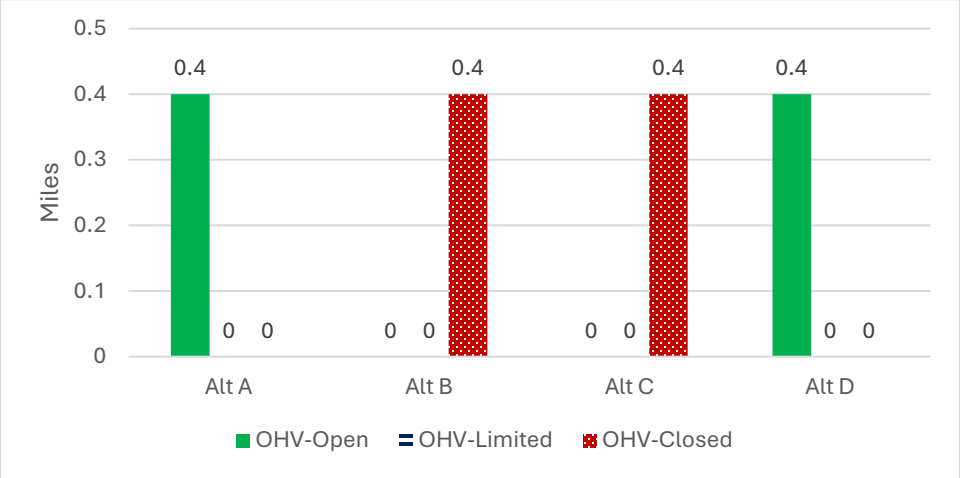


**Figure 14: Miles of Evaluated Primitive Routes in Canaan Mountain WSA**

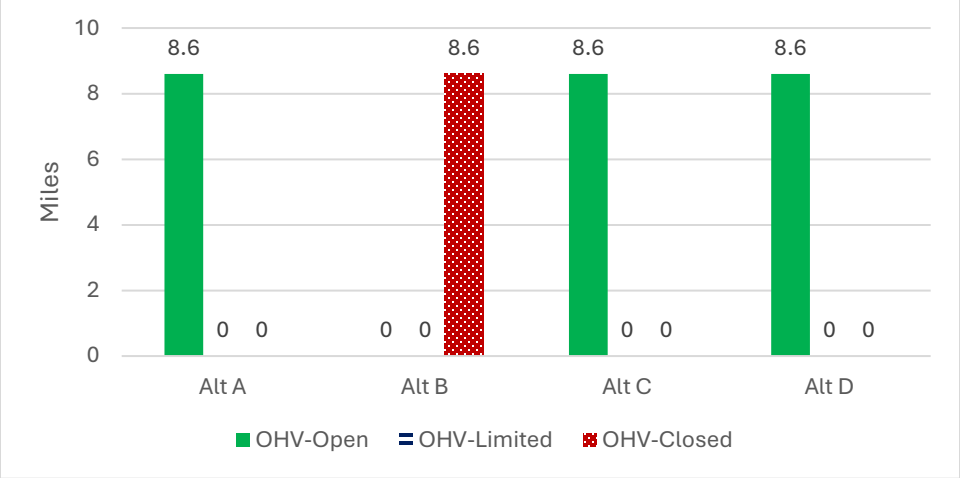


**Figure 15: Miles of Evaluated Primitive Routes in Moquith Mountain WSA**

[10] Note: there are zero miles of evaluated routes within the North Fork Virgin River WSA; therefore, it is not included in the analysis.

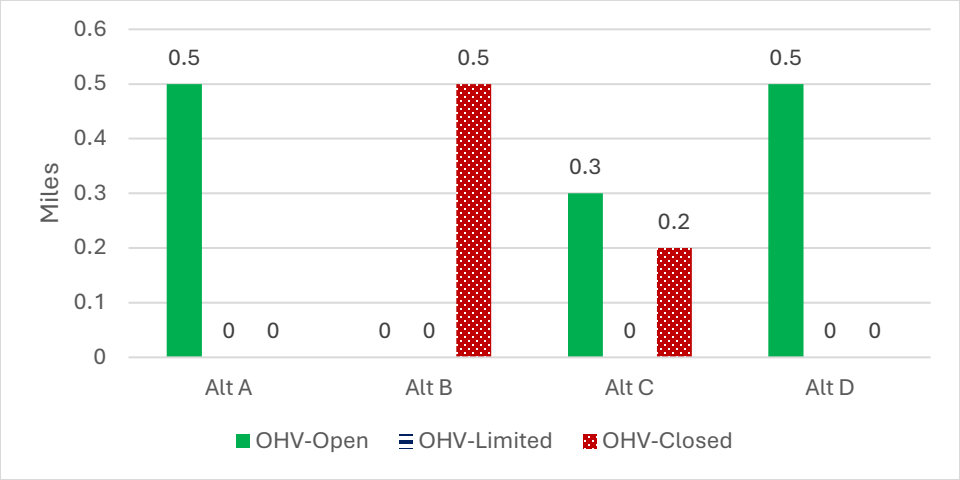


**Figure 16: Miles of Evaluated Primitive Routes in Orderville Canyon WSA**

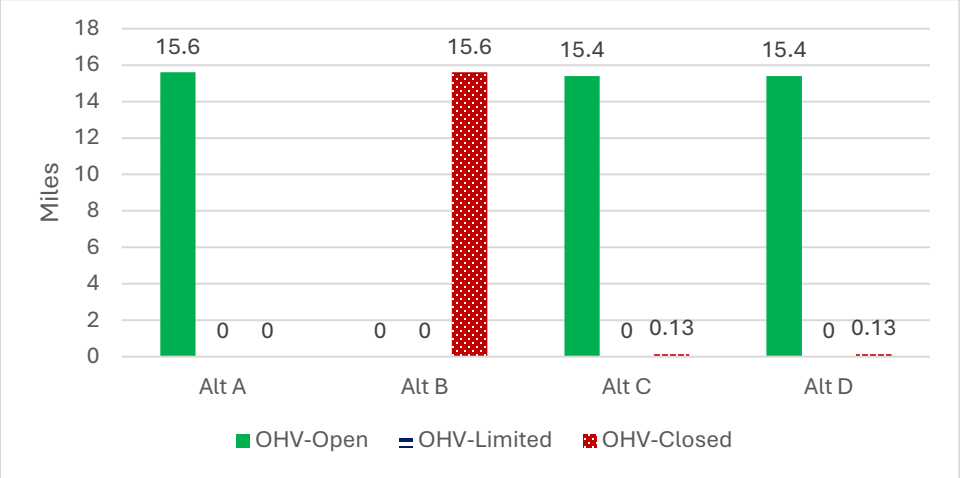


**Figure 17: Miles of Evaluated Primitive Routes in Parunuweap Canyon WSA**

#### 3.7.2.1. Alternative A

Under Alternative A, there would be no route designation changes in WSAs in the TMA. Designations of OHV-Closed applied to the 19 miles of routes that were undesignated in 2008 don't overlap with WSAs. Effects to WSA resources from ongoing OHV use would be similar to current levels.

#### 3.7.2.2. Alternative B

Alternative B would not designate any primitive routes as available for OHV use in WSAs. Under Alternative B, the effects to the wilderness characteristics of WSAs from OHV-Open designations (e.g., human encounters, noise, and loss of opportunity to experience primitive recreation and solitude during the duration of the travel-related activity) would be eliminated.

#### 3.7.2.3. Alternative C

Alternative C would designate 24 miles of primitive routes as available for OHV use in WSAs, a decrease of 1 mile compared to Alternative A. This decrease would include 0.2 miles in the Orderville Canyon WSA, 0.1 miles in the Parunuweap Canyon WSA and, like Alternative B, eliminate all of the OHV-Open designations in the Canaan Mountain WSA. Under this

alternative, OHV route-related impacts to wilderness values in the Canaan Mountain WSA would be eliminated. Impacts to wilderness values from OHV use within the Moquith Mountain WSA would remain the same as in Alternative A. Under Alternative C, the effects to the wilderness values of WSAs from OHV use (e.g., human encounters, noise, and loss of opportunity to experience primitive recreation during the duration of the travel-related activity) would continue to occur on those routes designated for OHV use. Overall, this alternative would have lower potential than Alternatives A and D but higher potential than Alternative B for OHV use-related impacts to the wilderness values of WSAs in the TMA.

#### 3.7.2.4. Alternative D

Alternative D would designate nearly all 25 miles of primitive routes as available for OHV use in WSAs. The only exception would be a 0.1-mile reduction in the Parunuweap Canyon WSA. Under Alternative D, the effects to the wilderness values of WSAs from OHV use (e.g., human encounters, noise, and loss of opportunity to experience primitive recreation during the duration of the travel-related activity) would continue to occur on those routes designated for OHV use. Overall, this alternative would have similar potential as Alternative A and higher potential than the other action alternatives for OHV use-related impacts to the wilderness values of WSAs in the TMA.

## 3.8. Special Designation, WSR - Issue 7: How would the route designation alternatives impact the outstandingly remarkable values of WSRs flowing through or adjacent to the TMA?

The geographic scope for the analysis for wild and scenic rivers is approximately one quarter mile corridor of the river sections.

### 3.8.1. Affected Environment

The Wild and Scenic Rivers Act of 1968 established legislation for a National Wild and Scenic Rivers System to protect and preserve designated rivers in their free-flowing condition and to protect and preserve their immediate environments. Five river segments within the TMA were found suitable for inclusion in the National Wild and Scenic River system in the 2008 RMP. There are no segments outside of the TMA (specifically Zion NP WSR segments) that fall within ¼ of any evaluated routes. For all of these segments, recreation and scenery are key outstandingly remarkable values centering around regionally, nationally, and internationally significant hiking and backpacking opportunities involving scenic, deep canyon settings (BLM 2008c). All segments are classified as “wild” except for one, East Fork Virgin River segment 37-40a, classified as “scenic” because of vehicle primitive routes existing within the river corridor. For more information on these 5 WSR segments, see pages 3-102 through 3-103 and Appendix 13 of the 2008 RMP (BLM 2008b).

**Table 9: Wild and Scenic River Segments in the TMA**

| WSR | River Miles | Miles of Evaluated Routes in WSR Corridor |
|---|---|---|
| **East Fork Virgin River (segment 37-40a):** Suitable Scenic | 5 | 0.7 |
| **East Fork Virgin River (segment 40a-41):** Suitable Wild | 5 | - |
| **Esplin Gulch and Orderville Canyon (segment 44-45):** Suitable Wild | 3 | - |
| **Meadow Creek/Mineral Gulch (segments 33-35 and 35-38):** Suitable Wild | 9 | 1 |
| **North Fork Virgin River (segment 48-49):** Suitable Wild | 2 | 0.3 |

### 3.8.2. Environmental Effects Analysis

Wild and Scenic River qualities can be indirectly impacted where travel routes serve as a conduit for sediment transport into intermittent or perennial drainages and riparian areas during runoff events. Motorized travel in areas of highly erosive soils or in sensitive areas, such as stream channels and riparian habitats, increases the potential for soil displacement which can result in water quality and aquatic habitat impacts. In addition, travel routes and their use may result in adverse impacts to the outstanding scenic qualities of WSR segments. Route use, including related uses such as parking, passing, and staging, may increase damage and disruption to the natural appearance of landscapes by providing opportunities for route proliferation, illegal off-road landscape damage, littering, and other harmful activities. Establishment of a designated comprehensive travel route network is expected to minimize route proliferation and decrease potential future degradation of scenic quality. Travel routes can also provide beneficial access for recreational opportunities along river corridors, though their use can lead to conflicts between motorized and non-motorized users.

Indicators of potential OHV route effects on the outstandingly remarkable values of the suitable river segments in the TMA include the miles of OHV routes within the segment corridors. Figures 18-22 show the miles of evaluated routes in each alternative network that are in the wild and scenic river corridors.

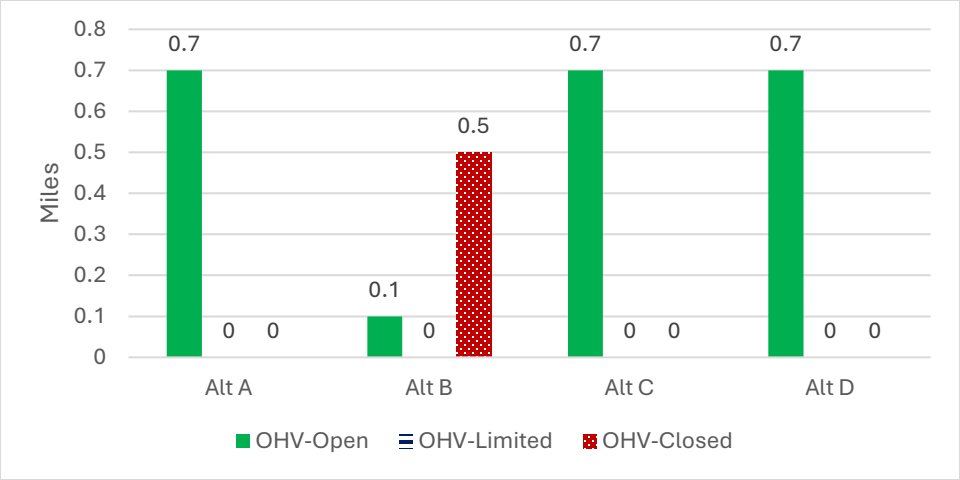


**Figure 18: Miles of Evaluated Routes in East Fork Virgin River WSR Corridor**

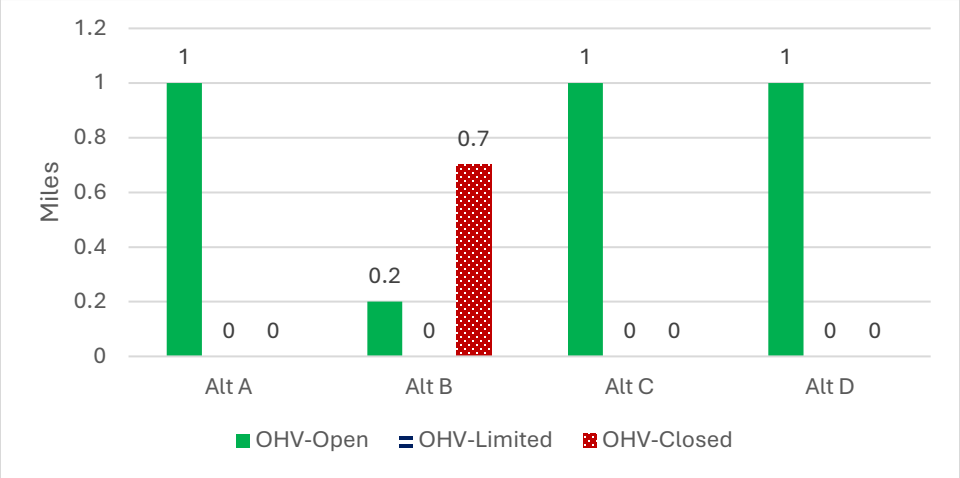


**Figure 19: Miles of Evaluated Routes in Meadow Creek/Mineral Gulch WSR Corridor**

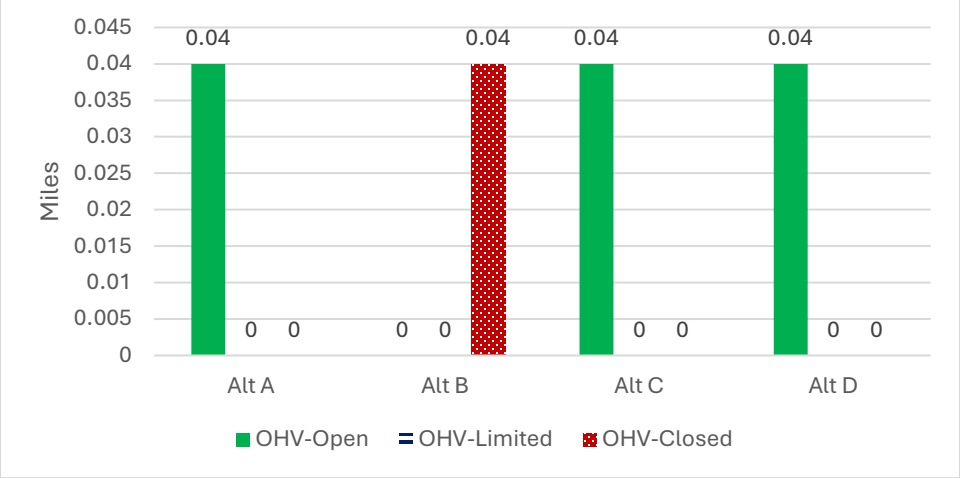


**Figure 20: Miles of Evaluated Routes in Esplin Gulch and Orderville Canyon WSR Corridor**

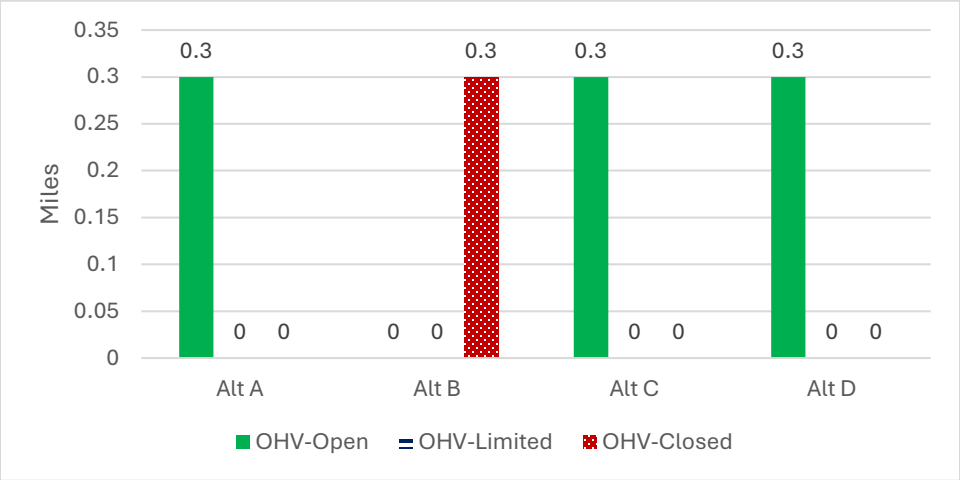


**Figure 21: Miles of Evaluated Routes in North Fork Virgin River WSR Corridor**

#### 3.8.2.1. Alternative A

Under Alternative A, there would be no designation changes to OHV-Open routes in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated in 2008, none of which occur in WSR corridors. All miles of evaluated routes in the TMA's WSR corridors would remain designated OHV-Open. Impacts to the corridors' outstandingly remarkable scenic values from ongoing OHV use (e.g., disruption of outstanding natural scenic quality by OHV route footprint(s) and use on the landscape) would be similar to current levels.

#### 3.8.2.2. Alternative B

Alternative B would designate 0.3 miles of evaluated routes in the WSR corridors for OHV use, a decrease of 1.7 miles compared to Alternative A. Impacts from OHV use on designated routes within the Esplin Gulch, Orderville Canyon corridor and North Fork Virgin River corridor would be eliminated. Under Alternative B, some visual effects to the outstandingly remarkable scenic values of the Meadow Creek/Mineral Gulch and East Fork Virgin River WSRs would continue to occur on the 0.3 miles designated OHV-Open. Overall, the potential for OHV use-related impacts to WSRs under this alternative would be lower than the other alternatives.

#### 3.8.2.3. Alternatives C and D

Alternatives C and D would each designate all miles of evaluated routes in the WSR corridors as OHV-Open, the same as in Alternative A. Under Alternatives C and D, the same types of visual effects noted above on the WSRs' outstandingly remarkable scenic values would continue to occur on those routes and route segments designated OHV-Open. Overall, the potential for OHV use-related impacts to the river segment under these alternatives would be the same as in Alternative A, and higher than Alternative B.

### 3.9. Visual Resources - Issue 8: How would the route designation alternatives affect visual resources within the TMA?

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

### 3.9.1. Affected Environment

The quality of visual resources is measured with visual resource inventory (VRI) classes. See Table 11 for VRI classes in the TMA and the miles of evaluated routes in those classes. VRI classes are assigned through an inventory process and serve as the basis for considering visual values. As noted in the BLM's 8410-1 Visual Resource Inventory Handbook, "Inventory classes are informational in nature and provide the basis for considering visual values in the RMP process. They do not establish management direction and are not used as a basis for constraining or limiting surface disturbing activities" (BLM 1986). Class I is assigned to those areas where a management decision has been made previously to maintain a natural landscape. Classes II, III, and IV are assigned based on a combination of scenic quality, sensitivity level, and distance zones, with Class I containing the highest visual quality and Class IV the lowest visual quality. An inventory of visual resources for BLM lands in the TMA was conducted in 2021.

Visual resources in the TMA are managed in accordance with the 2008 RMP. See Table 12 for Visual Resource Management (VRM) Classes in the TMA and the miles of evaluated routes in those classes. VRM is a process the BLM uses to manage scenic values to reduce adverse visual effects from development or other surface-disturbing activities on public lands. There are four visual resource classes: I, II, III, and IV. Class I is assigned to areas where management decisions have been made to maintain natural landscapes. The objective of Class II is to retain the existing character of the landscape. The objective of Class III is to partially retain the existing character of the landscape and Class IV is assigned where decisions allow for activities that involve major landscape character modification. VRM classes are assigned through RMPs and are used as a basis for management (BLM 1986). For more details on visual resources management in the TMA, see pages 3-72 to 3-74 of the 2008 Kanab Proposed RMP/EIS (BLM 2008b). For more details on visual resource classes and how they are determined, see the BLM's Visual Resource Inventory manual (BLM 1986).

The areas within the TMA that contain both outstanding scenic quality and high visual sensitivity include Coral Pink Sand Dunes/Moquith Mountain WSA area (including Water Canyon and Cottonwood Point), East Fork of the Virgin River/Parunuweap WSA (including The Barracks), and the North Fork Virgin River/Orderville Canyon WSAs (including Clear Creek Mountain) (BLM 2008b). Utah State Scenic Byways are highways that have been designated by official state declaration for their scenic, historic, recreational, cultural, archaeological, or natural qualities. State Scenic Backways are roads that have been designated by official state declaration for their scenic, historic, and recreational qualities. The TMA has two roads, the Coral Pink Sand Dunes Scenic Backway and Zion Park Scenic Byway, that were designated largely because of the area's beauty. The TMA is bounded on the east by Mount Carmel Scenic Byway.

**Table 10: Acres and Miles of Evaluated Routes by VRI Class**

| VRI Class | BLM-VRI Acres within TMA | Miles within VRI Class |
|---|---|---|
| VRI Class I | 54,137 | 46 |
| VRI Class II | 42,187 | 186 |
| VRI Class III | 32,998 | 136 |
| VRI Class IV | 53,399 | 124 |

**Table 11: Acres and Miles of Evaluated Routes by VRM Class**

| VRM Class | BLM-VRM Acres within TMA | Miles within VRM Class |
|---|---|---|
| VRM Class I | 54,498 | 43 |
| VRM Class II | 37,289 | 93 |
| VRM Class III | 59,644 | 231 |
| VRM Class IV | 30,263 | 119 |

Current and foreseeable trends and actions affecting visual resources in the analysis area are as follows: livestock grazing, increases in public visitation/recreation, and enhancement of recreational opportunities through facilities development, residential and commercial development, and vegetation treatment projects.

### 3.9.2. Environmental Effects Analysis

Existing travel routes and OHV use can inadvertently contribute to damage and disruption to the natural appearance of landscapes by providing OHV access opportunities for route proliferation (e.g., unauthorized user-created OHV routes extending off existing routes). OHV use on primitive native-surface roads can increase dust levels in the air, the extent of which depends on traffic characteristics and road quality (Etyemezian et al. 2003). In turn, the presence of dust particles in the air can reduce viewsheds (Duniway et al. 2019). Routes also impact visual resources by creating contrasting lines where they do not follow natural landscape contours. Because they lack formal design and construction standards, user-created routes may not follow ground contours and can extend up slopes, leading to rilling, erosion, and contrasting lines. Finally, eroded hillsides from travel in highly erosive soils and weed spread or introduction can also result in a change in form, line, and color and create contrasts that impair visual quality.

Under all action alternatives, the application of specified operation and management tools provided in the TMP Implementation Guide (Appendix E)—such as installation of signs, route markers, and human-made barriers—would help reduce or prevent impacts to the visual elements of line, form, and color. Regardless of the final designation decision for each travel route, it is assumed there will be follow-up action on the ground. For permanently closed routes, it can be assumed that actions would include the placement of closure signs, reclamation, or installation of barricades. For routes designated for OHV use, maintenance actions may include the use of heavy equipment for grading and drainage maintenance or hand tools for directional signing. The effects of these actions on visual resources are expected to be minor and short-term but are included in this analysis. In the Alternative B-D networks, route designations will result in some routes being closed, eventually reducing the overall footprint of the route network. Site-specific analysis of maintenance or management actions may be needed if such actions could affect high-quality visual landscapes.

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

Figure 22-25 inform the effects analysis for visual resources. They present the miles of routes in VRI and VRM Class I and Class II areas in the TMA. Analysis does not include Class III and IV because they allow for changes in form, line, and color and would not provide for a useful comparison between alternatives. The nature of the effects will be the same across alternatives;

however, the magnitude and location of the routes will vary. The magnitude can be assessed using Figure 22-25.

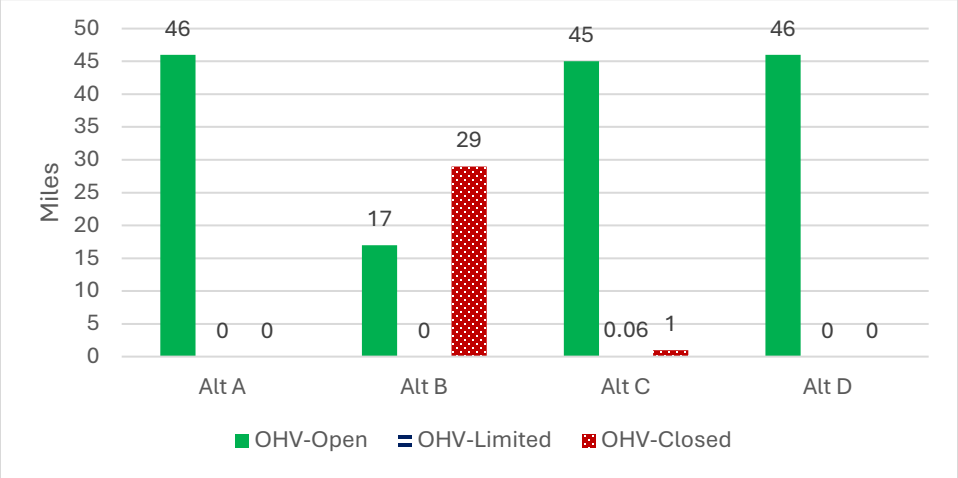


**Figure 22: Miles of Evaluated Routes in VRI Class I Areas**

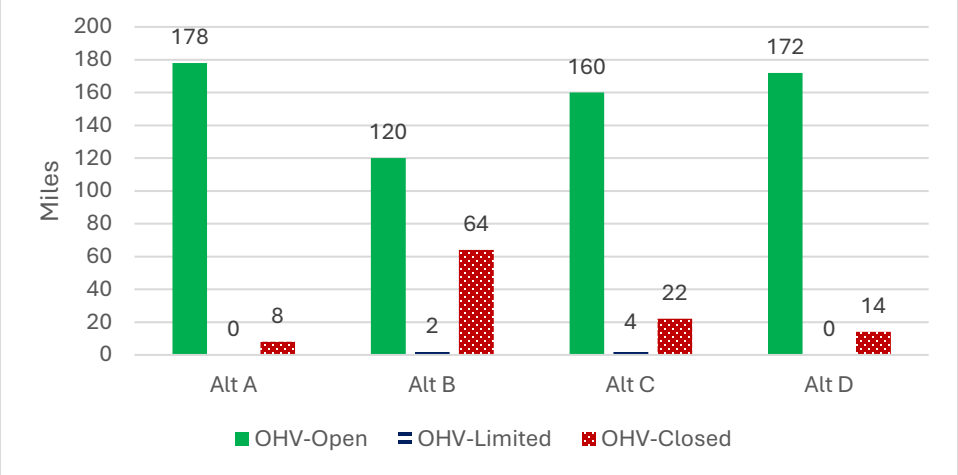


**Figure 23: Miles of Evaluated Routes in VRI Class II Areas**

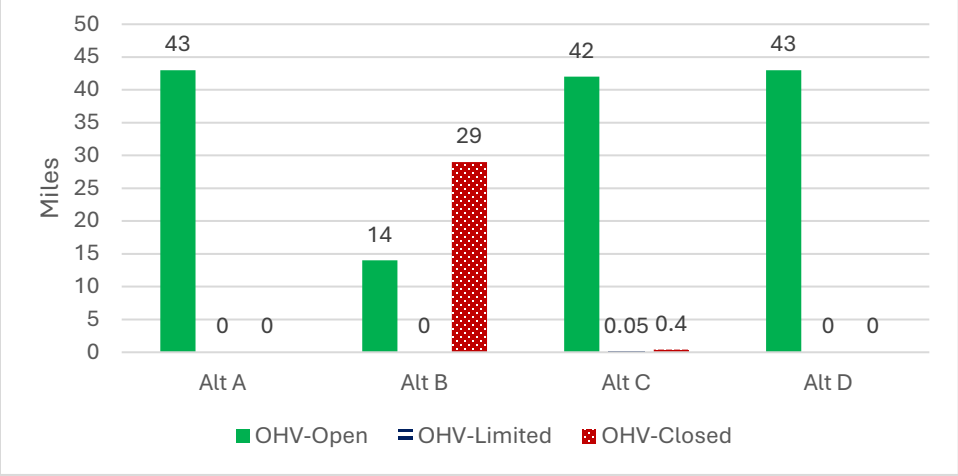


**Figure 24: Miles of Evaluated Routes in VRM Class I Areas**

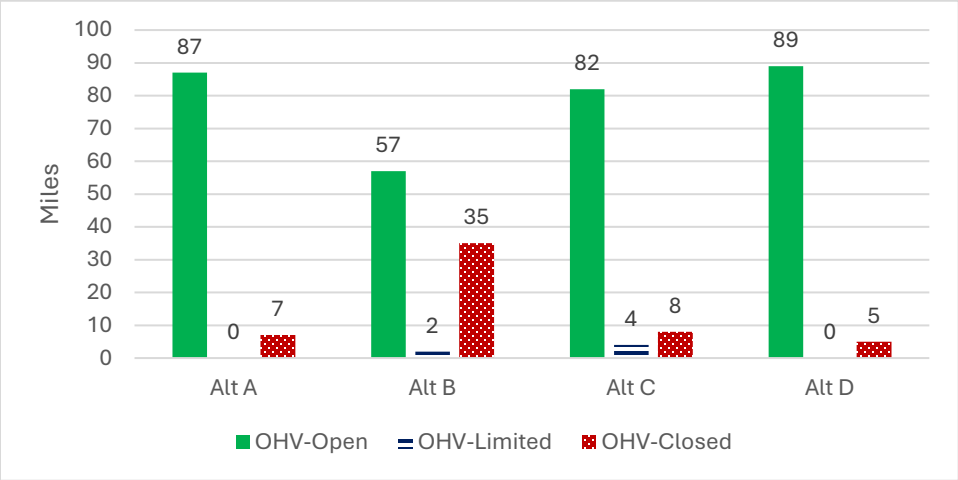


**Figure 25: Miles of Evaluated Routes in VRM Class II Areas**

#### 3.9.2.1. Alternative A

Under Alternative A, there would be no designation changes to OHV-Open routes in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated in 2008. Of the 232 miles of evaluated routes in VRI Class I and II areas, 97% would remain designated OHV-Open and 3% would be designated OHV-Closed. Of the 137 miles of evaluated routes in VRM Class I and II areas, 95% would remain designated OHV-Open and 5% would remain OHV-Closed/unavailable. Effects to the TMA's visual resources (e.g., degradation of visual quality, disruption of natural appearance, etc.) would be reduced below current levels.

#### 3.9.2.2. Alternative B

In VRI Class I areas, Alternative B would designate 17 miles of evaluated routes as OHV-Open, a 63% reduction from Alternative A. In VRI Class II areas, Alternative B would designate 122 miles for OHV use, a 31% reduction.

In VRM Class I areas, Alternative B would designate 14 miles of evaluated routes for OHV use, a 67% decrease compared to Alternative A. In VRM Class II areas, Alternative B would designate 59 miles for OHV use, a 32% decrease compared to Alternative A.

The same types of impacts to the TMA's visual resources from OHV use as noted above would continue to occur on those routes designated OHV-Open; however, overall, this alternative's potential for OHV use-related impacts to the TMA's visual resources would be the lowest of any alternative.

#### 3.9.2.3. Alternative C

In VRI Class I areas, Alternative C would designate 45 miles of evaluated routes for OHV use (OHV-Open and OHV-Limited), a very slight reduction as compared to Alternative A. In VRI Class II areas, this alternative would designate 164 miles for OHV use, an 8% decrease.

In VRM Class I areas, Alternative C would designate 42 miles of evaluated routes for OHV use, a 1% (less than 1-mile) decrease compared to Alternative A. In VRM Class II areas, this alternative would designate 86 miles for OHV use, a 1% (1-mile) decrease compared to Alternative A.

The same types of impacts to the TMA's visual resources from OHV use as noted above would continue to occur on those routes designated OHV-Open and OHV-Limited. Overall, this alternative's potential for OHV use-related impacts to the TMA's visual resources would be lower than Alternatives A and D but higher than Alternative B.

#### 3.9.2.4. Alternative D

In VRI Class I areas, Alternative D would designate 46 miles of evaluated routes for OHV use, the same as Alternative A. In VRI Class II areas, this alternative would designate 172 miles for OHV use, a 3% decrease.

In VRM Class I areas, Alternative D would designate 43 miles of evaluated routes for OHV use, the same as Alternative A. In VRM Class II areas, this alternative would designate 89 miles for OHV use, a 2% (2-mile) increase compared to Alternative A.

The same types of impacts to the TMA's visual resources from OHV use as noted above would continue to occur on those routes designated OHV-Open. Overall, this alternative's potential for OHV use-related impacts to the TMA's visual resources would be similar to Alternative A and higher than the other action alternatives.

## 3.10. Water Resources - Issue 9: How would the route designation alternatives affect water quality, hydrology, and riparian areas within the TMA?

The impact analysis area for water quality, riparian areas, and wetlands includes the TMA area surrounding ephemeral, intermittent, and perennial streams. This boundary was chosen because it reflects the hydrological system within the TMA.

### 3.10.1. Affected Environment

Water resources—particularly important in this arid region—are managed to ensure that water quality standards are not diminished as a result of BLM actions such as travel route designations. Natural or human-caused disturbance of vegetation or soil can cause watersheds to "exhibit undesirable responses (e.g., severe flooding or erosion)" (BLM 2008b). The surface waters of the TMA consist of segments of the North Fork Virgin River (16 miles), East Fork Virgin River (24 miles), Cottonwood Creek (11 miles), Kanab Creek (9 miles), Muddy Creek (17 miles), and Deep Creek (1 mile) as well as numerous intermittent streams. A number of springs and small streams are diverted for livestock watering and irrigation. Stock ponds in the area provide water for cattle and wildlife.

The North Fork Virgin River and the East Fork Virgin River have been designated by the State of Utah as High Quality Waters—Category 1, defined by Rule R317-2-3 of the Utah Administrative Code as "waters of high quality which have been determined by the Utah Water Quality Board to be of exceptional recreational or ecological significance or have been determined to be a state or national resource requiring protection."

Riparian areas are a form of wetland transition between permanently saturated wetlands and upland areas. In the arid Southwest, the riparian ecosystems depend on water availability, defined by amount, timing, duration, and source, and characterized as perennial (yearlong), intermittent (seasonal), or ephemeral (storm). Riparian areas comprise less than one percent of the approximately 22 million acres of public lands administered by the BLM in Utah. However,

these small but unique areas are among the most important, productive, and diverse ecosystems in the state. Riparian areas provide many benefits within the TMA, including filtering and purifying water, reducing sediment loads and enhancing soil stability, contributing to groundwater recharge, dissipating high-energy flows (floods), and supporting greater biodiversity. Riparian areas are all important resources for aquatic organisms, wildlife, grazing, and recreation. Healthy and productive riparian areas provide water, food, cover, and travel lanes for many aquatic and terrestrial wildlife species, some of which are obligate to the riparian area and not found in dryer upland areas. Native riparian plants and their root systems contribute to improved water quality and quantity by holding soils in place while filtering sediments, increasing ground water recharge, and protecting streambanks. The value of riparian areas to the general public has been increasing by providing opportunities for a wide variety of recreation activities and possessing aesthetic attributes. However, riparian ecosystems are fragile resources that are among the first indicators of impacts from disturbance.

Within the TMA, 18 routes are in or crossing perennial streams, 141 routes are in or crossing intermittent or ephemeral streams, and 19 routes are in or proximate to riparian areas. This includes routes designated as part of the 2008 TMP as well as additional existing routes that have been inventoried and evaluated by the IDT as part of this TMP.

Current and foreseeable trends and actions can affect water quality and quantity by resources by creating disturbance and altering vegetation which can cause contamination, sedimentation, change in hydrological cycles, and depletion of water supplies.

### 3.10.2. Environmental Effects Analysis

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

- Travel route proximity to riparian areas or intermittent or perennial drainages can influence water quality degradation.
- In addition to routes that directly cross a riparian area or intermittent or perennial drainage, routes or portions of routes that are located within 100 meters of riparian areas are included in analysis. The 100-meter proximity buffer helps account for effects of route use as well as adjacent off-route incidental effects from parking, passing, staging, and authorized roadside activities such as camping, firewood gathering, etc. that may occur along routes.
- A well-planned travel route network would help conserve and protect the public land water resources of the TMA by limiting OHV use to designated routes.
- Travel network alternatives that designate more miles OHV-Closed in and near streams and riparian areas would provide higher levels of protection from surface disturbances and indirectly help reduce and minimize effects to water resources and water quality.
- Impacts to water resources would be reduced and minimized by applying best management practices (BMPs) for operation and maintenance of all routes designated for OHV use.
- Access to water resources such as, but not limited to stock ponds, reservoirs, and spring/stream diversions would continue for permittees and other authorized users.

- Maintenance under this TMP will be appropriate to the class of road to ensure navigability for designated routes without changing the character, function, or recreation experience the route provides.

Route designations may affect hydrology and water quality by altering drainage patterns, introducing contaminants, and destabilizing soils. Travel networks increase drainage density resulting in alterations of hydrology such as increased peak flows (Dingman 1978). Routes can intersect, channelize, or reroute streams, and wetlands resulting in rills and gullies. Travel routes parallel to or within the active channel can reduce channel meanders which naturally reduce flood energy. They can also cause geomorphic changes to bank angle, bank stability, channel width, sinuosity, flood velocities, width/depth ratios, and floodplain connectivity. In some cases, routes may cause artificial flow channels at or near route/stream intersections. Route use and maintenance disturbs soils making them more likely to erode into surface waters affecting water quality. Routes serve as conduits that direct contaminants and sediment into stream systems and riparian areas during runoff events (Miniat et al. 2019, Ouren et al. 2007). Routes in areas of erosive soils that are proximate to, or crossing drainages result in higher amounts of sediment (Ouren et al. 2007) (see Section 3.6). OHVs carry and may shed contaminants including 1,3 butadiene, benzene and ethylbenzene, xylenes, and toluene (Ouren et al. 2007). The stormwater can also carry pollutants from OHVs including heavy metals from brakes, engine wear, and hydrocarbons from lubricating fluids.

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

Indicators of potential OHV route impacts on the TMA's water resources include the number of routes in or crossing streams, and the number of routes proximate to riparian areas. Figure 26-28 show the number of evaluated routes in each alternative network that are in or proximate to TMA streams and riparian areas.

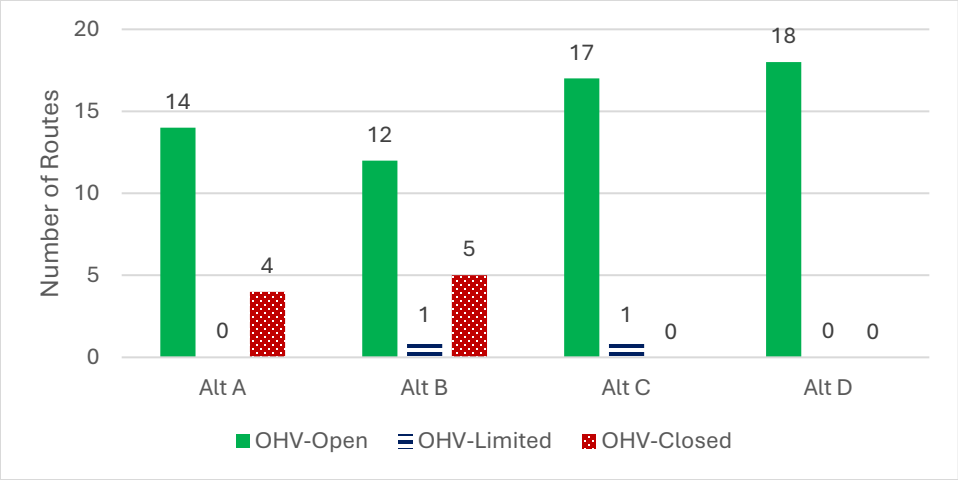


**Figure 26: Number of Evaluated Routes In or Crossing Perennial Streams**

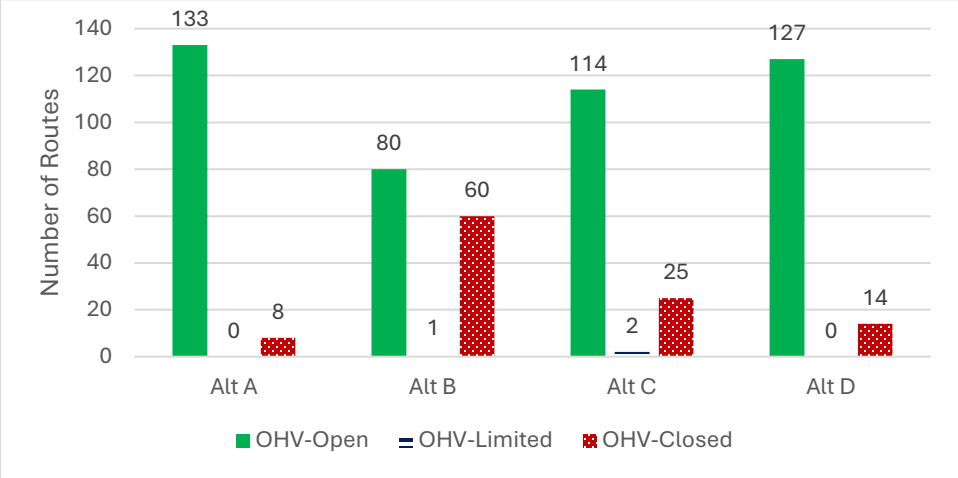


**Figure 27: Number of Evaluated Routes In or Crossing Intermittent or Ephemeral Streams**

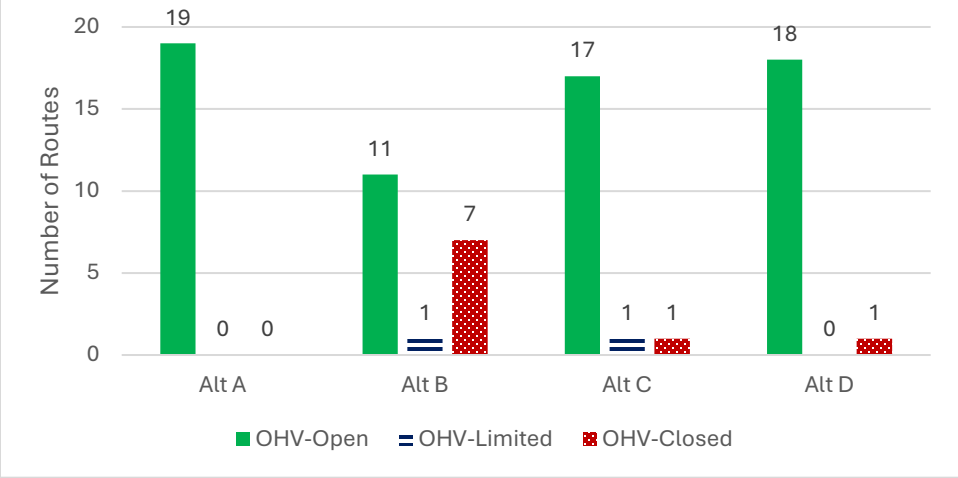


**Figure 28: Number of Evaluated Routes In, Crossing, or Proximate to Riparian Areas**

### 3.10.2.1. Alternative A

Under Alternative A, there would be no designation changes to OHV-Open routes in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated

in 2008. Within the TMA, 18 routes are in or crossing perennial streams, 141 routes are in or crossing intermittent or ephemeral streams, and 19 routes are in or proximate to riparian areas. This is a decrease from current management and will result in a reduction of OHV related effects to water quality.

#### 3.10.2.2. Alternative B

Alternative B would designate 13 evaluated routes in or crossing perennial streams for OHV use (OHV-Open or OHV-Limited), a 1-route reduction compared to Alternative A. Alternative B would designate 81 evaluated routes in or crossing intermittent or ephemeral streams for OHV use, a 39% reduction from Alternative A. And Alternative B would designate 12 evaluated routes in or proximate to riparian areas for OHV use, a 37% reduction compared to Alternative A. Under Alternative B, the same types of effects on water quality from OHV use noted above would continue to occur on those routes designated OHV-Open; however, overall, this alternative would have the lowest potential of any alternative for ongoing OHV-related impacts to water quality within the TMA.

#### 3.10.2.3. Alternative C

Alternative C would designate all 18 evaluated routes in or crossing perennial streams for OHV use (OHV-Open or OHV-Limited), a 29% increase compared to Alternative A. Alternative C would designate 116 evaluated routes in or crossing intermittent or ephemeral streams for OHV use, a 13% decrease from Alternative A. And Alternative C would designate 18 evaluated routes in or proximate to riparian areas for OHV use, a 1-route decrease compared to Alternative A. Under Alternative C, the same types of effects on water quality from OHV use noted above would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, Alternative C would have higher potential for OHV-related impacts to water quality in areas of perennial stream crossings than Alternatives A and B. In intermittent stream crossing and riparian areas, Alternative C would have lower potential than Alternatives A and D but higher potential than Alternative B for ongoing OHV-related impacts to water quality within the TMA.

#### 3.10.2.4. Alternative D

Alternative D would designate all 18 evaluated routes in or crossing perennial streams as OHV-Open, an increase of 29% from Alternative A. Alternative D would designate 127 evaluated routes in or crossing intermittent or ephemeral streams for OHV use, a 5% decrease from Alternative A. And Alternative D would designate 18 evaluated routes in or proximate to riparian areas for OHV use, a 1-route decrease compared to Alternative A. Under Alternative D, the same types of effects on water quality from OHV use noted above would continue to occur on those routes designated OHV-Open. Overall, this alternative would have similar potential to Alternative A but higher potential than the other action alternatives for ongoing OHV-related impacts to water quality within the TMA.

### 3.11. Wilderness Characteristics - Issue 10: How would the route designation alternatives affect size, apparent naturalness, and outstanding opportunities for solitude or primitive and unconfined recreation in lands identified by the BLM as possessing wilderness characteristics?

The analysis area is the combined LWC inventory units and BLM Natural Area boundaries overlapping the TMA.

### 3.11.1. Affected Environment

LWC units are defined as BLM-administered lands inventoried per BLM Manual 6310 – Conducting Wilderness Characteristics Inventory on BLM Lands (BLM 2021b) that contain at least 5,000 contiguous roadless BLM acres, or if less than 5,000 acres, are contiguous to an area of Federal lands formally managed for the protection of wilderness characteristics such as designated Wilderness, WSA, or recommended wilderness in USFS or NPS lands. LWC units have been determined by the BLM to possess the characteristic of naturalness, meaning they appear primarily affected by the forces of nature; provide outstanding opportunities for solitude and/or primitive and unconfined recreation; and may have supplemental values such as ecological, geological, or other scientific, educational, or historical (BLM 2021b). LWC inventory findings are only a resource determination and are not officially a special land use allocation or designation. LWC units are not solely managed for the protection of their wilderness character unless a BLM land use planning decision has been made to manage the unit as a BLM Natural Area. Distinct from any planning decisions, under 43 CFR § 8342.1, the BLM has the obligation to minimize adverse effects to resources, including wilderness characteristics, when designating OHV routes. The 2017 Settlement Agreement stipulates that "For purposes of minimizing damage to public lands with BLM-inventoried wilderness characteristics, the BLM will consider the potential damage to any constituent element of wilderness characteristics, including naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation, for each alternative travel network." A total of 48.3 miles of evaluated routes are within LWC units in the TMA.

**Table 12: LWC Units in the TMA**

| LWC Unit | BLM Acres | Miles of Evaluated Routes within LWC Unit |
|---|---|---|
| Canaan Mountain LWC | 10,438 | 4.5 |
| Moquith Mountain LWC | 2,904 | 6.8 |
| Orderville LWC | 2427 | 18.4 |
| Parunuweap LWC | 14,806 | 18.6 |

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

BLM Natural Areas in the TMA are managed for their wilderness characteristics under the 2008 RMP, which defines BLM Natural Areas as follows:

> In future references, lands managed by the 2008 RMP as non-WSA lands with wilderness characteristics will be referred to as BLM Natural Areas. This change does not represent a new designation or a new decision. Rather, BLM wants to recognize these discretionary decisions with a better, simpler reference. Wilderness Areas and Wilderness Study Areas are formal designations that are managed in a prescribed manner. To avoid confusing these official designations with discretionary agency decisions, BLM has chosen a new reference to distinguish between formal designations (e.g., Wilderness Areas) and a discretionary management category (BLM Natural Areas). According to the 2008 RMP, BLM Natural

Areas will be managed to protect, preserve, and maintain values of primitive recreation, the appearance of naturalness and solitude. (BLM 2008a, page 36).

The TMA contains three BLM Natural Areas: Moquith Mountain, Orderville Canyon, and Parunuweap Canyon[11]. Within these are a total of 6.3 miles of evaluated primitive routes. In the context of BLM Natural Areas, a primitive route is a transportation linear feature that does not meet Wilderness Inventory Road criteria (i.e., has not been constructed or improved by mechanical means, and has not been maintained to ensure relatively regular and continuous use for its intended purpose).

**Table 13: BLM Natural Areas in the TMA**

| BLM Natural Area | BLM Acres | Miles of Evaluated Primitive Routes |
|---|---|---|
| Moquith Mountain | 9,628 | 2.3 |
| Orderville Canyon | 2,698 | 3.7 |
| Parunuweap Canyon | 118 | 0.3 |

The 2008 TMP limits OHV use within the TMA's BLM Natural Areas to designated routes. In conformance with 43 CFR § 8342.1 and the 2008 RMP, the BLM authorized officer shall designate OHV-open and OHV-Limited routes in BLM Natural Areas only if off-road vehicle use would not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

Current and foreseeable trends and actions in the analysis area affecting wilderness characteristics include livestock grazing, increases in public visitation/recreation and vegetation treatments. Recreation, including OHV use, has potential to affect WSA values, since use and development of OHV technologies is projected to increase regardless of alternative.

### 3.11.2. Environmental Effects Analysis

Continued OHV use, including incidental use such as passing, parking, and staging, and associated maintenance (see Appendix E) within LWC units, has the potential to contribute to degradation or loss of wilderness characteristics resulting from travel-related effects such as vehicle noise, vehicle tracks, creation or expansion of dispersed camp sites, resource damage from route proliferation, widening or braiding, and soil disturbance. OHV use can adversely affect naturalness by perpetuating routes and associated vegetation loss, erosion, and spreading noxious weeds. OHV use may also increase wildlife habitat disturbance and mortality. OHV use

[11] **Moquith Mountain**: Bordered by the city of Kanab on the east and by the Moquith Mountain WSA on the west, this area is used for hunting, livestock grazing, OHV exploring, and utility access for the Town of Fredonia water system.
**Orderville Canyon**: The Orderville Canyon is comprised of several areas: One is located north of the canyon and east of Zion National Park and adjacent to the Orderville Canyon WSA; another south of the canyon, east of Zion National Park, and adjacent to the Orderville Canyon WSA. Both of these are used for camping, livestock grazing, big game hunting, and OHV exploring. The third area is directly east of the North Fork Virgin River WSA, straddling the North Fork of the Virgin River, and is a key access point for the Narrows hike in Zion National Park; it is used for camping, livestock grazing, and big game hunting.
**Parunuweap Canyon**: This area is bounded by private land, roads, well-defined vehicle routes, Parunuweap Canyon WSA, and Zion National Park. It is used for big game hunting, camping, livestock grazing, and OHV exploring

produces localized and transient visual and auditory effects that may lead to diminished outstanding opportunities to experience solitude.

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

The travel network in the TMA provides important public access to trailheads or starting points for non-motorized activities such as hiking, backpacking, camping, hunting, canyoneering, equestrian riding, and other primitive activities within WSAs. In remote, arid desert regions like the TMA, OHV routes in or adjacent to WSAs may provide crucial access for experiencing and enjoying outstanding primitive recreation opportunities. Effects to recreation are analyzed in detail in Section 3.5.

Difficult terrain, lack of water, and extreme temperatures place natural limitations on non-motorized access that necessitate motorized access to effectively transport adequate supplies and gear for people and animals to a trailhead or location where personal safety and positive outcomes can be maintained. This necessity can be amplified for primitive activities that are more gear-dependent or for commercial guides and outfitters. Therefore, longer approach marches caused by OHV-Closed route designations have potential to limit or adversely affect primitive, unconfined recreation opportunities. A route closure in a particular location could make access to destinations desirable for outstanding primitive recreation opportunities less feasible or shorten the season of use for users such as horse-packing groups, backpackers, canyoneering and day hikers.

Route closures, through OHV-Closed designations and associated implementation measures such as reclamation when applied, and monitoring could reduce the overall footprint of the route designations in affected LWC units over time. Reclamation of primitive routes within an LWC unit would not increase the acreage of inventoried wilderness characteristics in any unit because primitive routes were included in the overall acreage calculation during the LWC inventory. However, reclamation of primitive routes would remove potential for adverse effects tied to OHV use on those routes and would benefit the integrity of wilderness characteristics.

Designating routes OHV-Closed is not likely to result in short-term improvements to naturalness due to the arid environment of the TMA. Soil compaction, low precipitation, and slow vegetation growth make restoration challenging.

The BLM has monitored unauthorized off-route use by documenting damage points in the Trail Canyon Travel management Area Baseline Monitoring Report (BLM 2021c). TMP implementation measures (see Appendix E) are designed to minimize adverse effects to LWC units from continued OHV use in each alternative through monitoring, enforcement, signing, and education. Implementation measures for OHV-Closed routes or areas where unauthorized use is occurring could include the placement of closure signs, installation of natural barricades, vertical mulching, reclamation, and monitoring by BLM staff, including BLM law enforcement or contractors. Short-term implementation effects could occur from a temporary loss of solitude from noise and presence of people and vehicles for the duration of the implementing actions

(e.g., the installation of the sign, or route barrier placement). Temporary adverse changes to naturalness would occur as long as signs or barriers were present at the closure. However, once closure signs or structures were removed, the quality of naturalness would be enhanced long-term.

Figure 29 and Figure 30 are used to inform effects analysis. They indicate travel network miles that are in LWCs and BLM Natural Areas (not including routes on LWC or BLM Natural Area boundaries). This mileage is used as an indicator of the route designations' potential effects to LWCs and BLM Natural Areas because the distance is how long an OHV could travel in these areas.

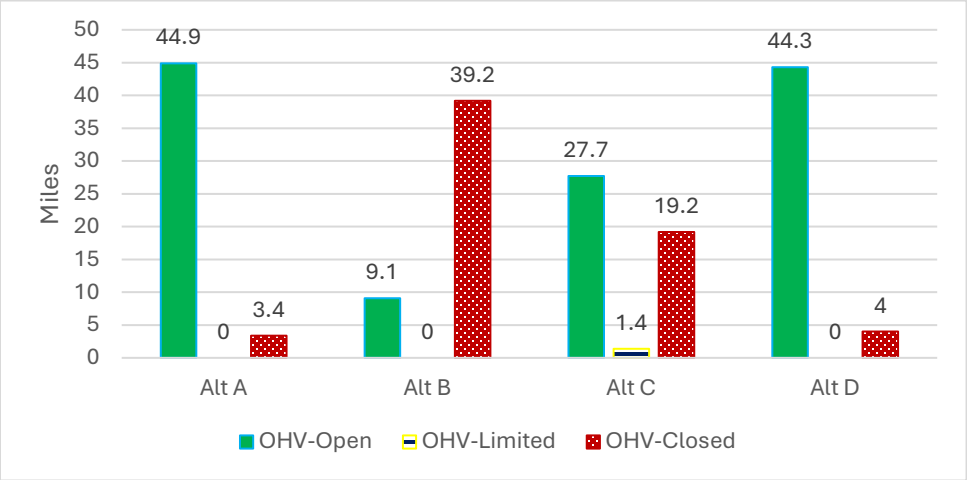


**Figure 29: Miles of Evaluated Routes by Alternative in LWC**

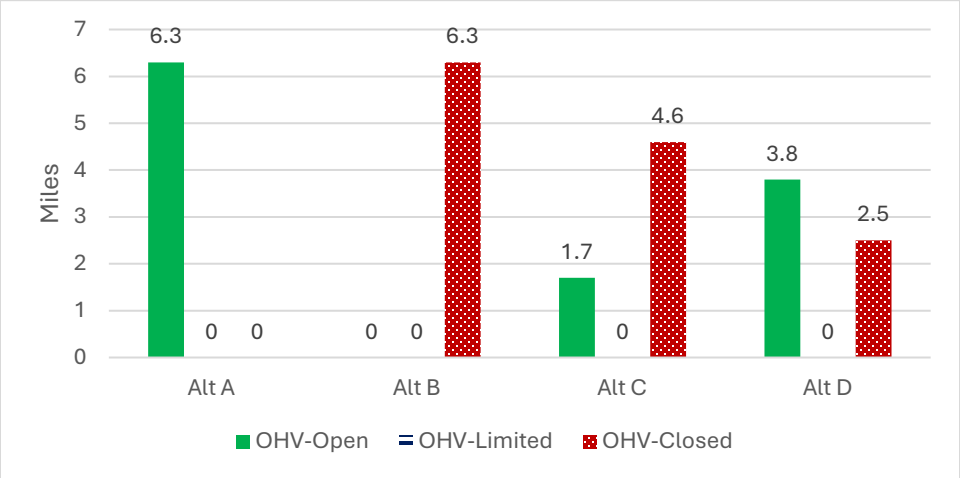


**Figure 30: Miles of Evaluated Routes by Alternative in Natural Areas**

### 3.11.2.1. Alternative A

Under Alternative A, there would be no designation changes to OHV-Open routes in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated in 2008, none of which occur in Natural Areas. 44.9 of the 48.3 miles (93%) of evaluated routes in LWC would remain OHV-Open. All (6.3 miles) of the evaluated routes in BLM Natural Areas would remain OHV-Open. Effects to the wilderness characteristics of naturalness and opportunities for solitude and primitive or unconfined recreation (e.g., wheel tracks, noise, camp

sites, and expanded human presence on or along the OHV routes) would result in a slight reduction in effects from current levels.

#### 3.11.2.2. Alternative B

Alternative B would designate 9.1 miles of routes in the LWC units as OHV-Open. 39.2 miles (81%) of evaluated routes within LWC would be designated OHV-Closed. This would include elimination of all OHV-Open designations in the Orderville LWC unit, and a 6-mile reduction in the Parunuweap Canyon unit. Under Alternative B, the same types of effects to wilderness characteristics in the LWC units as noted above would continue to occur where routes are designated OHV-Open. Overall, Alternative B's potential for OHV use-related impacts to wilderness characteristics in LWC units would be lower than that of other alternatives.

Alternative B would designate all routes in BLM Natural Areas as OHV-Closed. Overall, Alternative B's potential for OHV use-related impacts to wilderness characteristics in BLM Natural Areas would be lower than each of the other alternatives. Negative impacts to the wilderness characteristics of these BLM Natural Areas from OHV use is not expected under this alternative.

Under this alternative, impacts to naturalness and outstanding opportunities for solitude and primitive and unconfined recreation within LWC units and BLM Natural Areas would likely decrease compared to all alternatives.

#### 3.11.2.3. Alternative C

Alternative C would designate 27.7 miles of evaluated routes in the LWC units as OHV-Open and 1.4 miles as OHV-Limited an overall 40% (19.2 miles) decrease compared to current use. This would include reduction of 2 miles in the Parunuweap Canyon unit and a 0.2 mile reduction in the Orderville Canyon unit.

Alternative C would designate 1.7 miles of evaluated routes in BLM Natural Areas as OHV-Open, an overall 73% (4.6 miles) decrease compared to current use.

Although the Kanab Field Office has experienced fluctuations in visitation Field Office-wide, based on professional judgement and review of the BLM recreation visitation reporting database, the BLM believes that the character and use of the routes proposed to be designated OHV-Open and OHV-Limited under Alternative C have not significantly changed since they were inventoried and that continued use of the routes would not interfere with protecting, preserving, and maintaining wilderness characteristics.

This alternative would have lower potential impacts to naturalness and outstanding opportunities for solitude and primitive and unconfined recreation within LWC units and BLM Natural Areas than Alternatives A and D but higher potential than Alternative B for OHV use-related impacts.

#### 3.11.2.4. Alternative D

Alternative D would designate 44.3 miles of evaluated routes in the LWC units as OHV-Open, an overall 8% (4 miles) decrease compared to Alternative A. This would include reduction of 2 miles in the Parunuweap Canyon unit but no changes from Alternative A within the Orderville unit.

Alternative D would designate 3.8 miles of evaluated routes in BLM Natural Areas as OHV-Open, an overall 40% (2.5 miles) decrease compared to Alternative A. This includes a decrease of 1 mile in the Moquith Mountain Natural Area, 1 mile in the Orderville Canyon Natural Area, and all 0.3 miles in the Parunuweap Canyon Natural Area.

Under Alternative D, the effects to naturalness and outstanding opportunities for solitude and primitive and unconfined recreation within LWC units and BLM Natural Areas would likely continue to occur on those routes designated for OHV use. Overall, this alternative would have similar potential to Alternative A and higher potential than the other action alternatives for OHV use-related impacts to the wilderness characteristics of BLM Natural Areas in the TMA.

## 3.12. Wildlife - Issue 11: How would the route designation alternatives impact general wildlife species?

The analysis area for wildlife is the entire TMA plus any contiguous mapped habitat that extends outside the TMA because it is the smallest unit which shows all impacts to wildlife and their habitats affected by the TMP.

### 3.12.1. Affected Environment

The TMA supports various big game and other general wildlife species and includes wildlife habitats which have been identified and recognized by the Utah Division of Wildlife Resources (UDWR). TMA route density along with habitat fragmentation could slightly vary depending on which route network alternative is selected. Not all TMA wildlife, wildlife habitat, and potential effects on these resources from the alternative travel networks are discussed below; rather, only those that are most likely to be affected and were identified as key issues in scoping. These include black bear, cougar, desert bighorn sheep, mule deer, and Rocky Mountain elk. Habitat acreages and miles of evaluated routes fragmenting the various habitats are found in Table 15, below the species narratives. There would be no route designation changes in the TMA. Within black bear habitat, 95% of the evaluated route miles would remain designated OHV-Open. In cougar and mule deer habitat, 96% of the evaluated route miles would remain OHV-Open. In desert bighorn sheep habitat, 75% of the evaluated route miles would remain OHV-Open. And in elk habitat, 95% of the evaluated route miles would remain OHV-Open. Impacts to habitat from ongoing OHV use (e.g., direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.) would reflect a continuation of current management.

**Black bear (*Ursus americanus*)**, a native of Utah, is the only species of bear naturally inhabiting the state. Within the TMA, they can generally be found in large, steep, rugged, forested areas at higher elevations. As omnivores, their diet, which varies seasonally, consists of fruits, insects, grubs, some small vertebrates, and carrion. They tend to den on steeper slopes in areas of minimal human disturbance. Minimizing route density and human access in high-quality bear habitat can help minimize human contact with bears. (BLM 2008b, UDWR 2023)

**Cougar (*Puma concolor*)**, or mountain lions, are found statewide in Utah, though individuals are rarely seen because of their secretive nature. They exhibit a broad habitat tolerance, occupying habitat ranging from rugged desert areas to above timberline. Crucial habitat has been identified within the TMA and most closely follows the habitat categories for mule deer, their main prey, though they will also feed on elk, rabbits, or other animals—and their populations may be limited by prey abundance, availability, and vulnerability. (BLM 2008b, UDWR 2026a)

**Desert bighorn sheep (*Ovis canadensis nelsoni*)** inhabit remote and rugged terrain, including slickrock canyons, rocky slopes, and canyonlands. Bighorns are native to Utah and were well known to the prehistoric inhabitants of the state; they inhabited nearly every mountain range in the state prior to European settlement. Because of the remote and inaccessible areas they inhabit, bighorn are sometimes referred to as a "wilderness species" (UDWR 2018). Today, desert bighorn generally occur in southern Utah and are considered yearlong residents of their range, as they do not migrate seasonally. The UDWR estimates the current population to be around 2,900 animals in the state. There is a small amount of crucial habitat along the western edge of the TMA. In its statewide management plan, UDWR identifies maintaining or improving bighorn habitat to enhance individual herd success among its objectives. (BLM 2008b, UDWR 2018)

**Mule deer (*Odocoileus hemionus*)** is a native species that is found throughout the TMA and the state of Utah and is adaptable to a wide variety of habitat types. They tend to migrate between summer and winter ranges, but they are more populous in shrublands and areas of rough, broken terrain with abundant browse and cover. They feed on forbs, grasses, and shrubs throughout the spring and summer months and primarily on shrubs during the fall and winter. UDWR has identified increasing mule deer herd numbers as one of its top priorities on a state-wide basis. The current UDWR deer management plan (effective 2024-2030) identifies conserving, improving, and restoring crucial habitats as one of the most important measures that the agency and its partners can undertake to improve the health of mule deer populations. Loss and degradation of habitat—including from OHV use, road construction, spread of invasive plant species, and wildland fire—pose threats to mule deer populations. (BLM 2008b, UDWR 2025)

**Rocky Mountain elk (*Cervus elaphus nelson*)** move seasonally between summer and winter ranges, tending toward higher elevations during the summer and lower elevations in winter. Their diet—which is flexible and consists of grasses, forbs, and shrubs—allows them to range widely from mountain habitats to low desert. UDWR estimates current state-wide population to be around 81,000 animals. Elk habitat and migration corridors are impacted by urbanization, road construction, OHV use, and energy development. To minimize travel-related impacts, UDWR seeks to maintain a density of less than 2 miles of road per square mile within crucial elk habitat and to control the spread of noxious weeds and invasive species. (BLM 2008b, UDWR 2022b).

Current and foreseeable trends and actions affecting wildlife in the analysis area include recreation, enhancement of recreational opportunities, and vegetation treatment projects.

**Table 14: General Wildlife Species in the TMA**

| Species | Habitat Acres | Miles of Evaluated Routes within Habitat |
|---|---|---|
| Black Bear | 33,971 | 61 |
| Cougar | 162,459 | 442 |
| Desert Bighorn Sheep | 9,414 | 4 |
| Mule Deer | 162,459 | 442 |
| Rocky Mountain Elk | 21,726 | 37 |

### 3.12.2. Environmental Effects Analysis

The nature and type of impacts on general wildlife and their habitats from route use and incidental access-related uses (including camping, hiking, and exploring, hunting, firewood

gathering, etc.) can include habitat avoidance and abandonment, interference of daily movement, increased physical stress that can result in decreased health, and increased vehicle collisions resulting in injury or mortality. These impacts can escalate seasonally during sensitive birthing, rearing, and breeding seasons and during extreme weather regimes such as drought, extreme heat or cold, or heavy snowfall. Habitat loss and fragmentation are indirect impacts resulting from travel-related surface disturbances and related anthropogenic use from motorized and non-motorized vehicle travel. Such use can result in:

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

Human activity can trigger behavioral changes like increased flight and vigilance, and result in the disruption or displacement of other essential behaviors including breeding, foraging, hunting, and predator-avoidance activities (Larson et al. 2016, Ouren et al. 2007, Trombulak and Frissell 2000). Species' responses may range from brief, immediate responses, such as alerting or flushing, to more long-term responses like abandonment of preferred habitat (Kaseloo and Tyson 2004, Ortega 2012). These behavioral changes result in increased expenditures of time and energy towards avoiding humans and decreased expenditures of time and energy towards beneficial activities like foraging or caring for young, ultimately causing declines in abundance and occupancy, reduced reproductive success, and altered species richness and community composition (Larson et al. 2016, Ouren et al. 2007).

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

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

The wildlife analysis below focuses on black bear, cougar, desert bighorn sheep, mule deer, and Rocky Mountain elk, but identified impacts will have similar consequences to other wildlife species that inhabit the area. Indicators of potential OHV route impacts on the general wildlife species in the TMA include the miles of routes in the various species habitats. show the miles of evaluated routes in each alternative network that are in various species habitats.

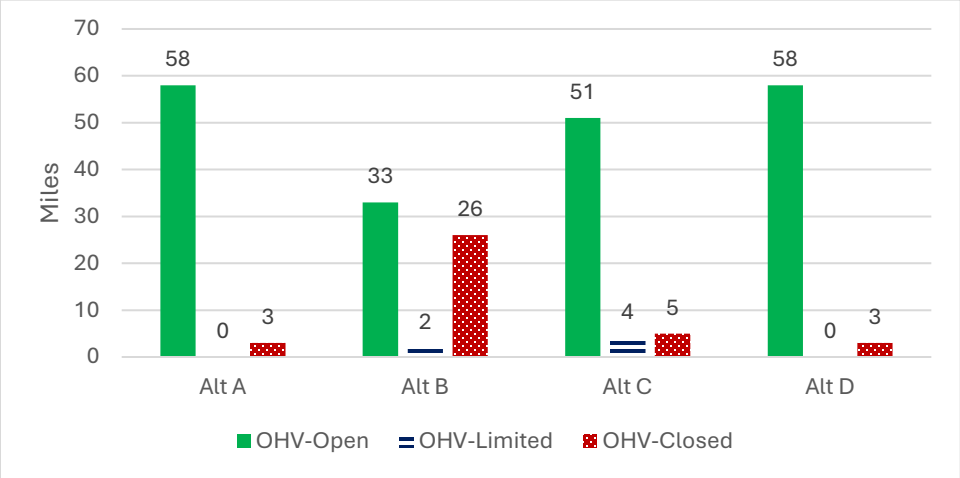


**Figure 31: Miles of Evaluated Routes in Black Bear Habitat**

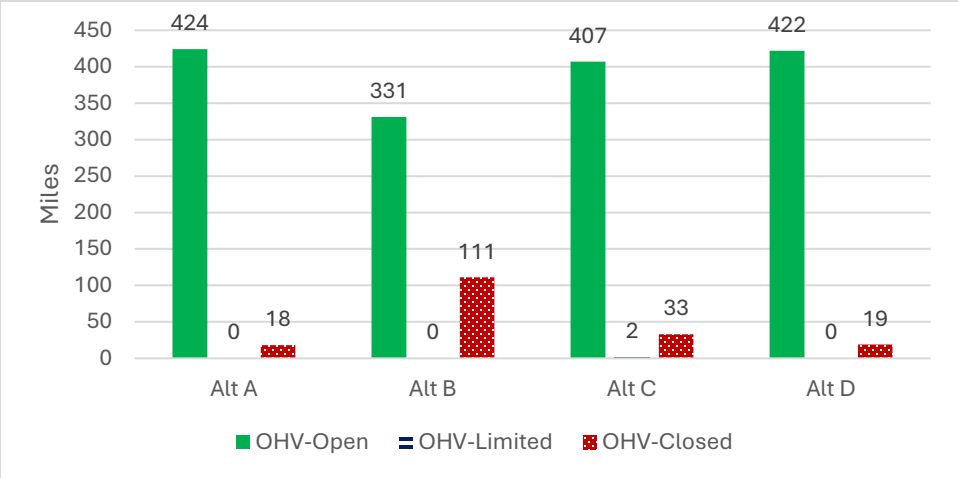


**Figure 32: Miles of Evaluated Routes in Cougar Habitat**

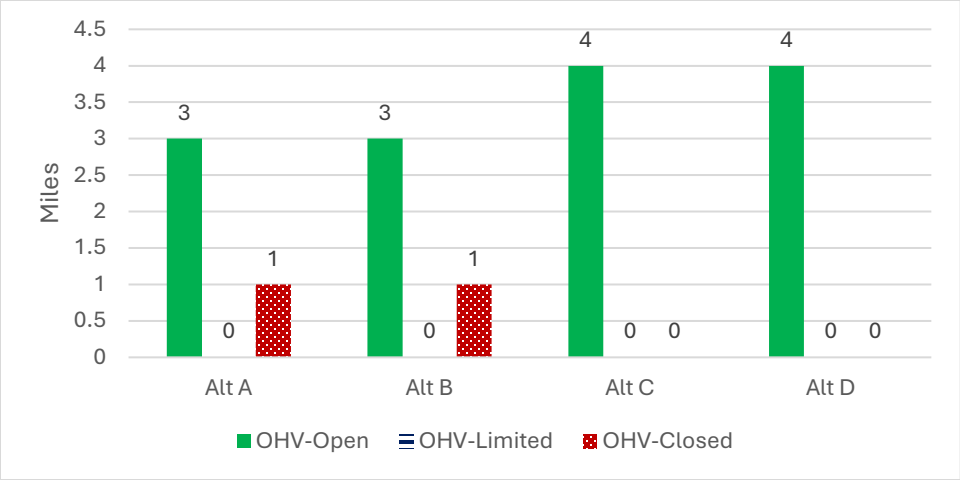


**Figure 33: Miles of Evaluated Routes in Desert Bighorn Sheep Habitat**

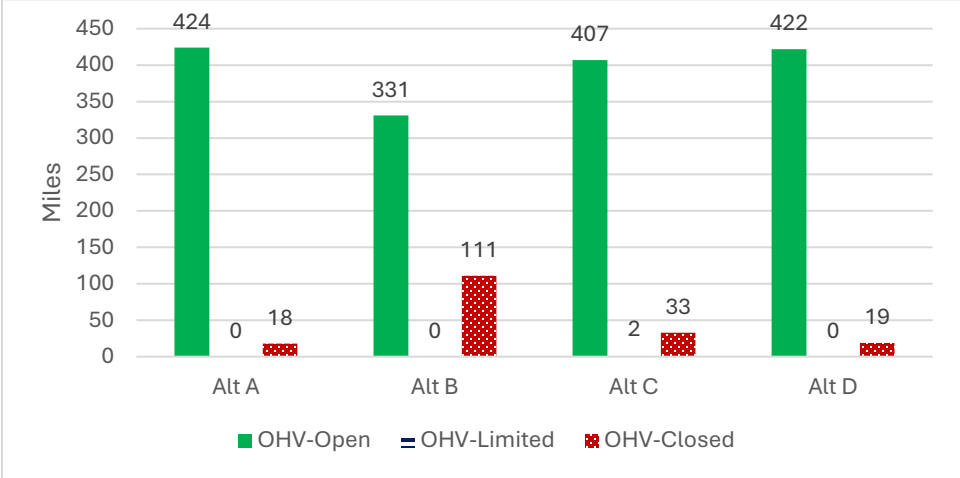


**Figure 34: Miles of Evaluated Routes in Mule Deer Habitat**

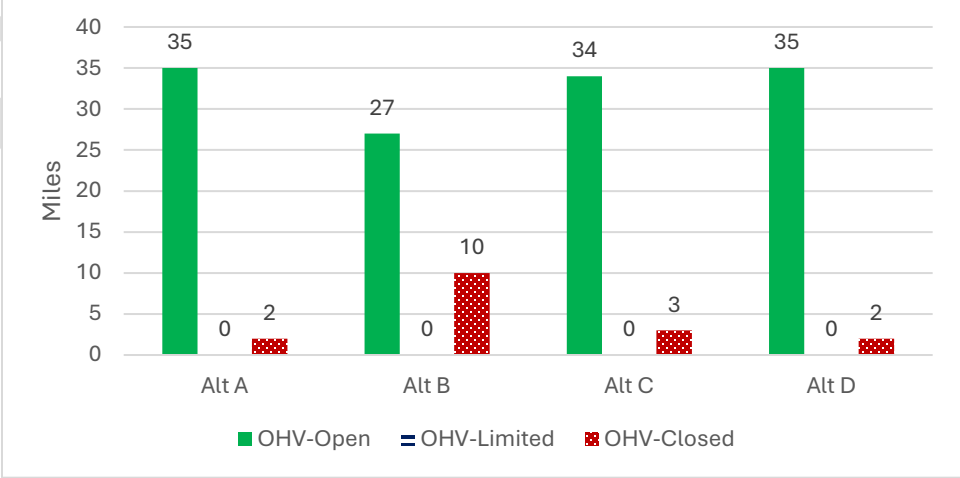


**Figure 35: Miles of Evaluated Routes in Rocky Mountain Elk Habitat**

### 3.12.2.1. Alternative A

Under Alternative A, there would be no route designation changes to OHV-Open designations in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were

undesignated in 2008. Within black bear habitat, 95% of the evaluated route miles would remain designated OHV-Open. In cougar and mule deer habitat, 96% of the evaluated route miles would remain OHV-Open. In desert bighorn sheep habitat, 75% of the evaluated route miles would remain OHV-Open. And in elk habitat, 95% of the evaluated route miles would remain OHV-Open. Impacts to habitat from ongoing OHV use (e.g., direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.) would reflect a decrease from current use.

#### 3.12.2.2. Alternative B

Compared to Alternative A, Alternative B proposes reductions in evaluated route miles designated for OHV use of 40% in black bear habitat; 22% in cougar and mule deer habitat; 23% in elk habitat; and 8% in desert bighorn sheep habitat. Effects on general wildlife habitat noted above would continue to occur from those routes designated OHV-Open. Overall, Alternative B would have the lowest potential of any alternative for OHV-related impacts to general wildlife.

#### 3.12.2.3. Alternative C

Compared to Alternative A, Alternative C proposes a reduction in evaluated route miles designated for OHV use of 5% in black bear habitat; 4% in cougar and mule deer habitat; and 3% in elk habitat. Alternative C proposes a 16% (1-mile) increase in route miles designated for OHV use in desert bighorn sheep habitat. Effects on general wildlife habitat noted above would continue to occur from those routes designated OHV-Open or OHV-Limited. Overall, Alternative C would have lower potential than Alternatives A and D but higher potential than Alternative B for OHV-related impacts to general wildlife.

#### 3.12.2.4. Alternative D

Compared to Alternative A, Alternative D proposes no change in black bear and elk habitats, less than 1% (1-mile) decrease in cougar and mule deer habitat, and, like Alternative C, an increase in desert bighorn sheep habitat of 16% (1- mile). Effects on general wildlife habitat noted above would continue to occur from those routes designated OHV-Open. Overall, Alternative D would have similar potential to Alternative A but higher potential than the other action alternatives for OHV-related impacts to general wildlife.

### 3.13. Wildlife - Issue 12: How would the route designation alternatives affect T&E and BLM Sensitive wildlife species and their habitats within the TMA?[12]

The analysis area for T&E and Sensitive wildlife species is the entire TMA plus any contiguous habitat that extends outside the TMA because it is the smallest unit which shows all impacts to these wildlife species and their habitats affected by the TMP.

#### 3.13.1. Affected Environment

The TMA contains habitats for California condor (experimental) and Mexican spotted owl which have been identified and recognized by the U.S. Fish and Wildlife Service (USFWS) in each of the species recovery plans and habitat models. Road density along with habitat fragmentation

[12] The BLM Biological Assessment (BA) analyzed an early version of Alternative D with more open milage than any current alternative. BLM did this to start Section 7 consultation and has since lowered all alternative's below the Section 7 consultation mileage. This has led to a difference between the EA alternatives and the milage consulted upon in the BA.

could vary slightly depending on which alternative is selected. Mileages listed in the affected environment descriptions below include routes designated as part of the 2008 TMP as well as additional existing routes that have been inventoried and evaluated by the IDT as part of this TMP, there would be no route designation changes in the TMA. Within California condor experimental habitat, 93% of the evaluated route miles would remain OHV-Open and 7% would remain OHV-Closed. Within Mexican spotted owl critical habitat, 95% of the evaluated route miles would remain OHV-Open and 5% would remain OHV-Closed. Impacts to special status animal habitat from ongoing OHV use (e.g., direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.) would reflect a continuation of current management.

**California condor (*Gymnogyps californianus*) – Endangered:** The California condor is listed as a federally endangered species with a 10J non-essential, experimental status in the TMA, meaning this species is treated as though it is proposed for federal listing rather than as endangered. Thus, for the proposed project, only two provisions of section 7 would apply; section 7(a)(1), which requires all Federal agencies to use their authorities to conserve listed species, and section 7(a)(4), which requires Federal agencies to informally confer with the Service on actions that are likely to jeopardize the continued existence of a proposed species. The Service does not foresee that activities in the California condor nonexperimental population area would jeopardize the continued existence of the California condor (61 FR 54045 54060, October 16, 1996. Though historically widespread in California, Arizona, Oregon, and Mexico, it declined to extirpation in the wild in the mid-1980s; captive breeding and reintroduction efforts are in progress, and the species is now found in California, Arizona, and southern Utah, including in Kane County. Nesting habitat tends to be steep, remote terrain—rock or cliff escarpments—in mountains or canyons. Foraging areas are typically separate, in open grasslands, oak savannas, and mountain plateaus. Experimental habitat exists across the TMA. Monitoring by the Peregrine fund indicates use by condors in the TMA is limited; the TMA, particularly the area adjacent to Zion National Park, is primarily used as flyover /roosting habitat. The TMA has 17,283 acres and 13 miles of evaluated routes within California condor experimental habitat (NSE 2024, UDWR 2026b).

**Mexican spotted owl (*Strix occidentalis lucida*) – Threatened:** The Mexican spotted owl was listed as threatened on March 16, 1993 (USFWS 1993a) and critical habitat was designated on August 31, 2004 (USFWS 2004). Mexican Spotted Owls are considered imperiled in Utah. The species is found across a broad geographic area, but not uniformly. Habitat includes old-growth and mature forests as well as canyon walls; these environments provide sites for protected nests and roosts. In Utah, MSO habitat is found within steep, rocky canyons composed of prominent vertical cliffs, complex tributary canyons, and a variety of vegetation communities (Rinkevich and Gutiérrez 1996, Willey 1998, Lewis 2014, Willey and van Riper 2015). Critical habitat is characterized by presence of water; clumps or stringers of mixed-conifer, pine-oak, pinyon-juniper, and/or riparian vegetation; canyon walls containing crevices, ledges, caves; and high percentage of ground litter and woody debris. Designated critical habitat/modeled habitat occurs across the entire TMA and includes 27,792 BLM acres that are potentially impacted by 57 miles of evaluated routes; no new routes are being proposed within designated critical habitat for Mexican spotted owl. (NSE 2024, USFWS 2012, Willey 1998, 2015).

**Table 15: Threatened and Endangered Animal Species and Their Habitats**

| Species | Habitat | BLM Habitat Acres | Miles of Evaluated Routes within Habitat |
|---|---|---|---|
| California Condor | Experimental | 17,283 | 13 |
| Mexican Spotted Owl | Critical | 27,792 | 57 |

Motorized and non-motorized visitation and recreation in the TMA will increase over time as populations continue to grow (Leaver 2024). Non-motorized recreation, primarily canyoneering, can have negative impacts on potential Mexican spotted owl habitat. A study found that owls exposed to hikers sometimes flushed and spent more time vocalizing and less time handling prey and performing maintenance activities than owls not exposed to hikers (Swarthout and Steidl 2001, 2003). The researchers concluded that cumulative disturbance caused by recreational hiking near nests potentially could be detrimental to owls, but likely only where owls occupied canyons receiving use by greater than or equal to 50 hikers per day (Swarthout and Steidl 2003). Livestock grazing occurring throughout the TMA has minor impacts on potential Mexican spotted owl habitat due to the low utilization of canyon habitat compared to more accessible grazing areas.

Current and foreseeable trends and actions affecting T&E wildlife in the analysis area include recreation, enhancement of recreational opportunities, and vegetation treatment projects.

### 3.13.2. Environmental Effects Analysis

Alternative route networks with fewer travel routes would likely benefit condor and owl habitats whereas networks with more routes could have a detrimental effect. Travel route networks and associated activities—such as parking, roadside camping, passing, staging, hiking, rappelling and exploring—can affect condor and owl habitat suitability through direct mortality or injury from collisions, and damage to prey species' habitats. Additionally, noise may negatively impact species at roosting and nesting sites. Indirect risks related to habitat include damage, loss, fragmentation resulting from habitat isolation, the proliferation of invasive weeds, and increased wildfire risk due to travel management practices. Indirect effects also include altering or influencing of prey species (e.g., small mammals, rodents, lizards, snakes, and insects) behavior as a result of disturbance to cover vegetation from unauthorized cross-country travel which this TMP does not propose.

Indicators of potential OHV route impacts on condor and owl habitats include the miles of routes in each species habitat. Figure 36 and Figure 37 show the miles of evaluated routes in each alternative network that are in condor and owl habitat.

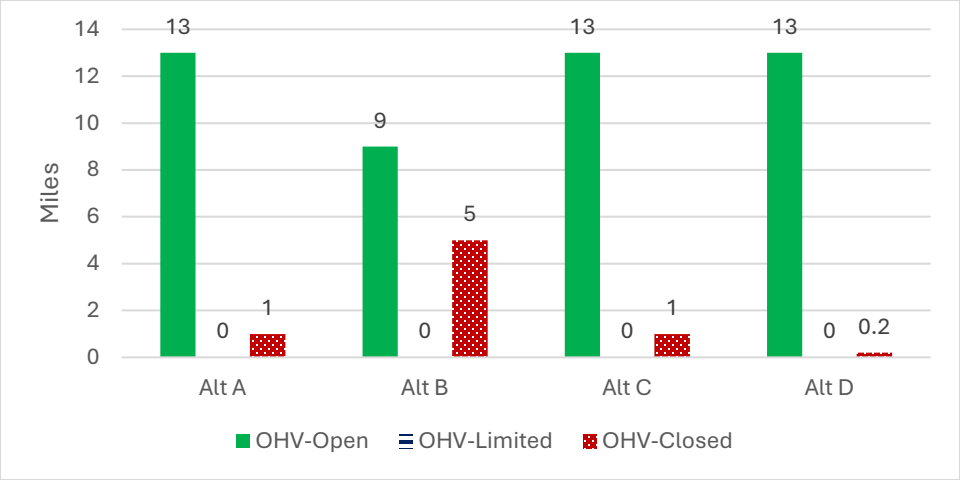


**Figure 36: Miles of Evaluated Routes in California Condor Experimental Habitat**

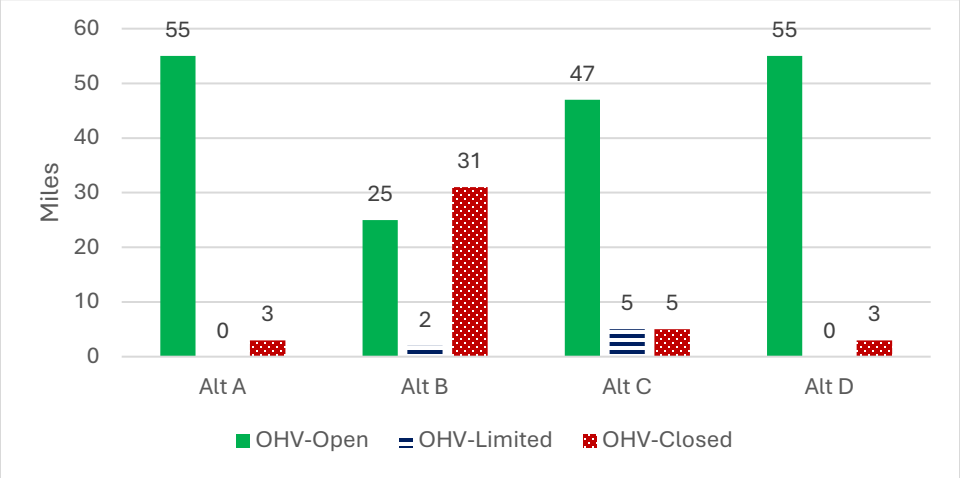


**Figure 37: Miles of Evaluated Routes in Mexican Spotted Owl Critical Habitat**

A Biological Opinion was issued by the US Fish and Wildlife service on February 7, 2022. The conclusion of that opinion stated" It is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Mexican spotted owl, Jones cycladenia, Welsh's milkweed, and Siler pincushion cactus or result in the adverse modification of critical habitat for Mexican spotted owl, or Welsh's milkweed.

### 3.13.2.1. Alternative A

Under Alternative A, there would be no route designation changes to OHV-Open designations in the TMA. Designations of OHV-Closed would be applied to the 19 miles of routes that were undesignated in 2008. Within California condor experimental habitat, 93% of the evaluated route miles would remain OHV-Open and 7% would remain OHV-Closed. Within Mexican spotted owl critical habitat, 95% of the evaluated route miles would remain OHV-Open and 5% would remain OHV-Closed. Impacts to special status animal habitat from ongoing OHV use (e.g., direct mortality, injury, behavioral modifications, habitat alteration, habitat fragmentation, etc.) would reflect a decrease from current use.

#### 3.13.2.2. Alternative B

Alternative B would designate 9 miles of evaluated routes OHV-Open within California condor experimental habitat, a 31% reduction from Alternative A. In Mexican spotted owl critical habitat, Alternative B would designate 27 miles of evaluated routes for OHV use, a 51% reduction compared to Alternative A. The same types of effects to special status animal habitat noted above would continue to occur from those routes designated OHV-Open. Overall, Alternative B would have lower potential than all other alternatives for OHV-related impacts to special status animals within the TMA.

#### 3.13.2.3. Alternative C

Alternative C would designate 13 miles of evaluated routes for OHV use (OHV-Open or OHV-Limited) within California condor experimental habitat, a very slight (0.2-mile) increase from Alternative A. In Mexican spotted owl critical habitat, Alternative C would designate 52 miles of evaluated routes for OHV use, a 5% reduction compared to Alternative A. The same types of effects on special status animal habitat noted above would continue to occur from those routes designated OHV-Open or OHV-Limited. Overall, Alternative C would have similar potential to Alternatives A and D but higher potential than Alternative B for OHV-related impacts to California condor habitat. Alternative C would also have lower potential than Alternatives A and D but higher potential than Alternative B for OHV-related impacts to Mexican spotted owl critical habitat in the TMA.

#### 3.13.2.4. Alternative D

Alternative D would designate 13 miles of evaluated routes OHV-Open within California condor experimental habitat, a slight (0.7-mile) increase from Alternative A. In Mexican spotted owl critical habitat, Alternative D would designate 55 miles of evaluated routes for OHV use, the same as Alternative A. The same types of effects on special status animal habitat noted above would continue to occur from those routes designated OHV-Open. Overall, Alternative D would have slightly higher potential to Alternatives A and C and higher potential than Alternative B for OHV-related impacts to California condor habitat. Alternative D would have the same potential as Alternative A but higher potential than the other action alternatives for OHV-related impacts to Mexican spotted owl critical habitat in the TMA.

# CHAPTER 4. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION

## 4.1. Public Involvement

Public scoping occurred from October 30 – November 30, 2020, and was intended to solicit input from the public on the route inventory and identify issues and concerns the BLM should consider in developing the travel management plan and assessing potential impacts to natural resources. See the scoping report for a summary of public scoping. Public scoping occurred under DOI-BLM-UT-P020-2021-0002-EA. That NEPA number's status was changed to cancelled to allow the BLM to balance agency priorities and associated workloads, incorporate input from incoming agency leadership, and re-engage with cooperating agencies. The BLM brought forward the input received and utilized it in this EA.

On February 1, 2021, in accordance with the 2017 Settlement Agreement the KFO posted the Trail Canyon TMP scoping report, the preliminary alternative maps, the draft LWC baseline monitoring report, and the draft route evaluation reports.

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

## 4.2. Consultation and Coordination

### 4.2.1. National Historic Preservation Act (NHPA) Section 106

The BLM conducted NHPA consultation in accordance with the 2018 Travel PA. These consultation efforts included seeking input from Indian tribes and consulting parties regarding the Area of Potential Effect (Stipulation III.A.1.b), KFO Class I Inventory and site potential models (Stipulation III.A.2), determining the need for phased Class II Inventory after approving the TMP (Stipulation III.B.1), the BLM's finding of effect (Stipulation IV), and BLM's resolution of adverse effects through development of a Historic Property Treatment Plan (Stipulation V.). BLM's consultation efforts are further documented in Appendix A.

### 4.2.2. Tribal Consultation

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

**NHPA Section 106 Consulting Tribal Entities**

- The Hopi Tribe
- Pueblo of Acoma
- Kaibab Band of Paiute Indians
- Pueblo of Jemez
- Navajo Nation
- Pueblo of Laguna
- Paiute Indian Tribe of Utah
- Pueblo of Santa Clara
- Pueblo of Zia
- Pueblo of Zuni

### 4.2.3. Other Consulting Parties

The NHPA and the Travel PA direct the BLM to invite parties who may have a demonstrated interest in the undertaking to participate in consultation.

**NHPA Section 106 Consulting Parties**

- Balance Resources
- Blue Ribbon Coalition
- The Church of Jesus Christ of Latter-Day Saints
- City of Kanab
- Colorado Off Highway Vehicle Coalition
- Grand Staircase Escalante Partners
- Kane County, Utah
- Southern Utah Wilderness Alliance
- State Institutional Trust Lands Administration

- Trails Preservation Alliance
- Utah Public Lands Policy Coordination Office
- Utah Rock Art Research Association
- Utah State Historic Preservation Office
- Utah/Arizona ATV Club

### 4.2.4. Government-to-Government Tribal Consultation

Owing to the amount of time that lapsed between the initial project information sharing and the most recent work associated with the proposed action, updated information sharing and invitations to engage in government-to-government consultation under Executive Orders 13175 and 13007, guided by the 2022 Presidential Memorandum on tribal consultation standards and 2021 Presidential Memorandum on strengthening nation-to-nation relationships, were sent to the following Tribes on June 22, 2026, including:

- Paiute Indian Tribe of Utah
- Kaibab Band of Paiute Indians
- The Hopi Tribe
- Navajo Nation

Government to government consultation regarding resources of concerns remains ongoing. The BLM will honor any requests from Tribes regarding additional information or additional meetings.

### 4.2.5. Endangered Species Act Section 7

The BLM has coordinated with the United States Fish and Wildlife Service (USFWS) to determine analysis areas for listed species.

A letter was sent with a Biological Assessment September 29, 2021. A Biological Opinion was issued by the USFWS on February 7, 2022. The conclusion of that opinion stated" It is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Mexican spotted owl, Jones cycladenia, Welsh's milkweed, and Siler pincushion cactus or result in the adverse modification of critical habitat for Mexican spotted owl, or Welsh's milkweed.

### 4.2.6. Cooperating agencies

Cooperating Agencies involved with this plan included Kane County, the Utah School Institutional Trust Lands Administration (SITLA or TLA), and the State of Utah Public Lands Policy Coordinating Office (PLPCO). After evaluation, these cooperators reviewed the preliminary alternative travel route networks and provided feedback on the preliminary route designations and the draft alternative route networks

# A. Appendix A: Conformance

## A.1 Conformance with BLM Land Use Plan

The action alternatives described in this document are in conformance with applicable management direction in the 2008 RMP, which provides overarching management decisions, goals, and guidance for this travel planning effort. RMP decisions and goals to which this project conforms are listed below.

**Table 16: RMP Travel-Related Management Decisions and Goals**

| 2008 RMP | Decision | How the TMP Conforms |
|---|---|---|
| Transportation Goals and Objectives (p. 106) | • Maintain access, where needed, to meet public and administrative needs including acquiring or maintaining necessary access across non-federal land.<br>• Compatible traditional, current, and future use of the land would be sustained by establishing a route system that contributes to protection of sensitive resources, accommodates a variety of uses, and minimizes user conflicts.<br>• Public access, resource management, and regulatory needs would be considered through transportation planning, incorporating consideration of access needs and the effects of and interaction among all forms of travel, including motorized, mechanized, and non-motorized/mechanized travel.<br>• Coordinate OHV management with adjacent BLM field offices and other agencies where possible.<br>• Provide opportunities for OHV use on public lands. | The BLM considers these goals and objectives in developing route designation alternatives. |
| **TRC-1** | Management of motorized access would balance protection of resources while providing for resource use needs. | The BLM considers how the designation of OHV routes affects resources. |
| **TRR-2** | Consideration of route and trail modifications (new or existing) will be conducted on a case-by-case basis in accordance with resource/use objectives and after appropriate NEPA review and analysis. | The BLM considers route designation, modifications to route alignments (for resource protection) and implementation as part of this TMP. |
| **TRR-4** | BLM could impose limitations on the types of vehicles allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife habitat, cultural or vegetative resources, especially by off-road travel in an area that is limited to designated routes. | The BLM considers limiting certain routes to specific types of vehicles during development of TMPs. It also considers ways to minimize disturbances to soil, wildlife habitat, cultural, or vegetative resources. BLM will monitor the adopted travel network and will engage in adaptive management as appropriate. |
| **TRR-5**<br>**WSA-4** | Where routes remain available for motorized use within WSAs [Wilderness Study Areas], such use could continue on a conditional basis. Use of the existing routes in the WSAs ("ways" when located | The BLM considers impairment to wilderness suitability when proposing route designations within the WSAs in accordance with BLM |

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| | within WSAs) could continue as long as the use of these routes does not impair wilderness suitability, as provided by the 1995 Interim Management Plan (IMP). If Congress designates the area as wilderness, the routes will be closed. In the interim, if use and/or non-compliance are found through monitoring efforts to impair the area's suitability for wilderness designation, BLM would take further action to limit use of the routes or close them. The continued use of these routes, therefore, is based on user compliance and non-impairment of wilderness values. | Manual 6330 (BLM 2012c) which replaced the 1995 IMP.<br>Any routes designated in WSAs by this TMP will be subject to monitoring and designation reevaluation if use is found to impair wilderness suitability. |
| **TRV-1** | Coordinate transportation planning with Kane and Garfield counties. | The BLM included Kane County as a cooperator in developing this TMP. The TMA does not overlap Garfield County. |
| **TRV-2** | The BLM would continue to repair, maintain, and rehabilitate routes to maintain existing route conditions. Route modifications (new facilities or expansion of existing facilities) would be determined on a case-by-case basis in accordance with resource/use objectives and after appropriate NEPA review and analysis. | The BLM considers route maintenance and rehabilitation as part of the implementation of this TMP. |
| **TRV-4** | BLM, in preparing its RMP designations and its implementation-level travel management plans, is following policy and regulation authority found at 43 CFR 8340, 43 CFR 8364, and 43 CFR 9268. | The BLM considers policies and regulations as part of this TMP. |
| **TRV-5** | As per the State of Utah v. Andrus, October 1, 1979 (Cotter Decision), BLM would grant the State of Utah reasonable access to state lands for economic purposes on a case-by-case basis. | This TMP does not change the BLM's responsibilities under the Cotter Decision. |
| **REC-6** | Non-Motorized RMZ:<br>OHV: Limit to designated routes to access trail heads | The BLM considers route designations in non-motorized RMZ where appropriate to access trailheads. |
| **REC-9** | Dunes RMZ:<br>OHV: Open beyond vegetated and conservation areas. All vehicles on the dunes are required to stay at least 10 feet from vegetation. | The BLM considers designating a travel network and does not change any area designations made in the 2008 RMP. |
| **REC-10** | Non-Dunes Wooded RMZ:<br>OHV: Limit to designated routes to access trail heads. | The BLM considers route designations in the Non-Dunes Wooded RMZ where appropriate to access trailheads. |
| **REC-11** | Orderville Canyon SRMA [Special Recreation Management Area]:<br>OHV: Limit to designated routes except closed to OHV use within the 500 acres of the Orderville Canyon suitable "wild" segment | The BLM considers route designations in the limited portion of the SRMA but not within the closed area within (within the 500 acres of the suitable "wild" segment). |
| **REC-12** | North Fork Virgin River SRMA:<br>OHV: Limit to designated routes except closed to HV use within the 200 acres of the North Fork Virgin River suitable "wild" segment | The BLM considers route designations in the limited portion of the SRMA but not within the closed area within (within the 200 acres of the suitable "wild" segment). |

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| **REC-14** | Kanab Field Office ERMA:<br>Provide support facilities for recreation experience. | The BLM considers the impact of route designations on recreation experience. |
| **REC-20** | Use the minimum necessary signage to provide for public safety and information or to control unauthorized use. | The BLM considers route signing in the TMP's implementation guide (Appendix E). |
| **REC-22** | Management responses to unacceptable resource and/or social conditions will range from least restrictive methods (e.g., information and education) to most restrictive (e.g., visitor limits, supplemental rules, or restrictions). Where feasible, the least restrictive methods will be the first priority. (Recognize that various levels of regulations and limits are necessary. Restrictions and limitations on public uses should be as small as possible without compromising the primary goal.) Use on-the-ground presence as a tool to protect public lands. | The BLM considers in this TMP how OHV designations affect resources and proposes management actions commensurate with potential impacts. |
| **REC-27** | Limit vehicle parking for dispersed camping within 150 feet of designated routes. | The BLM considers the potential effects of parking and staging of vehicles off of designated routes in this TMP. |
| **REC-36** | Impacts to soundscapes around national parks would be considered and mitigated through the application of specific mitigation measures identified in activity-level planning and NEPA-level review. | The BLM considers impacts of route designations in this TMP to natural soundscapes around Zion National Park. |

The proposed action also supports other 2008 RMP actions for soil, water, special status species, fish and wildlife, drought and natural disasters, minerals and energy, Areas of Critical Environmental Concern, and Wild and Scenic Rivers, including SOL-10, WAT-4, SSS-21, SSS-29, SSS-44, WL-14, DND-2, MIN-6, ACEC-2, WSR-6, WSR-7, WSR-8, WSR-9, WSR-10, and WSA-6.

## A.2 Relationships of the TMP to Laws, Regulations, Policies, and Other Plans

The route designation alternatives were developed in accordance with applicable laws, regulations, and BLM policy including, but not limited to, those listed in Table 17

**Table 17: TMP Relationship to Laws, Regulations, Policies, and Other Plans**

| Law, Regulation, or Plan | Requirement | How the TMP Relates |
|---|---|---|
| **The Federal Land Policy and Management Act of 1976** | Section 102 requires that public lands be managed in a manner that will protect the quality of various resource values, that will preserve and protect certain public lands in their natural condition, and that will provide for outdoor recreation and human occupancy and use.<br><br>Section 103 requires the management of the public lands and their various resource values to best meet the present and future needs of the American people, a combination of balanced and diverse | The BLM considered protection of various resource values, their natural condition, and outdoor recreation and human use in the TMP route network alternatives.<br><br>The BLM considered the present and future needs of the American people, balanced and diverse resource uses, long term needs of future generations, and harmonious and coordinated management without permanent impairment of the productivity of the |

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| | resource uses that takes into account the long-term needs of future generations, and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment. | land and quality of the environment in the TMP route network alternatives. |
| **National Historic Preservation Act of 1966** | Section 106 requires Federal agencies assess the effects its actions may have on historic properties. | The BLM assessed adverse effects from its route network alternatives to historic properties in accordance with the requirements of the *2018 Programmatic Agreement Among the Advisory Council on Historic Preservation, The Bureau of Land Management-Utah and the Utah State Historic Preservation Office Regarding National Historic Preservation Act Responsibilities for Travel and Transportation Management Undertakings* (Travel PA). The TMP is subject to consultation under this law as appropriate. |
| **Endangered Species Act of 1973** | Section 7 requires Federal agency actions do not jeopardize the existence of any listed species. | The BLM considered the effects of the TMP route network alternatives to listed species and their habitats. KFO completed consultation with the USFWS under this law with a signed Biological Opinion on February 7, 2022. |
| **Migratory Bird Treaty Act of 1918** | Prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species. | The BLM considered the effects to migratory birds and their habitats from the TMP route network alternatives. |
| **Paleontological Resources Preservation Act of 1966** | Section 3 directs Federal land managers to maximize the conservation and preservation of paleontological resources on Federal land. | The BLM considered the potential fossil yield classification system and known paleontological sites to identify impacts to paleontological resources from the TMP route network alternatives. |
| **The Wilderness Act of 1964 (P.L. 88-577)** | Establishes resource management policy and direction and identifies specific activities prohibited within Congressionally designated wilderness. | The BLM considered the potential impacts from the TMP route network alternatives to adjacent wilderness areas. |
| **The Wild and Scenic Rivers Act of 1968 (P.L. 90-542)** | Establishes eligibility and classification criteria, and policy guidance for different designations of Wild and Scenic Rivers on BLM-administered lands. | The BLM considered the potential impacts from the TMP route network alternatives on designated and suitable Wild and Scenic river segments within and adjacent to the TMA. |
| **43 CFR § 8340** | Establishes criteria for designation public lands as open, limited or closed to the use of off-road vehicles and establishes controls governing the use and operation of off-road vehicles in such areas. | The BLM considered the designation criteria and OHV controls in the TMP route network alternatives. |
| **43 CFR § 8342.1 designation criteria** | Requires designations to be based on the protection of the resources of the public lands, the promotion of the safety of all the | The BLM considered resource protection, public safety, and conflict minimization considerations for each |

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| | users of public lands, and the minimization of conflicts among various uses of public lands. | TMP route network alternative. The BLM documented those considerations in the EA. |
| **BLM's 2016 Travel and Transportation Management Manual (MS-1626)** | Provides detailed policy, direction and guidance for the comprehensive management of travel and transportation on Bureau of Land Management-administered lands. | The BLM followed the policies in this Manual in development of the TMP route network alternatives, except where those policies differed from the requirements of the 2017 Settlement Agreement. |
| **BLM's 2012 Travel and Transportation Handbook (H-8342)** | Provides specific guidance for preparing, amending, revising, maintaining, implementing, monitoring, and evaluating BLM land use and travel management plans | The BLM followed the policies in this Handbook in development of the TMP route network alternatives, except where those policies differed from the requirements of the 2017 Settlement Agreement. |
| **BLM Manual 6330 – Management of Wilderness Study Areas** | Provides detailed policy direction, and guidance for the management of Wilderness Study Areas established via the Federal Land Policy and Management Act on Bureau of Land Management-administered lands. | The BLM followed the policies in this Manual in development of the TMP route network alternatives, except where those policies differed from the requirements of the 2017 Settlement Agreement. |
| **BLM Manual 6340 – Management of Designated Wilderness Areas** | Provides detailed policy direction and guidance for areas designated under the Wilderness Act of 1964 on Bureau of Land Management-administered lands. | The BLM followed the policies in this Manual in development of the TMP route network alternatives, except where those policies differed from the requirements of the 2017 Settlement Agreement. |
| **BLM Manual 6400 - Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management** | Provides detailed policy direction and guidance for management of eligible, suitable, and designated Wild and Scenic Rivers on Bureau of Land Management-administered lands. | The BLM followed the policies in this Manual in development of the TMP route network alternatives, except where those policies differed from the requirements of the 2017 Settlement Agreement. |
| **Expanding Public Lands Outdoor Recreation Experiences Act (Explore Act) 2025** | Sec 127(d) of the Explore Act, which states,<br>"(d) Motorized and nonmotorized access. —The Secretaries shall seek to create additional opportunities, as appropriate, and in accordance with existing law, for motorized and nonmotorized access and opportunities on Federal recreational lands and waters administered by the Chief of the Forest Service or the Director of the Bureau of Land Management." | The BLM considered looked at the overall route network to identify purpose and need of routes and areas. As part of that review the IDT determined there were 19 miles of routes that were missed in 2008. These miles are being evaluated for classification.<br>This TMP does do prohibit the future consideration of additional roads in the future. |

Although county management plans do not apply to federally managed land, this TMP is in alignment with the Kane County Management Plan, pg. 204 that states "Public access must be considered through all levels of transportation planning" The BLM considered public access when developing the route network alternatives. BLM also included Kane County as a cooperator throughout the development of the TMP.

## A.3 Conformance to Section 106 of the National Historic Preservation Act through the Travel and Transportation Programmatic Agreement

### Introduction:

The 2018 *Programmatic Agreement among the Advisory Council on Historic Preservation, the Bureau of Land Management – Utah, and the Utah State Historic Preservation Office Regarding National Historic Preservation Act Responsibilities for Travel and Transportation Management Undertakings* (Travel PA) was developed and signed to "establish greater clarity in how BLM-Utah's travel and transportation management undertakings should make "a reasonable and good faith" effort to identify historic and traditional cultural properties in accordance with 36 CFR 800.4(b)(1)." The Travel PA also establishes BLM-Utah's procedures towards comprehensively meeting its obligations under 36 CFR Part 800 to identify, evaluate, and resolve potential adverse effects to historic properties (including traditional cultural properties) for travel and transportation management undertakings. To illustrate BLM's adherence to the stipulations of the Travel PA, Table 18, below, lists the requirements of the Travel PA and summarizes BLM's efforts to adhere to those requirements.

**Table 18: Stipulations of the Travel PA and the BLM's Actions to Adhere to those Requirements**

| Travel PA and the 2017 Settlement Agreement | Process for Completing these Requirements |
|---|---|
| ***Identifying Areas of Potential Effects (APEs) for OHV Route Designations - Travel PA Stipulation III.A.1.b.***<br><br>Under this stipulation the BLM must invite and seek consulting party (including the State Historic Preservation Officer (SHPO)) input when defining the width of the APE and seek any additional cultural resources information a consulting party wishes to share. | Per Travel PA III.A.1.a. the APE is defined as the geographical extent of the areas being proposed for designation as open and limited OHV areas in RMPs that could potentially affect historic properties. The 2008 RMP REC-27 limits vehicle parking for dispersed camping within 150 feet of designated routes. Tribes and consulting parties were notified of APE in letter dated April 12, 2021. |
| ***Travel PA Stipulation III.A.2. Literature Reviews and Cultural Resource Potential Maps for Open OHV Area and OHV Route Designations***<br><br>Under this stipulation the BLM must complete and/or update a literature review and cultural resource potential map. BLM must also invite and seek consulting party comments regarding these identification efforts. | Contract for literature review (Class I Inventory) and cultural resource potential map was awarded in August 2017. Consulting parties were invited to comment via letter dated July 3, 2018. A consulting party meeting was held on July 16, 2018. Comments from SHPO received via letter dated July 31, 2018.<br><br>Stipulation III.A.2. completed August 2018. |
| ***Travel PA Stipulation III.A.4.b Class III Surveys for OHV Route Designations***<br><br>Prior to approving OHV route designations, BLM will complete Class III surveys within all routes or portions of routes that are located within a cultural resource potential map's identification of a high potential cultural resource area.<br><br>**2017 Settlement Agreement Stipulations 24 (b)(ii) and (c), – Class III survey in certain ACECs and Class III surveys in high potential areas**<br><br>Prior to approving a TMP within certain ACECs the BLM must conduct Class III survey along all routes or portions of routes that are designated as open. | Directed Class III surveys were completed under Utah State Projects U17HQ0992 and U19TD0637.<br><br>Letters seeking input regarding BLM's finding of adverse effects were sent to Tribes and consulting parties on April 12, 2021.<br><br>Letter seeking concurrence of Adverse Effect was sent to SHPO on December 28, 2022. SHPO concurrence of Adverse Effect was received on January 13, 2023. |

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| The 2017 Settlement Agreement also requires Class III survey along all routes or portions of routes that are located in areas of high cultural resource potential that the BLM has identified in a Class I cultural resource inventory.<br><br>***Travel PA Stipulation IV.D. Stipulation Adverse Effects (36 CFR 800.5)***<br><br>Under this stipulation, the BLM must invite and seek consulting party input regarding BLM-Utah's finding of adverse effect. | |
| ***Travel PA Stipulation III.A. 3. Site Revisits for Open OHV Areas and OHV Route Designations***<br><br>Site revisits serve as a component of BLM's efforts to identify historic properties for undertakings that would designate OHV routes. | Site revisits to 75 (56+19) cultural resources were completed during Utah State Projects 17HQ0992, U19TD0637, and U22BL078. |
| ***Travel PA Stipulation III.B.1 Determining the Need for Phased Class II Surveys for Travel Management Plans***<br><br>This stipulation requires that the BLM invite and seek consulting party input regarding the need to conduct additional cultural resource surveys after the TMP has been approved. | ** *Letters need to be mailed to Tribes and consulting parties regarding BLM's determination on the need to conduct additional survey.* |
| ***Travel PA Stipulation V. Resolution of Adverse Effects Through Historic Property Treatment Plans***<br><br>BLM's resolution of adverse effects from the approval of the TMP are to be accomplished through the development of Historic Properties Treatment Plans (HPTP). BLM must provide an opportunity for SHPO, Indian tribes and consulting parties an opportunity to provide input on the HPTP. | HPTP for 32 historic properties was prepared under Utah State Project U24BL0413. Letters seeking input from consulting parties and SHPO were dated September 3, 2024; letters to Tribes were dated September 10, 2024. Per the Travel PA, a letter was sent to SHPO dated November 21, 2024, requesting HPTP review and including a summary of consulting party and Tribal comments. SHPO response was received on December 2, 2024, with no further comments. |

## B. Appendix B: Issues Not Analyzed in Detail

### B.1 AIB-1: Air Quality

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

The BLM Air Resource Management Strategy 2025 Monitoring Report (BLM, 2025), hereafter referred to as the Air Monitoring Report, discusses past, present, and foreseeable emissions and air quality data for Utah. The BLM incorporates by reference information from the Air Monitoring Report to help describe the air quality affected environment in the analysis area. The analysis area is airshed in which the TMA is located. However, air quality data is reported at the county level instead of by airshed, so Kane County is used as a proxy for the airshed and analysis area. The temporal scope of analysis is 20 years (see 3.1.1).

Under the Clean Air Act (CAA), the EPA established the National Ambient Air Quality Standards (NAAQS), which regulate outdoor air quality and protect public health and the environment. Areas can be classified as attainment, nonattainment, or unclassifiable in relation to the NAAQS. Kane County is a rural county with very few industrial emissions sources and is designated as unclassified for all NAAQS. An unclassifiable designation is applied where available monitoring data are insufficient, incomplete, or otherwise inadequate to support a determination of NAAQS attainment or nonattainment. In some cases, monitoring data may exist but does not meet EPA data completeness or quality requirements. Pursuant to the CAA, areas designated as unclassifiable are treated as attainment for regulatory purposes unless and until sufficient data becomes available to support a different designation. Although Kane County does not contain any regulatory ambient air monitoring stations, data from monitoring stations representative of the airsheds where lease parcels are located show no exceedances of the NAAQS. Representative monitoring data are available from Iron County and Washington County, Utah, and Coconino County, Arizona (see Tables 16 to 20 of the Air Monitoring Report (BLM, 2025)).

Emissions in Kane County for the most recent reporting year (2020) were 2,564.8 tons and 533.7 tons for particulate matter with aerodynamic diameters of 10 and 2.5 microns ($PM_{10}$ and $PM_{2.5}$), respectively, 7,226.1 tons of carbon monoxide (CO), 792.1 tons of nitrogen oxides ($NO_x$), and 190.9 tons of sulfur oxides ($SO_x$) (BLM, 2025). Unpaved roads, including routes in the TMA, are reported to produce 1,708.0 tons of $PM_{10}$ which is approximately 67% of county-wide $PM_{10}$ emissions.

On-route motorized travel and occasional route maintenance will create emissions of air pollutants through vehicle exhaust and lofted dust due to vehicles and wind. Since many of the routes are unpaved, the primary pollutant is particulate matter ($PM_{10}$ and $PM_{2.5}$). Vehicle exhaust produces emissions of particulate matter as well as gaseous emissions of $NO_x$, $SO_x$, and CO. Emissions are generally proportional to vehicle usage, which is a function of visitor numbers and total vehicle miles traveled (VMT). However, changes in visitation to the recreation area are unrelated to the action being considered because all alternatives involve designating existing routes for OHV use. While overall visitation to the region has increased in recent decades (United States Census Bureau, 2023), none of the alternatives would affect regional draw or recreation demand.

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

Across all alternatives, on-route emissions would continue to occur from vehicles using routes that remain open. None of the alternatives would authorize new route construction; authorize use of routes without prior ongoing use, even if such use was unauthorized; create or remove access to major destinations; authorize events; create or remove attractions; or authorize activities (such as construction) involving worker access. Therefore, no new air pollutant emission sources would result from implementation. Emissions associated with the TMA would be a subset of the county-level emissions presented above from relevant past, present, and reasonably foreseeable actions.

Changes in route designation (OHV-Open, OHV-Limited, OHV-Closed) may displace travel to other open routes inside or outside the TMA. However, the BLM has no data indicating that such displacement results in measurable changes to overall visitation or VMT that would lead to meaningful changes in air pollutant emissions. Because total visitation and VMT are expected to remain consistent across all alternatives, air pollutant emissions would also remain unchanged. Since each alternative designates only existing routes and introduces no new emission sources or measurable increases in VMT or visitor numbers, the Trail Canyon TMP is unlikely to generate new air pollutant emissions. As a result, emissions would be the same for each alternative. Since the TMA emissions are already included in the county-level totals and the county airshed is considered to be attaining air quality standards, it is likely that this travel management action will not adversely affect air quality or cause violations of the NAAQS. A detailed emissions inventory or quantitative analysis would not assist in differentiating among alternatives and would not focus on issues truly significant to the decision, because there would be no emission differences between alternatives.

## B.2 AIB-2: Dark Night Skies

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

The analysis area is the TMA because that is the smallest unit showing all the effects to dark night skies that are expected from implementation of the TMP. The temporal scope of analysis is 20 years (see Section 3.2). Dark night skies contribute to the remote experience that many people seek when they visit public lands. Light pollution diminishes the aesthetic values of the night sky by making it difficult to see fainter stars or other faint celestial objects (BLM 2023a). Optimal night skies are free of scattered light or skyglow, which is generated by anthropogenic light from development, transportation, or industrial operations. The scattering of artificial light in the atmosphere increases night sky luminance and erodes the visual appearance of stars and planets.

The communities of Kanab, Orderville, Mount Carmel, Glendale, Colorado City, Springdale, and isolated development points at Coral Pink Sand Dunes State Park and on the eastern edge of Zion National Park introduce only modest amounts of light pollution and minimally contribute to sky glow within the TMA (see Figure 38). Zion National Park was designated as an International

Dark Sky Park in 2021. Based on the 2023 data from http://www.lightpollutionmap.info, the Trail Canyon TMA has sky quality meter (SQM)[13] values between 21.9-22.0 which places it solidly within Bortle Class 1, the highest quality of dark night skies possible (Bortle 2006). Bortle Class 1 areas are described as Excellent Night Sky sites where portions of the Milky Way cast obvious shadows, many constellations are difficult to distinguish within the heavy background of visible stars, sources of zodiacal light, airglow, and globular clusters are readily visible to the naked eye, and both Jupiter and Venus are bright enough to affect night adaptation.

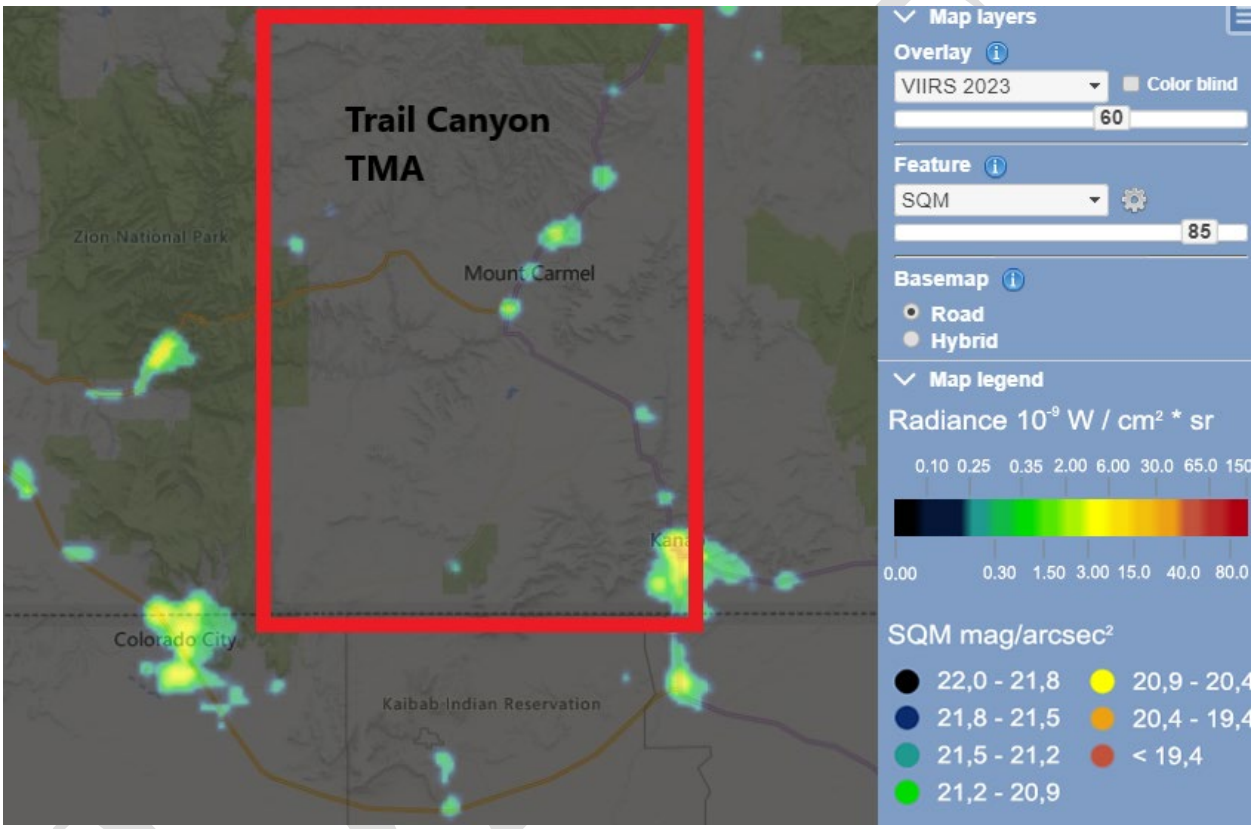



**Figure 38: 2023 Light Pollution Map of the TMA and Surrounding Area**

Potential impacts to dark night sky viewing experiences from the proposed alternatives would include temporary, transient, low-angle disturbances near the horizon from vehicle headlights or taillights while traveling after dark. Headlights can sometimes create temporary skyglow when reflecting off canyon walls. These impacts can be expected to occur most frequently early in the evenings when vehicles are traveling to and from trailheads or dispersed camping locations. Temporary and localized impacts to night sky viewing may also occur from occupied dispersed campsites accessed via the travel network. Later evenings and early morning hours when visitors are normally asleep would likely see much fewer impacts from vehicle lights and dispersed camping. Due to the temporary and transient nature of the anticipated impacts, cumulative effects to dark night skies would not result from vehicle travel or associated dispersed camping

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

within the TMA. Motor vehicle lighting requirements are established under the Federal Motor Vehicle Safety Standards by the National Highway Traffic Safety Administration, and therefore, are outside the purview of BLM's authority to influence. Motor vehicle regulation and registration are under the jurisdiction of the Utah Division of Motor Vehicles.

### B.3 AIB-3: Greenhouse Gas Emissions

How would travel management contribute to greenhouse gas (GHG) emissions at multiple scales?

The analysis area for the Trail Canyon TMA is Kane County and the State of Utah which provides appropriate context for understanding how emissions from the TMA relate to larger-scale emission totals. GHG emissions have long atmospheric lifespans and accumulate cumulatively with GHG emissions from other sources, therefore evaluating both county and state level emissions is relevant. The temporal scope of analysis is 20 years (see Section 3.1.1). The 2023 *BLM Specialist Report on Annual Greenhouse Gas Emissions Trends* (BLM, 2024b), hereby referred to as the Annual GHG Report, available at https://www.blm.gov/content/ghg is incorporated by reference.

The Trail Canyon TMA is in a remote setting with limited local GHG emissions sources. Total GHG emissions in Kane County for the most recent reporting year (2020) were 0.12 megatonnes (Mt) of carbon dioxide equivalent ($CO_2e$) (BLM, 2025). Chapter 3 of the Annual GHG Report contains additional information on GHGs and an explanation of $CO_2e$. These emissions primarily originate from mobile sources, including travel on existing routes in the TMA. At the state level, GHG emissions are reported to be 76.9 Mt $CO_2e$. County-level emissions information is not readily available for residential, commercial, agriculture, and fugitive sources, but at the state level these sources are approximately 21% of total GHG emissions. If Kane County follows a similar pattern to the statewide GHG emissions, these sectors would represent an additional ~0.03 Mt $CO_2e$ in the county. Existing emissions from the TMA would only be a subset of the 0.12 Mt $CO_2e$ mobile emissions in the county.

On-route motorized travel and occasional route maintenance activities are the primary sources of GHG emissions within the TMA. No other GHG sources (e.g., construction of new routes or activities that add travel demand) are part of the action. Emissions of GHGs are generally proportional to vehicle usage which is a function of visitor numbers and total vehicle miles traveled (VMT). However, changes in visitation to the recreation area are unrelated to the action being considered because all alternatives designate existing routes for OHV use. While overall visitation to the region has increased in recent decades (United States Census Bureau, 2023), none of the alternatives would affect regional draw or increased recreation demand.

Across all alternatives, on-route emissions would continue to occur from vehicles using routes that remain open. None of the alternatives would authorize the construction of new routes; authorize use of a routes without prior ongoing use, even if such use was unauthorized; create or remove access to major area destinations; authorize events; create or remove an attraction; or authorize an action (such as construction) that would involve worker access. Therefore, no new GHG emissions would occur from these activities.

Changes in route designation (OHV-Open, OHV-Limited, or OHV-Closed) may displace travel to other open routes inside or outside the TMA. However, the BLM has no data indicating that

such displacement results in measurable changes in overall visitation or VMT that would lead to meaningful changes in GHG emissions. Since total visitation and VMT are expected to remain the same across alternatives, GHG emissions would also remain the same.

Emissions associated with the TMA would continue to represent only a subset of the county and state level emissions from relevant past, present, and reasonably foreseeable actions. Although TMA level emissions have not been quantified, they are a very small fraction of statewide totals. For example, if all mobile emissions in Kane County (0.12 Mt $CO_2e$) occurred within the TMA, this would represent only 0.16% of Utah's total emissions (76.9 Mt $CO_2e$). Actual TMA emissions are considerably lower because they account for only a portion of the county's mobile emissions.

Because all alternatives designate existing routes and do not introduce new emission sources or measurable increases in VMT or visitor numbers, the Trail Canyon TMP is not likely to result in new GHG emissions. As a result, GHG emissions would be the same for each alternative. A detailed emissions inventory or quantitative analysis would not assist in differentiating among alternatives and would not focus on issues truly significant to the decision, because there would be no emission differences between alternatives.

### B.4 AIB-4: Lands and Access

How would the route designation alternatives affect access to rights-of-way, private lands, and lands administered by the State of Utah?

No route designation alternative would preclude existing or future BLM-authorized uses of existing routes, as OHV designations only apply to public access and not authorized uses. The BLM used high quality geographic information system (GIS) data to identify existing OHV access to federal land, state land, and private land within the TMA. The current condition for lands and access is established by the route designations under the 2008 TMP (Alternative A). The TMA includes BLM public lands, private lands, Trust Lands Administration (TLA) lands, and State Parks lands. In the TMA, 51 routes provide primary access to private lands, 9 routes provide primary access to Utah state lands or parks, and 25 routes provide access to TLA lands. Other evaluated routes provide alternate or secondary access to these lands, National Forest System lands, Tribal lands, and Zion National Park. The total number of evaluated routes within the TMA accessing non-BLM lands includes those designated as part of the 2008 TMP as well as additional existing routes that have been inventoried and evaluated by the IDT as part of this TMP.

OHV route designation decisions would not preclude authorized access for ROW holders, landowners, grazing permit holders, or other authorized users. A given alternative would not result in the loss, preservation, or gain of access to other landowner parcels or affect the owner's or authorized user's intended use(s) including but not limited to residential, livestock grazing, habitat improvements, mineral leases or extraction, authorized recreation (such as personal OHV use on private lands or special recreation permits on private or state land), income generation from TLA lands, etc. Even roads that are designated OHV-Closed would still be available for authorized access.

However, the alternatives do vary in the amount or level of access (i.e., primary vs. secondary) OHV users have to private, state, adjacent field office, U.S. Forest Service, and Zion National

Park lands proportional to the number of roads closed or limited to OHV use. Limitations or closures of routes to public OHV use can reduce OHV-user conflicts with authorized operations (e.g., gates left open, fence damage, unauthorized site access, trespass, etc.). Conversely, OHV-Open designations which allow public OHV use on existing routes leading to rights-of-ways, land administered by other agencies or owners, and authorized users such as grazing permittees, can create user conflicts.

During the analysis, the BLM discovered that some routes were redundant to one another and did not have a clear purpose and need. In those instances, the BLM considered OHV-Closed designations for redundant routes that were not important to the connectivity of the travel network. Minimization criteria were considered in developing route designation alternatives, especially where route redundancies and multiple access points were prevalent.

TMP implementation actions that may affect jurisdictional access include road maintenance (e.g., surface and ditch grading and drainage structure replacement or installation, etc.) and sign placement (e.g., digging post holes). Road maintenance may temporarily block access for authorized users and to private, State, and other federal lands. However, maintenance actions would likely also provide for sustained stable access for these users. Roads that provide access for authorized uses, rights of way or to other land jurisdictions, would not be reclaimed even if designated OHV-Closed, so long as access is needed for the authorized uses. Sign installations would direct recreation users to their destinations and educate users on allowable uses for a particular route. If implementation is proposed that falls outside of the previously disturbed area, additional site-specific NEPA would be required before the activity could occur.

Travel management coordination with the adjacent St. George Field Office (to make sure designations match routes that cross TMA boundaries) is ongoing and would be completed prior to the issuance of a Decision Record.

Indicators of potential travel route designation impacts on jurisdictional access includes the number of evaluated routes providing access to those jurisdictions. Figure 39-41 show the number of routes in each alternative network that provide access for the various jurisdictions in or extending out of the TMA.

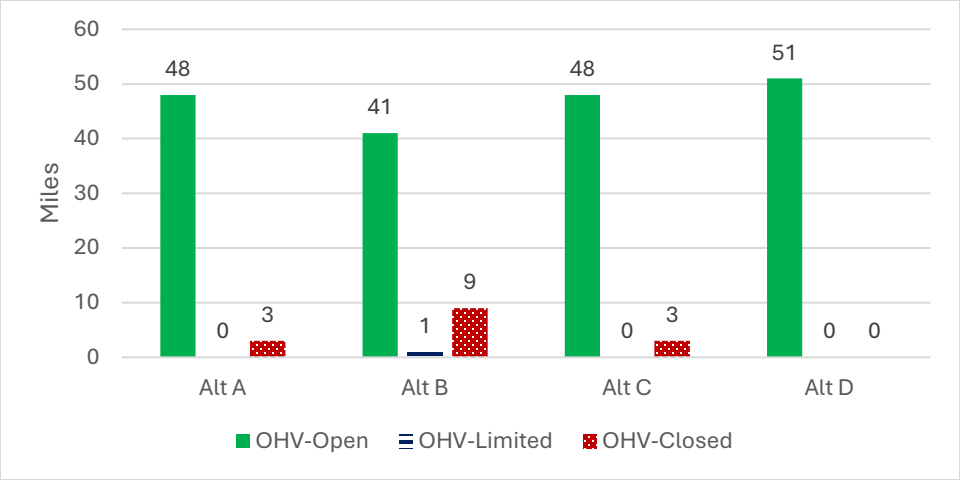



**Figure 39: Number of Evaluated Routes Providing Primary Access to Private Lands**

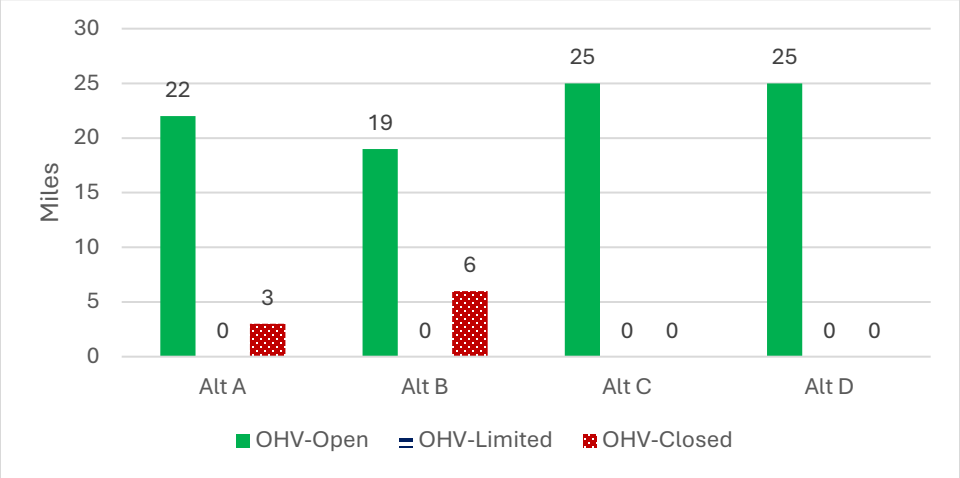



**Figure 40: Number of Evaluated Routes Providing Primary Access to TLA Lands**

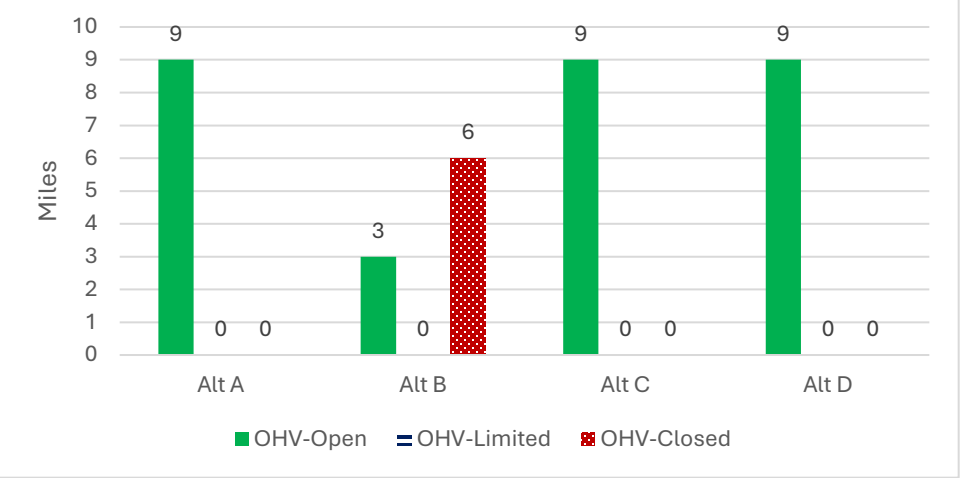



**Figure 41: Number of Evaluated Routes Providing Primary Access to State Parks**

Under Alternative A, there would be no route designation changes in the TMA. The number of evaluated routes providing access to other lands that would remain designated as OHV-Open include 94% of evaluated routes accessing private lands, 88% of evaluated routes accessing TLA

lands, and all 9 of the evaluated routes accessing State Parks. The effects described above to lands and access from OHV use (e.g., varying levels of access, conflicts between OHV recreation users and authorized users) would continue relative to the number of routes designated OHV-Open. Overall, under Alternative A, impacts from ongoing OHV use would reflect a continuation of current management.

Under Alternative B, the number of evaluated routes designated for OHV use that provide access to the TMA's various jurisdictions differ from Alternative A as follows. Overall, compared to Alternative A, Alternative B would provide less OHV access to adjacent land jurisdictions but would also have less potential for conflicts between OHV recreation users and authorized users.

- Private lands access: 12% reduction (-6 routes)
- TLA lands access: 14% reduction (-3 routes)
- State Parks access: 67% reduction (-6 routes)

Under Alternative C, the number of evaluated routes designated for OHV use that provide access to the TMA's various jurisdictions differ from Alternative A as follows. Overall, compared to Alternative A, Alternative C would provide more OHV access to adjacent land jurisdictions but would also have greater potential for conflicts between OHV recreation users and authorized users.

- Private lands access: no change
- TLA lands access: 14% increase (+3 routes)
- State Parks access: no change

Under Alternative D, the number of evaluated routes designated for OHV use that provide access to the TMA's various jurisdictions differ from Alternative A as follows. Overall, compared to Alternative A, Alternative D would provide more OHV access to adjacent land jurisdictions but would also have greater potential for conflicts between OHV recreation users and authorized users.

- Private lands access: 6% increase (+3 routes)
- TLA lands access: 14% increase (+3 routes)
- State Parks access: no change

### B.5 AIB-5: Livestock Grazing and Rangeland Health

How would the route designation alternatives impact livestock grazing operations and rangeland health within the TMA?

The analysis area is the entire TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). A total of 180 evaluated routes (30% of the network's routes) provide key access to corrals, fences, gates, mineral supplement locations, tanks/troughs, ponds, springs, wells, watering access, or water haul sites. These routes are utilized by grazing permittees and BLM range staff for compliance checks, monitoring, range improvement inspections, and range improvement project maintenance. Many other routes throughout the TMA are used by permittees to check livestock and by BLM range specialists to conduct compliance inspections. Traffic related to livestock grazing may include semi-trucks, vehicles, horseback, herding along roadways, etc. For overall details on livestock grazing in the TMA, see pages 3-81 to 3-86 of the 2008 Kanab Proposed RMP/Final EIS (BLM 2008b). For more details on the specific allotments

in the TMA, see the reports available through the BLM's Rangeland Administration System (RAS) at https://reports.blm.gov/reports/ras/.

Utah's Rangeland Health Standards for Livestock Grazing (BLM 1997) are comprised of the following: upland soils, riparian and wetlands, habitat, and water quality. "The purpose of the standards and guidelines....is to provide a measure (standard) to determine land health, and methods (guidelines) to improve the health of the public rangelands." BLM's job is "...to maintain the health of the land or make appropriate changes on the ground where land health standards are not being achieved" (BLM 2001). Soils, water resources, and habitat (native vegetation and weeds) are addressed separately in Sections 3.6, 3.10, B-8, B-14 and earlier in this appendix of the EA. The analysis in those sections focuses on disclosure of the effects of the route network alternatives and those resources. Rangeland health standards for livestock grazing would not be impacted by the route network alternatives because the action does not affect livestock grazing management and no new disturbance would be created as a result of travel network decisions.

Off-highway vehicle (OHV) activities may lead to conflicts between recreational users and livestock operators. Potential issues include vandalism of facilities, improperly opened gates, collisions between OHVs and livestock, as well as disturbance and displacement of livestock due to OHV and recreational activities, especially during periods of increased public OHV usage (spring, summer, and fall). Most livestock grazing within the TMA occurs during summer, with additional grazing taking place in late fall, winter, and early spring. High volumes of OHV traffic can directly impede access for cattle or water trucks to allotments or livestock by obstructing routes or access gates and corrals. Indirect impacts may encompass lost time and income resulting from repairs or replacements of damaged range improvements or facilities, retrieval of livestock displaced by open gates, and instances of livestock mortality.

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

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

Figure 42 shows the number of evaluated routes providing primary access to range improvement locations and can be used to assess the potential for the impacts noted above.

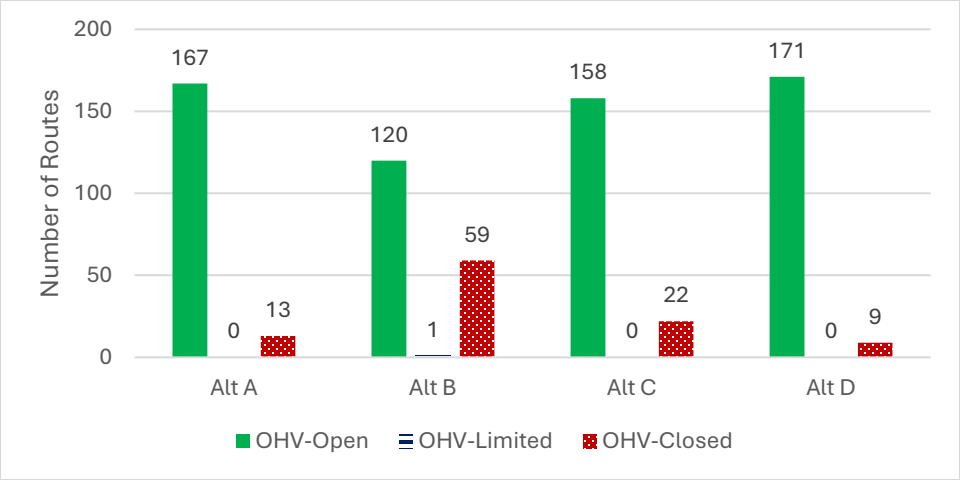



**Figure 42: Number of Evaluated Routes Providing Primary Access to Range Improvements**

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

Alternatives B-D do not propose any new construction of routes or other surface-disturbing activities. Each action alternative would impact rangeland and grazing operations to differing degrees based on the miles of route designated as closed or limited versus open for public OHV use. Opportunity for conflicts among permittees and public OHV users would vary across Alternatives B-D (see Figure 42); however, separation between peak seasons of use between the two user groups would reduce impacts. Additionally, BLM proposes to manage the selected network through the TMP Implementation Guide (Appendix E), which would clarify the route network and provide structured management and operation through activities such as signing, reclamation, and adaptive management protocols. These implementation actions would further reduce the overall impacts to rangeland and grazing operations.

This issue does not warrant further analysis. It is expected that closed routes would eventually revegetate and produce more forage. The increase in forage would not likely be enough to change an authorization to allow for more use. It would be improbable to analyze a figure that could not be meaningfully analyzed. Because of the potential improvements to forage not being meaningfully analyzed and the authorized range user still being allowed access to range improvements, it is not expected to impact the livestock grazing allotments. There are no past, present, or reasonably foreseeable future actions that would change this conclusion.

## B.6 AIB-6: Minerals

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

The geographic scope of analysis for minerals is the TMA because it includes all the mineral sites accessed by the evaluated routes. The temporal scope of analysis is 20 years (see Section 3.1.1).

Mineral resources are found throughout parts of the TMA. Some of the TMA's evaluated routes could provide access to mining activities, energy production, transportation of mineral resources,

and exploration. Mineral site development traffic may consist of haul trucks, semi-trucks, drill rigs, heavy equipment, or work crew vehicles. For more details on oil/gas and mineral development in the KFO in general, see pages 3-97 to 3-101 of the 2008 Kanab Proposed RMP/Final EIS (BLM 2008b).

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

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

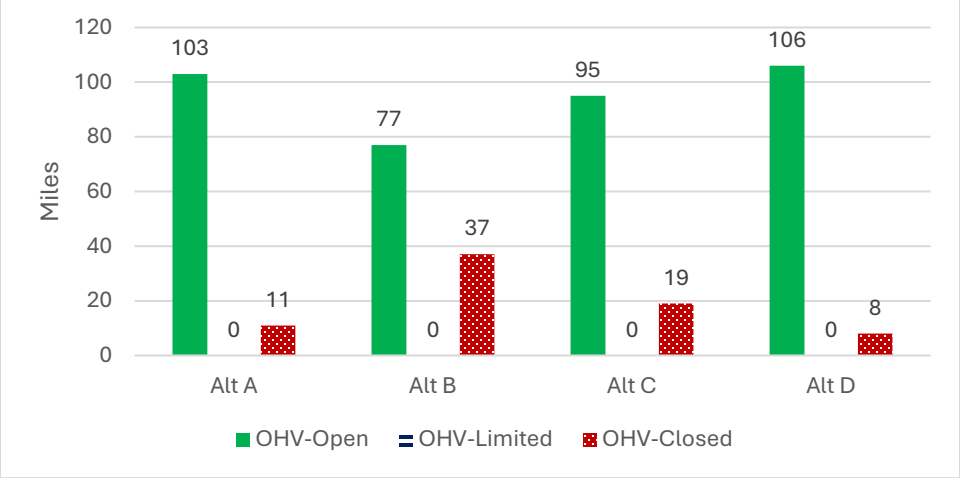



**Figure 43: Number of Evaluated Routes Providing Primary Access to Active Mining Operations**

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

In conclusion, route designation decisions would not preclude access for mineral lease or permit holders and other authorized users. None of the proposed alternatives would result in the loss or gain of authorized access to mineral development leases or sites. Even routes that are designated OHV-Closed would remain available for authorized use, as authorized. Route designation decisions could impact public access to mineral sites. However, maintenance and public safety regulatory requirements would reduce opportunities for conflicts with recreation users. There are

no other anticipated relationships with other resources. Therefore, no additional analysis is needed.

## B.7 AIB-7: National Parks and State Parks

How would the route designation alternatives affect National Parks and State Parks in or adjacent to the TMA?

The analysis area is the TMA plus Zion National Park and Coral Pink Sand Dunes State Park because those are the Parks that TMA route designations access. The temporal scope of analysis is 20 years.

While the TMA does not overlap Zion National Park or Coral Pink Sand Dunes State Park, the linear feature route inventory contains routes in proximity to or adjacent to them. This TMP will not designate any OHV routes within the Parks but does consider route designations that could facilitate OHV use near them.

Continued OHV use on routes accessing, proximate to, or connecting to the Parks is likely to create temporary auditory and visual impacts for short distances depending on local topography and weather conditions. The sights and sounds of motor vehicles may temporarily disturb Park visitors' experiences. Dispersed camping near the Parks may also occur from time to time, impacting the undeveloped and natural qualities. Other potential human impacts adjacent to the Parks can occur near travel routes from human waste, litter and trash dumping, hazardous fluid leaks, woodcutting, target shooting, vandalism, and wildfires. In remote, arid desert regions like the TMA, OHV routes also provide critical access for realizing the public purposes of the Parks. The travel network within the TMA provides public access routes to trailheads supporting uses located within the Parks.

With TMP implementation actions and partnership assistance, Kanab Field Office BLM will coordinate with the Parks to minimize impacts resulting from OHV use near the Parks through reclaiming, monitoring, education, signing, and enforcement.

## B.8 AIB-8: Native Vegetation

How would the route designation alternatives impact native vegetation communities?

Implementation of the proposed TMP would likely have no measurable impact on vegetation. The TMP does not authorize cross-country travel but instead authorizes travel on roads that already exist on the ground. Because the roads are already existing there should be no impact to vegetation as a result of implementation of the proposed action.

TMP implementation activities that may cause vegetation loss include installing new signs, road maintenance consistent with the character and class of the route, and route reclamation. TMP implementation activities that could remove, crush, or dust native vegetation include route maintenance (e.g., surface and ditch blading.), reclamation (e.g., raking), and sign placement (e.g., digging post holes). These effects would occur in very short time frames (estimated to be one to four days' worth of work, though it may be longer for longer routes). TMP implementation activities that could reduce native vegetation crushing and dusting include sign placement directing OHVs to routes that are less disruptive to native vegetation. These effects would occur over longer timeframes.

## B.9 AIB-9: Natural Soundscapes

How would the route designation alternatives impact natural soundscapes?

The analysis area is the TMA and the 3 miles surrounding the perimeter of the TMA because this is the distance over which sound from a noise source typically dissipates to background sound levels. The temporal scope of analysis is 20 years (see Section 3.1.1). The background sound level, sometimes referred to as the baseline sound level, is the sound level in a location without contributions from anthropogenic noise sources. The existing sound level, sometimes referred to as the ambient sound level, is the sound level of all sounds in a location, including non-natural noises. The background sound level and existing sound level are used to numerically characterize a soundscape. Elevated noise levels above background conditions can disrupt wildlife behavior and communication as well as diminish human experiences of the natural quiet. Both disruptions are important considerations when evaluating environmental effects of noise.

In rural areas, ambient sound levels are typically 30 to 40 A-weighted decibels (dBA) (EPA, 1974). Decibels (dB) are the units of measure used to represent sound pressure levels, and dBA is the unit of measure of sound pressure levels using the A-weighted scale which correlates to a human's subject reaction to noise. As a basis for comparison to the background and existing sound levels, the sound level of quiet indoor environments, such as libraries, typically range from 25 to 30 dBA, and the sound level of a running refrigerator is 40 to 50 dBA (Zárate-Espinosa, Poblet-Puig, Ortega, & López-Parra, 2020). Highway traffic noise typically ranges from 70 to 80 dBA at a distance of 50 feet from the highway (FTA 2018).

To reduce noise disruption and annoyance, the EPA recommends keeping outdoor noise levels at or below 55 dBA, and indoor or outdoor during nighttime hours at or below 45 dBA (EPA, 1974). The levels are not single event, or "peak" levels, but rather represent averages of acoustic energy over periods of time such as 8 hours or 24 hours. The 55 dBA is generally recognized as a level below which no public health or safety risks to the general population would be anticipated to occur.

OHVs generate between 75 and 97 dBA at a distance of 50 feet. Decibel output can vary widely between different types of OHVs depending on types of engines, size, and throttle position. For example, a small 2-stroke gasoline engine on an accelerating motorcycle can emit much higher levels of noise than a 4-stroke gasoline motorcycle or passenger car engine many times larger. UTVs or side-by-sides are often louder than much larger SUVs or trucks. Likewise, diesel trucks can often be much louder than similarly sized gasoline powered vehicles (California Department of Parks and Recreation, 2005). The Inverse Square Law indicates that noise will decrease by 6 dBA with every doubling of distance from the source, and this is often used to estimate noise impacts at different distances from a specific source. As such, if the noise level is 86 dBA (middle point of OHV noise levels) at 50 feet from a vehicle, then the noise level would be 80 dBA at 100 feet and 74 dBA at 200 feet. At approximately 1,750 feet (0.33 miles) from the OHV, sound levels will drop below the EPA activity interference and annoyance threshold of 55 dBA. Sound levels will drop to background sound levels (30-40 dBA) at distances of approximately 3 miles. However, the actual noise levels experienced by a receptor will depend not only on the distance from the noise source but also on the environmental conditions between the two locations. Typically, sound levels will be less than what is calculated using the Inverse Square Law because sound is muffled by vegetation and other noise sources, reflected or blocked

by topography and other barriers, and refracted away from the receptor by meteorological conditions (e.g. wind speed and directions, temperature, humidity).

Effects of noise can also be observed through how the noise affects the audibility of other sounds. Noise can substantially reduce the distance over which wildlife and visitors can hear natural sounds. The deviation from background sound levels caused by a new noise source can be quantified as a percentage reduction in listening area and alerting distance. For example, a 10 dBA increase above natural background levels results in a 90% reduction in listening area and a 70% reduction in alerting distance, meaning animals are much less able to detect important cues such as predator movements or calls from other members of their own species. These reductions in auditory space have been linked to documented impacts on wildlife: birds may experience masking of songs and calls, leading to reduced territory defense, mating success, and nest survival; raptors such as owls can have impaired hunting efficiency due to masking of prey sounds (USGS, 2024a); and mammals may show increased vigilance and avoidance of noisy areas, resulting in decreased habitat use and foraging efficiency (USGS, 2024b). Increases in noise may also result in neutral or even positive effects to some species, such as reduced predation risk from predators that hunt acoustically.

Table 19 shows the relationship between increased sound levels above background and reductions to listening area and alerting distance. These reductions in auditory space have been linked to documented impacts on wildlife: birds may experience masking of songs and calls, leading to reduced territory defense, mating success, and nest survival; raptors such as owls can have impaired hunting efficiency due to masking of prey sounds (USGS, 2024a); and mammals may show increased vigilance and avoidance of noisy areas, resulting in decreased habitat use and foraging efficiency (USGS, 2024b). Increases in noise may also result in neutral or even positive effects to some species, such as reduced predation risk from predators that hunt acoustically.

**Table 19: Reduction in Listening Area Due to Increase from Background Sound Levels**

| Increase from Background | 3 dBA | 6 dBA | 10 dBA | 20 dBA |
|---|---|---|---|---|
| Reduction in Listening Area | 50% | 75% | 90% | 99% |
| Reduction in Alerting Distance | 30% | 50% | 70% | 90% |

Source: (NPS, 2010)

Sound level increases in the TMA from vehicles are intermittent, typically occurring for a few minutes while vehicles pass through an area. Intermittent noise sources that last a few minutes do not substantially change the existing sound levels that are measured over 8-hour or 24-hour period. Existing sound levels in rural areas, including the noise sources from the relevant past, present, and reasonably foreseeable actions can be ~5-7 dBA higher than background sound levels (BioResource Consultants, Inc., 2021). Vehicles currently traveling on routes in the TMA contribute to the existing sound levels. As a result, even with implementation of this TMP, the existing sound environment already includes human-induced noise sources from vehicles.

OHV activity, and therefore noise levels, on the open routes within the TMA are expected to increase over time with anticipated increases in visitation. However, changes in visitation to the

recreation area are unrelated to the action being considered because all alternatives involve designating existing routes for OHV use. While overall visitation to the region has increased in recent decades (United States Census Bureau, 2023), none of the alternatives would affect regional draw or recreation demand. Average noise levels in the TMA would be anticipated to remain the same as current levels under any route designation alternative. It is possible that route closures could concentrate traffic and increase noise levels near routes that remain open, with a proportionate decrease in noise levels near routes designated as closed.

Overall, this action is not anticipated to change the background or existing sound levels in the analysis area. Individual vehicles can produce temporary and localized (1/3 mile to 3 miles) increases above background sound levels due to passing vehicles. However, noise from vehicles traveling in the TMA is already part of the existing soundscape. At the time of this analysis, there is no available data to quantify the magnitude of an increase or decrease in noise related to any of the alternatives on the existing soundscape, and the BLM is not required to monitor traffic noise levels within the TMA. Additionally, no documented complaints about disruptions from OHV noise in the TMA have been received by the BLM at the time of this analysis.

### B.10 AIB-10: Paleontological Resources

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

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

The Potential Fossil Yield Classification (PFYC) system is used to assess resource effects and mitigation needs by providing estimates of the potential for paleontological resources within a geologic unit (BLM 2022). The PFYC system is based on numeric classes of 1 very low, to 5 very high, and unknown (U). A geologic unit identified as PFYC 1 is not likely to contain recognizable paleontological resources, whereas a geological unit identified as a PFYC 5 is a highly fossiliferous geologic unit that consistently and predictably produces significant paleontological resources. A class U assignment indicates that there is not enough information available for a formal class assignment. Until additional information is available and a provisional assignment is made, geologic units that have an unknown potential have medium to high management concerns. The geologic units on BLM-administered (Federal) lands within the TMA range in PFYC from 1-5 or U with the majority of the route mileage being in PFYC 2 and 3 (see Table 20).

**Table 20: Acreage within the TMA by PFYC**

| PFYC | BLM Acres | Miles of Evaluated Routes |
|---|---|---|
| **1** | - | - |
| **2** | 121,589 | 331 |
| **3** | 45,424 | 118 |
| **4** | 1,595 | 0.3 |
| **5** | 13,858 | 43 |

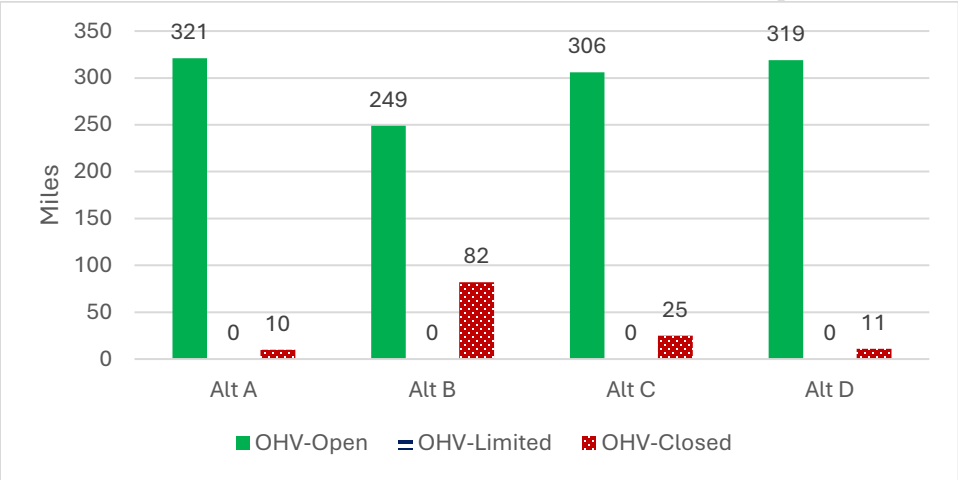



**Figure 44: Miles of Evaluated Routes in PFYC 2 Areas**

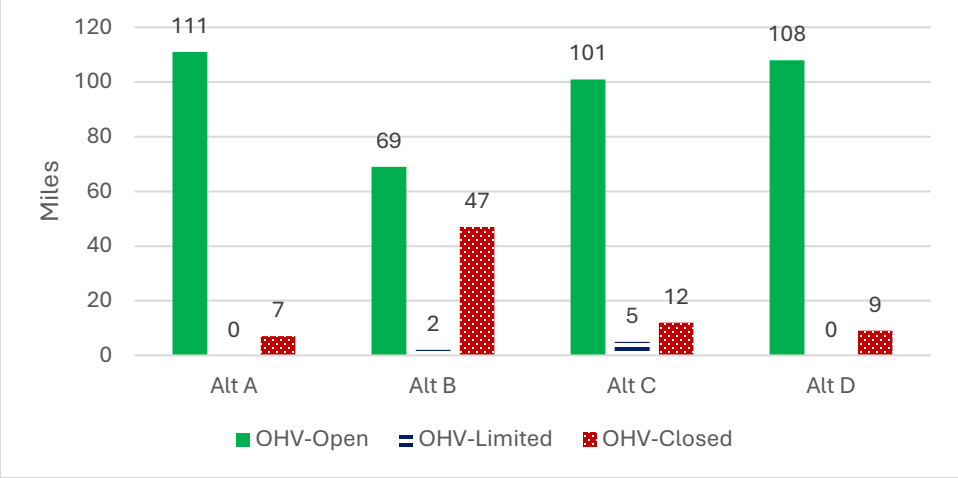



**Figure 45: Miles of Evaluated Routes in PFYC 3 Areas**

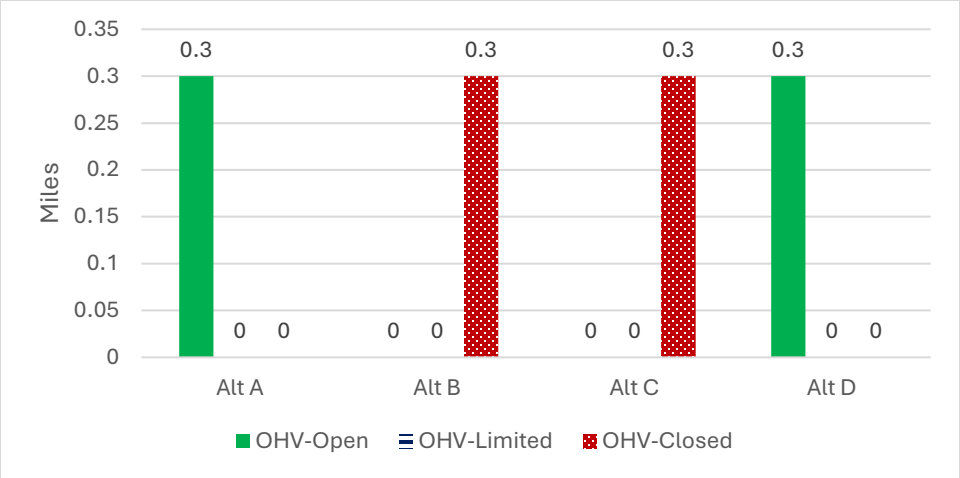



**Figure 46: Miles of Evaluated Routes in PFYC 4 Areas**

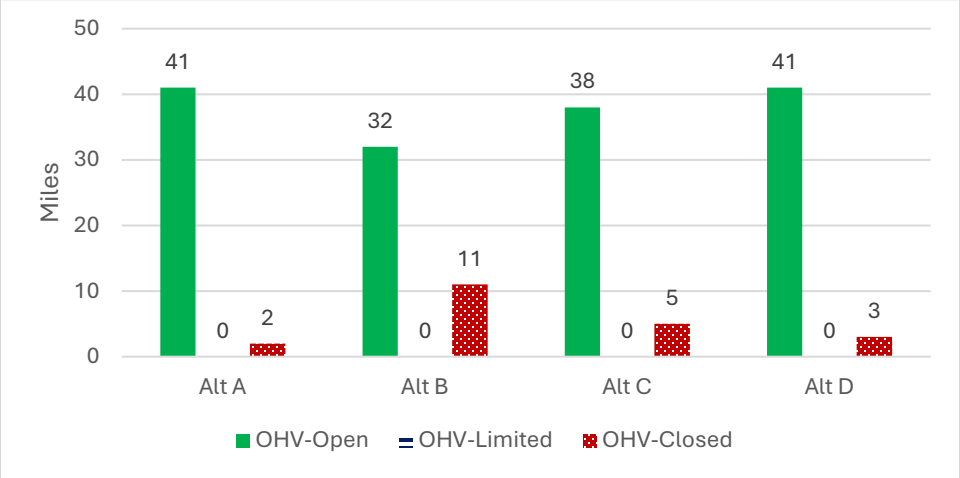



**Figure 47: Miles of Evaluated Routes in PFYC 5 Areas**

Long-term OHV use and maintenance of the travel network within the TMA could affect paleontological resources including incidental use such as passing, parking, and staging, and associated maintenance (see Appendix E). These activities may result in crushing or other damage to exposed or shallowly buried paleontological resources on or near the routes. Since these actions could increase rates of erosion (see Section 3.6), the erosion may also expose buried paleontological resources or cause degradation of already exposed paleontological resources. Some routes would be closed under all route designation action alternatives to protect known vulnerable paleontological resources.

OHV access to areas with known paleontological resources or high potential to contain them increases opportunities to view paleontological resources in the field, as well as the authorized removal of paleontological resources by the public through casual collection and paleontologists through permitted survey and surface collection. Documentation of new paleontological localities and individual fossils benefits our understanding of past life and environments. Fossils collected and curated into a public, federally approved repository provide long term educational, research, and museum experiences for the public. However, access also increases the potential for vandalism and unauthorized removal of paleontological resources. Impact-driving elements

and effect types would be anticipated to be the same for all alternatives, but the alternatives would vary in intensity of potential effects.

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

### B.11 AIB-11: Public Safety and Emergency Services

How would the route designation alternatives affect public safety and emergency services within and adjacent to the TMA?

The analysis area for public safety and emergency services is the TMA for 20 years because that is the area and timeframe influenced by the route designation alternatives. Emergency vehicles are excluded from the 43 CFR § 8340.0-5 definition of OHVs so emergency service access within the analysis area would not be impacted by the final TMP or vary across alternatives.

OHV use and the attendant dangers to human health and safety from OHV operation would only occur on any routes designated as OHV-Open or OHV-Limited under each alternative (see maps in Appendix C). According to the United States Consumer Product Safety Commission the dangers to public health and safety from OHV[14] use include vehicle collisions, overturns, and occupant ejection. Collisions can occur with other vehicles, stationary objects, or living beings and can occur simultaneously with an overturn (Topping 2021). Collisions and overturns are often preceding events that lead to ejection, the danger most frequently associated with fatality (Topping 2021).

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

The latest Consumer Product Safety Commission report showed 2,156 OHV fatalities nationwide from 2016-2018 (Topping 2021). Less than one percent of the reported fatalities occurred in Utah (Topping 2021), though the number of fatalities that occurred in the TMA is unknown. While recreation use is expected to increase with population growth, the primary recreation areas

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

are not expected to change across alternatives. Therefore, effects to public health and safety and emergency access are not analyzed in detail.

## B.12 AIB 12: Quality of Life

How would potential development of the leases affect the quality of life of the American people residing in the planning area?

BLM IM 2024-040 directs the BLM to follow the principles and practices in the Desk Guide for Socioeconomic Aspects of NEPA and Planning (BLM 2024a). The Guide addresses nine socioeconomic values, all of which can be considered broadly as addressing quality of life issues. The recently updated DOI Handbook of NEPA Implementing Procedures (DOI 2026) sets forth several considerations the Responsible Official may weigh when determining the "significance" of a proposed action.

One of the considerations includes the effects on the quality of life of the American people. The Handbook recommends considering six items which may affect quality of life. The discussion which follows applies to the socioeconomic analysis area, as this area contains the populations most likely to be impacted by the proposed action and alternatives. The BLM believes that a decision which improves one aspect of quality of life for one individual or group may have a negative impact on another individual or group with different values or concerns. The BLM also believes that the described impacts would likely occur at some level to larger geographies, including state, regional, and national. Theses impacts could vary in type, direction (favorable or unfavorable), and intensity depending on the values and concerns of individuals and groups that may be affected differently.

Quality of life factors considered:

Access to Products: The proposed travel plan could enhance opportunities to consume, use, possess, or purchase products extracted or produced on BLM lands, including access to OHV recreation. The proposed action also could enhance access to other BLM- managed resources, including grazing and minerals. See AIBs 4 (Lands and Access), 5 (Livestock Grazing and Rangeland Health) and 6 (Minerals) for further discussion.

Visitor experience: For the recreation user segment which values the opportunity to drive on both primitive and maintained roads, either for the driving experience itself or for increased opportunities to access other recreation resources, these visitors' experiences could be enhanced by a mapped, signed and developed road network. Conversely, the proposed plan may be perceived as having a negative effect on quality-of-life considerations for people who value undeveloped landscapes, opportunities for isolation, and activities such as wildlife viewing and other forms of recreation which they may see as being negatively impacted by any road designation. See, 3.5 (Recreation), 3.7 (Special Designation Areas: Wilderness Study Areas), 3.9 (Visual Resources), Sections 3.11 (Wilderness Characteristics) and AIB-2 (Dark Night Skies) for a more detailed analysis of potential gains and losses to the visitor experience. See also the references to wildlife under Passive Use of Ecosystems, below.

Public Services: The proposed travel plan could lead to improvements in public services, especially for emergencies such as search and rescue operations. See AIB-11 (Public Safety and Emergency Services) for a more detailed discussion.

Way of Life and Culture for Native Americans: See Sections 3.3 (Cultural Resources) and 4.2.2 (Tribal Consultation) for discussion of this issue.

Passive Use of Ecosystems: Passive use of ecosystems is a change in resources which people value for their simple existence (cultural, geological, paleontological, biological, aquatic, or aesthetic) or represent a long-term change in resources and/or ecosystem resiliency, as in changes to climate, water, or fire behavior. Development of all or some of the proposed lease parcels could negatively impact stakeholders who place high stewardship values on functioning ecosystems. The current document discusses many of the resources associated with ecosystems and ecosystem services. As discussed in Section 2.5, BLM proposed routes as open or limited where doing so would result in minimal resource damage or redirect travel to routes in less sensitive areas. For more discussion, see Section 3.6 (Soils), Sections 3.10 (Water Resources), 3.12 (Wildlife: General Wildlife), 3.13 (Wildlife: Special Status Species), and the following AIBs: AIB-8 (Native Vegetation), AIB-14 (Weeds) and AIB-16 (Wildlife: Migratory Birds).

## B.13 AIB-13: Socioeconomics

What are the socioeconomic impacts of the route designation alternatives?

The analysis area includes Kane County, Utah. This is the area most affected by recreation in the TMA. The temporal scope of analysis is 20 years (see Section 3.1.1). Any impacts to the socioeconomics of the analysis area would come from changes in recreation visitation to the TMA and resultant changes in expenditures by visitors to the TMA. As discussed in the recreation analysis in Section 3.3.4, KFO expects little if any change in recreation visitation from the various alternatives. Nonetheless, it is useful to describe the current contribution of visitation to the TMA to the economy of the analysis area.

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

- The socioeconomics analysis area consists of Kane County, Utah, as most spending by visitors to the TMA is likely to occur here.
- All models use 2022 IMPLAN data.
- Segment data (e.g., local vs nonlocal, day use vs overnight, camping vs lodging, etc.) provided by RFO recreation staff.
- Spending profiles for each segment based on USFS National Visitation Use Monitoring (NVUM) data for Dixie National Forest (USFS 2024), with hotel rates adjusted for 2022 county-specific data (University of Utah 2024).
- Total Trail Canyon TMA visitation data for FY23 from the BLM Recreation Management Information System (RMIS).
- KFO recreation staff estimate visitation to the TMA at 445,796 visitor days, which is not expected to vary by alternative.
- All output in 2022 dollars.
- IMPLAN estimates are strictly linear. For example, increasing the estimate of recreation visitation by ten per cent will increase all outputs by the same ten per cent (see Table 22, below).

Table 22 shows the estimated economic contribution of recreation visitation to the TMA.

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

**Table 21: Economic Impact of Recreation Visitation to TMA, FY23 – All Alternatives $2022)[15]**

| | Employment | Labor Income | Value Added | Output |
|---|---|---|---|---|
| Direct Effect | 295.0 | 8,065,032 | 13,179,156 | 23,085,517 |
| Indirect Effect | 28.0 | 834,527 | 1,773,846 | 4,657,786 |
| Induced Effect | 18.1 | 585,486 | 1,595,234 | 2,891,650 |
| Total Effect | 341.0 | 9,485,045 | 16,548,236 | 30,634,954 |

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

**Table 22: Economic Impact of Recreation Visitation to TMA Per 10,000 Visitor Days $2022)**

| | Employment | Labor Income | Value Added | Output |
|---|---|---|---|---|
| Direct Effect | 6.6 | 108,913 | 295,632 | 517,849 |
| Indirect Effect | 0.6 | 18,720 | 39,791 | 104,482 |
| Induced Effect | 04 | 13,134 | 35,784 | 64865 |
| Total Effect | 7.6 | $212,766 | $371206 | $687,197 |

Non-Market Values

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

[15] Visitor Days: 445,796 (KFO recreation staff estimate)

not expressed in monetary terms. Despite the difficulties associated with measurement of these values, it is well-accepted that the natural, recreational, and cultural resources of an area, and the open space the area may provide, have value, even if difficult to quantify in dollars.

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

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

### B.14 AIB-14: Weeds

How would the route designation alternatives impact the introduction and spread of noxious and invasive weeds?

There are known populations of invasive species/noxious weeds within the TMA. The alternatives would include no new surface disturbance because the routes in question already exist. Therefore, the opportunity for invasive species/noxious weeds to establish would be minor. Furthermore, the existing routes in the project area, regardless of designation, would likely be available to access weed infestations for treatment purposes. Kane County is responsible for weed control on all county-maintained or county-permitted ROWs. Treatments of noxious weeds will continue within the project area along roads and trails and access to these areas are necessary to prevent the spread of noxious weeds.

Opening routes that were previously undesignated or closed would create the greatest negative impact, while closing routes would create the greatest beneficial impact. Leaving routes as they are currently would have no impact. Surface-disturbing activities have the potential to introduce or spread invasive species and noxious weeds. TMP implementation activities that could introduce or spread weeds include route maintenance (e.g., surface and ditch blading.), reclamation (e.g., raking), and sign placement (e.g., digging post holes). These effects would occur in very short time frames (estimated to be one to four days' worth of work, though it may be longer for longer routes). TMP implementation activities that could reduce weed spread and introduction include sign placement directing OHVs away from weeds. These effects would occur over longer timeframes.

All classifications of roads are corridors where invasive species or noxious weeds have the potential to be introduced or spread throughout all connecting routes. Because of this, the magnitude of potential impacts on the introduction or spread of invasive species and noxious weeds within the TMA can be assessed by comparing miles of routes proposed for OHV-Open or OHV-Limited designation to miles of routes proposed as OHV-Closed by alternative (see Figure 1 in Section 2.7). To compare the location of potential impacts, see Map 2- Map 25 in Appendix C. Overall, Alternative A would result in a continuation of potential impacts from

OHV use; Alternatives B and C would have lower potential for OHV-related noxious weed and invasive species spread, and Alternative D would have higher potential for such impacts.

## B.15 AIB-15: Wilderness

*How would the route designation alternatives affect designated Wilderness that lie adjacent to the TMA within Zion National Park, the St. George Field Office, and Arizona?*

The TMA is adjacent to the Canaan Mountain Wilderness and Zion Wilderness Areas in Washington County, Utah, designated by Congress under the Omnibus Public Land Management Act of 2009 (H.R. 146). The TMA is also adjacent to the Cottonwood Point Wilderness Area in Mohave County, Arizona, designated by Congress under the Arizona Wilderness Act of 1984 (H.R. 4707). These three Wilderness Areas total just under 176,000 acres, and they are the analysis area. The temporal scope of analysis is 20 years.

Under the Omnibus Public Land Management Act of 2009 and the Arizona Wilderness Act of 1984, Congress designated these wilderness areas for inclusion in the National Wilderness Preservation System and directed that the BLM and National Park Service (NPS) manage them in accordance with the Wilderness Act of 1964. Motorized and mechanized travel is prohibited under Section 4(c) of the Wilderness Act.

While the TMA does not contain designated Wilderness, the linear feature route inventory contains routes in proximity to, or adjacent to the above-mentioned Wilderness Areas in Washington and Mohave Counties. This TMP will not designate any OHV routes within Wilderness but does consider route designations that could facilitate OHV use near Wilderness boundaries. The Dingell Act of 2019 (S. 47) states, §1232(e)(2): “The fact that non-wilderness activities or uses can be seen or heard from areas within a wilderness area shall not preclude the conduct of those activities or uses outside the boundary of the wilderness area.” Congress also stated at § 1232(e)(1) that it “does not intend for the designation of the wilderness areas to create protective perimeters or buffer zones.”

Continued OHV use on routes accessing, proximate to, or connecting to Wilderness Areas is likely to create localized and transient effects to wilderness character for short distances depending on local topography and weather conditions. Temporary audible and visual effects to wilderness character can be expected from the passage of OHVs on designated routes. The sights and sounds of motor vehicles adjacent to Wilderness may temporarily disturb visitors’ experiences of outstanding opportunities for solitude. However, in most circumstances, visitors can venture further into the Wilderness out of visual and audible range of vehicle routes.

OHV use near a wilderness boundary may also introduce noxious weeds, affecting the natural quality of Wilderness. Unauthorized vehicle incursions in Wilderness may also occur from time to time, affecting solitude and undeveloped and natural qualities. Other potential adverse effects in Wilderness can occur near travel routes from human waste, litter and trash dumping, woodcutting, target shooting, vandalism, and wildfires. These affect naturalness and supplemental values such as cultural sites, scenery, wildlife, geology, paleontology, or scientific values.

In remote, arid desert regions like the TMA, OHV routes adjacent to wilderness areas also provide critical access for realizing the public purposes of Wilderness, including recreational,

scenic, scientific, education, conservation, and historic uses. The travel network within the TMA provides public access routes to wilderness trailheads, range improvements, and scenic overlooks supporting camping, hiking, backpacking, canyoneering, hunting, horse-packing, and other non-motorized activities. The same can be said for authorized livestock grazing or scientific research within Wilderness.

With TMP implementation actions and partnership assistance, Kanab Field Office BLM will coordinate and assist Arizona Strip Field Office BLM, St. George Field Office BLM, and Zion NPS in mitigating adverse effects through reclamation, monitoring, signing, enforcement, and education to the greatest extent practicable. Reclamation of unauthorized OHV use in Wilderness includes minimum-tool practices such as trash removal, erosion control, mulching, revegetation, signing, and weed eradication.

Management actions within Wilderness require the preparation of minimum requirements analysis and possibly additional NEPA, as necessary. It is important to note that reclamation efforts are not likely to result in short-term improvements to naturalness due to the arid environment of the TMA. Soil compaction, low precipitation, and slow vegetation growth make restoration challenging. In addition, open terrain often makes enforcement difficult.

## B.16 AIB-16: Wildlife: Migratory Birds

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

The analysis area for migratory birds is the TMA because migratory bird habitat for breeding, nesting, migrating, and wintering can be found throughout the TMA. The temporal scope of analysis is 20 years (see 3.1.1) Various migratory birds (including raptors, waterfowl, songbirds, neotropical migrants, and special status birds) utilize habitat throughout the TMA. In the context of this EA, a "migratory bird" is one protected under the Migratory Bird Treaty Act (MBTA). In Utah, especially in the more arid areas, lowland riparian habitat is especially important for migratory bird species. As part of addressing the MBTA, the USFWS has developed listings of Birds of Conservation Concern (BCC), which are high conservation priority MBTA species that are not already protected by the ESA. Based on the USFWS's Information for Planning and Consultation (IPaC) system, migratory birds in the TMA include those listed in Table 23.

**Table 23: Migratory Birds in the TMA**

| Common Name | Scientific Name | Level of Concern[16] | Breeding Season |
|---|---|---|---|
| Bald Eagle | *Haliaeetus leucocephalus* | Non-BCC Vulnerable | Breeds Dec 1 to Aug 31 |
| Black Rosy-finch | *Leucosticte atrata* | BCC Rangewide (CON) | Breeds Jun 15 to Aug 31 |
| Black-chinned Sparrow | *Spizella atrogularis* | BCC Rangewide (CON) | Breeds Apr 15 to Jul 31 |
| Broad-tailed Hummingbird | *Selasphorus platycercus* | BCC Rangewide (CON) | Breeds May 25 to Aug 21 |
| California Gull | *Larus californicus* | BCC Rangewide (CON) | Breeds Mar 1 to Jul 31 |

16 Non-BCC Vulnerable: This is not a BCC in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
BCC Rangewide (CON): This is a BCC throughout its range in the continental USA and Alaska.
BCC – BCR: This is a BCC only in particular Bird Conservation Regions in the continental USA.

| Common Name | Scientific Name | Level of Concern16 | Breeding Season |
|---|---|---|---|
| Cassin's Finch | *Haemorhous cassinii* | BCC Rangewide (CON) | Breeds May 15 to Jul 15 |
| Clark's Grebe | *Aechmophorus clarkii* | BCC Rangewide (CON) | Breeds Jun 1 to Aug 31 |
| Clark's Nutcracker | *Nucifraga columbiana* | BCC - BCR | Breeds Jan 15 to Jul 15 |
| Evening Grosbeak | *Coccothraustes vespertinus* | BCC Rangewide (CON) | Breeds May 15 to Aug 10 |
| Flammulated Owl | *Psiloscops flammeolus* | BCC Rangewide (CON) | Breeds May 10 to Aug 15 |
| Golden Eagle | *Aquila chrysaetos* | Non-BCC Vulnerable | Breeds Dec 1 to Aug 31 |
| Grace's Warbler | *Setophaga graciae* | BCC - BCR | Breeds May 20 to Jul 20 |
| Lesser Yellowlegs | *Tringa flavipes* | BCC Rangewide (CON) | Breeds elsewhere |
| Lewis's Woodpecker | *Melanerpes lewis* | BCC Rangewide (CON) | Breeds Apr 20 to Sep 30 |
| Long-eared Owl | *Asio otus* | BCC Rangewide (CON) | Breeds Mar 1 to Jul 15 |
| Olive-sided Flycatcher | *Contopus cooperi* | BCC Rangewide (CON) | Breeds May 20 to Aug 31 |
| Pinyon Jay | *Gymnorhinus cyanocephalus* | BCC Rangewide (CON) | Breeds Feb 15 to Jul 15 |
| Virginia's Warbler | *Leiothlypis virginiae* | BCC Rangewide (CON) | Breeds May 1 to Jul 31 |
| Western Grebe | *Aechmophorus occidentalis* | BCC Rangewide (CON) | Breeds Jun 1 to Aug 31 |

For more detailed information on migratory birds and their habitats, see the "Fish and Wildlife" section of the 2008 Kanab Proposed RMP/Final EIS (BLM 2008b, pages 3-56 to 3-59), and NatureServe Explorer (NSE 2024).

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

The nature of the impacts of Alternatives A through D are the same as previously described. See Figure 1 in Section 2.7, which shows the difference in the magnitude of the impacts between the alternative; note that the entire TMA is considered potential migratory bird habitat. Impacts to riparian areas, which are particularly important for migratory birds, are analyzed in Section 3.10.

The trends and activities that occur within the TMA accumulate human activity-related effects to migratory birds and raptors including disrupted or displaced breeding; changes in nesting behavior that result in reduced reproductive success; spatial and temporal changes in foraging activities that result in decreased fitness; altered species richness and community composition; and alteration to nesting, burrowing, brooding, foraging habitat, and mortality.

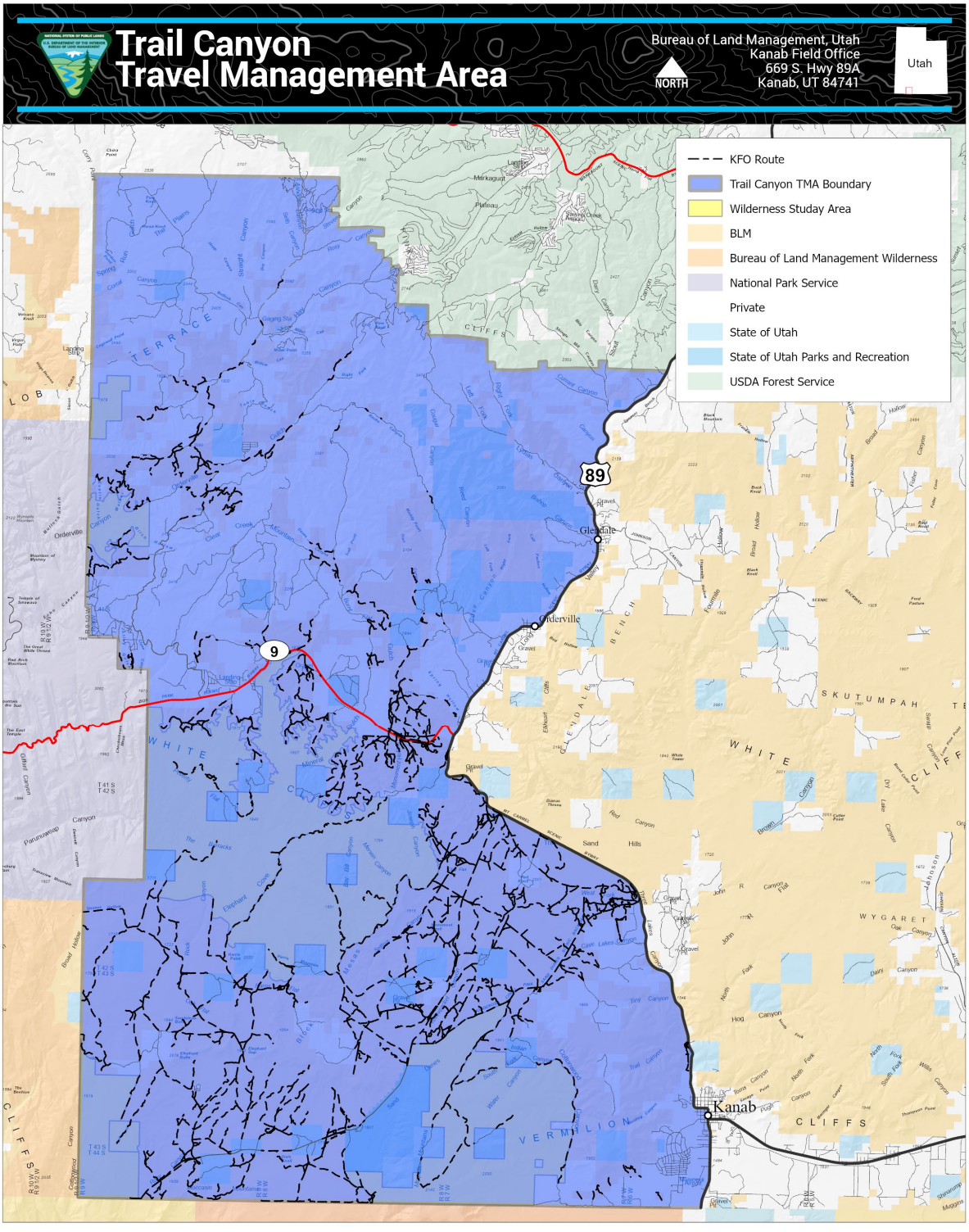
Migratory birds and raptors are not analyzed further because only routes which physically exist on the ground (open or closed) were evaluated for this plan; because all evaluated routes are in areas with established BMPs for migratory birds in place; because the alternatives would not redistribute recreation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

**Table 24: Resources for Which There Are No Associated Issues**

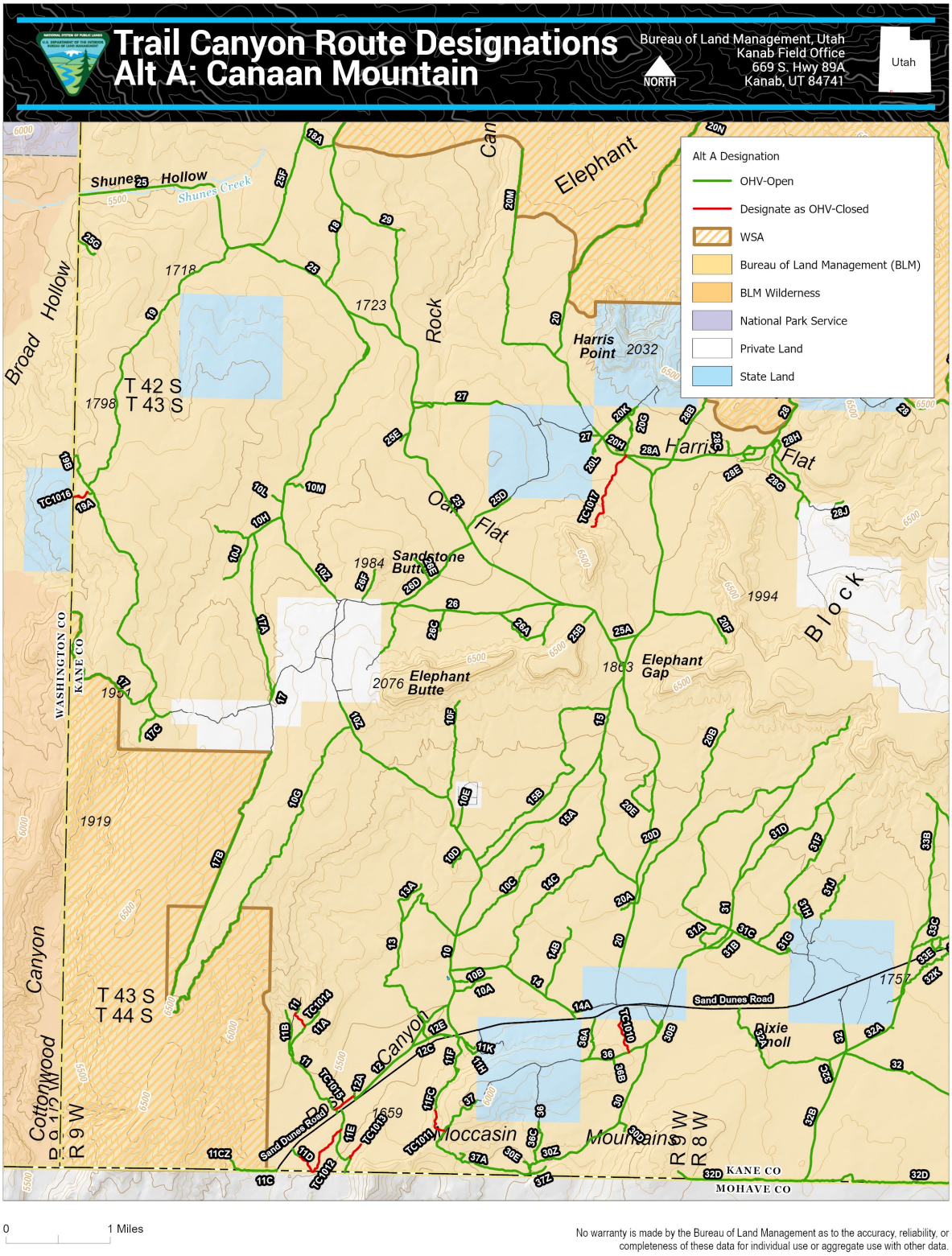
| Resource | Rationale |
|---|---|
| Farmlands (Prime or Unique) | Farmlands are not present in the project area. |
| Fish – Designated Species by BLM or U.S. Fish and Wildlife Service (USFWS) | No designated special status fish species are present in the TMA. |
| National Historic and Scenic Trails | There are no Congressionally designated National Historic and Scenic Trails within the TMA boundaries. The Old Spanish National Historic Trail is approximately 10 miles south in Arizona and is topographically screened by the Moccasin Mountains. |
| National Monuments/National Conservation Areas | There are no National Monuments or National Conservation Areas present within the TMA. The Grand Staircase-Escalante National Monument is over 9 miles to the east, the Baaj Nwaavjo I'tah Kukveni – Ancestral Footprints of the Grand Canyon NM is over 5 miles to the southeast, and the Red Cliffs NCA is over 20 miles west of the TMA. |
| Wastes (hazardous or solid) | The planning for travel management would not produce hazardous or solid waste. If hazardous or solid waste is discovered as part of this effort it will be disposed of according to BLM policy and procedure. |
| Wild Horses and Burros | There are no wild horses or burros in the project area. |
| Woodlands/Forestry | The proposed action may result in the closing of routes that may be used in the collection of woodland and forestry resources, but the closure of any existing route would not prevent the use, because the proposed action would not close any area to forest and woodland product harvest. |

# C. Appendix C: Maps

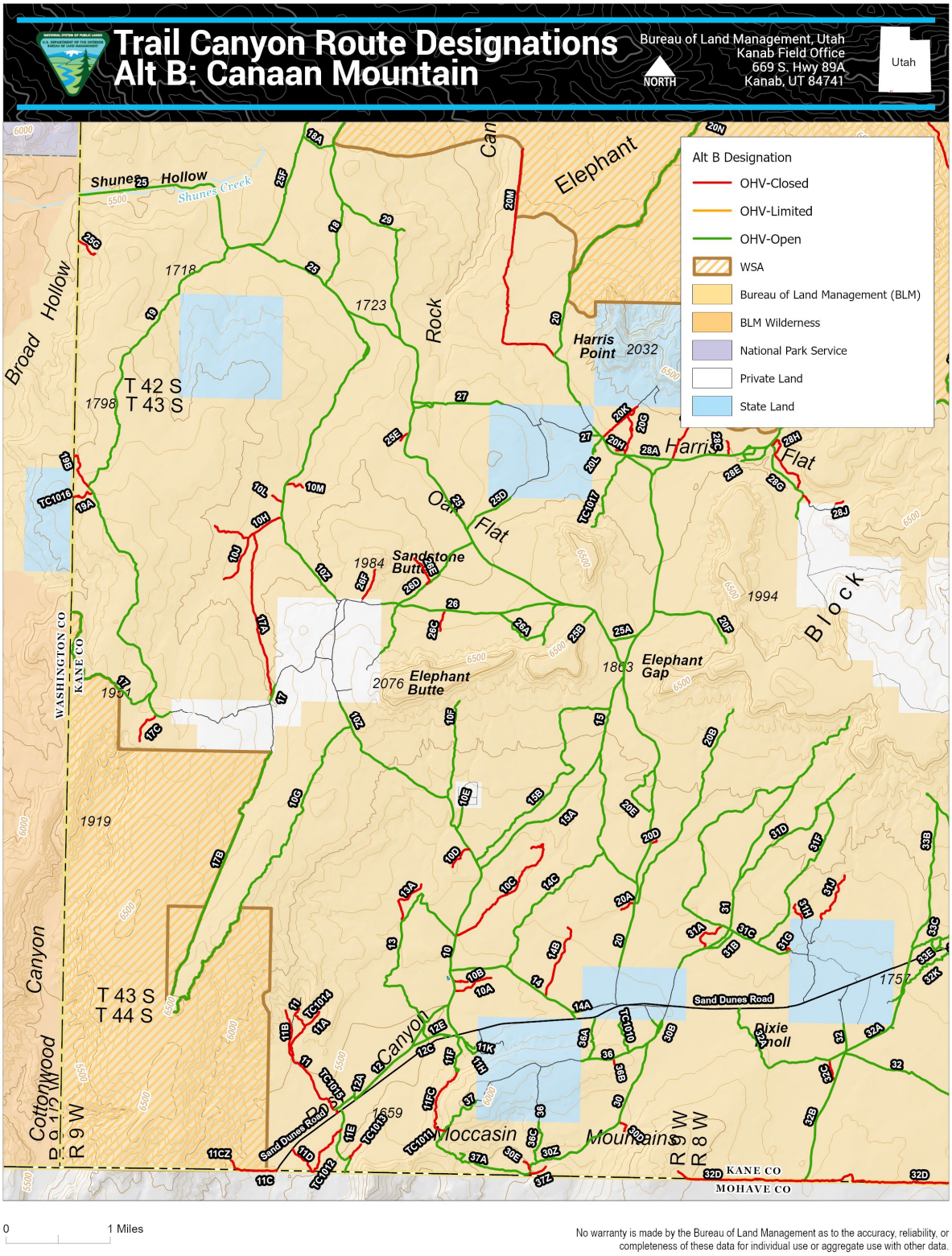
## C.1 Map 1: Trail Canyon TMA



## C.2 Map 2: Alternative A, Canaan Mountain Area



## C.3 Map 3: Alternative B, Canaan Mountain Area

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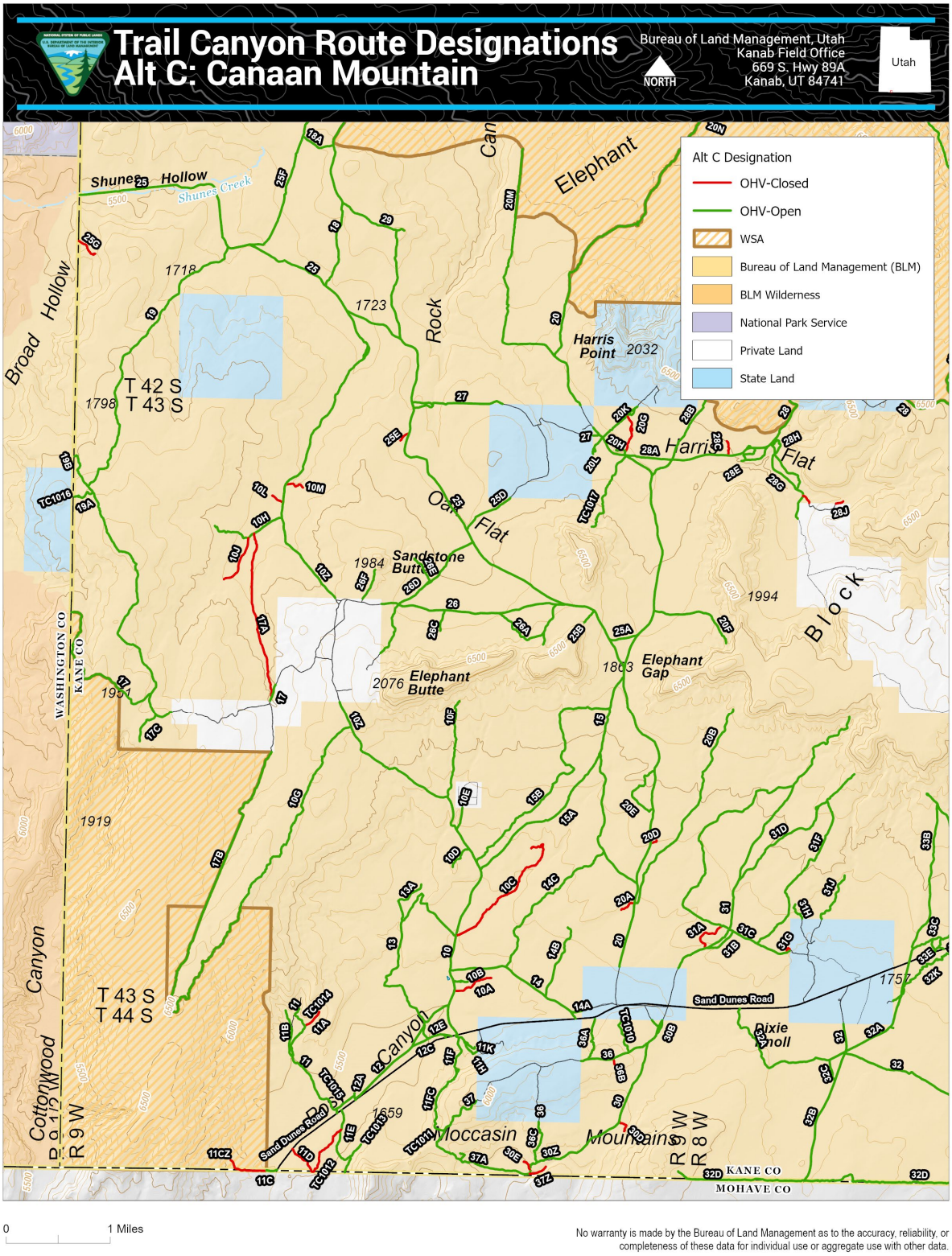
## C.4 Map 4: Alternative C, Canaan Mountain Area

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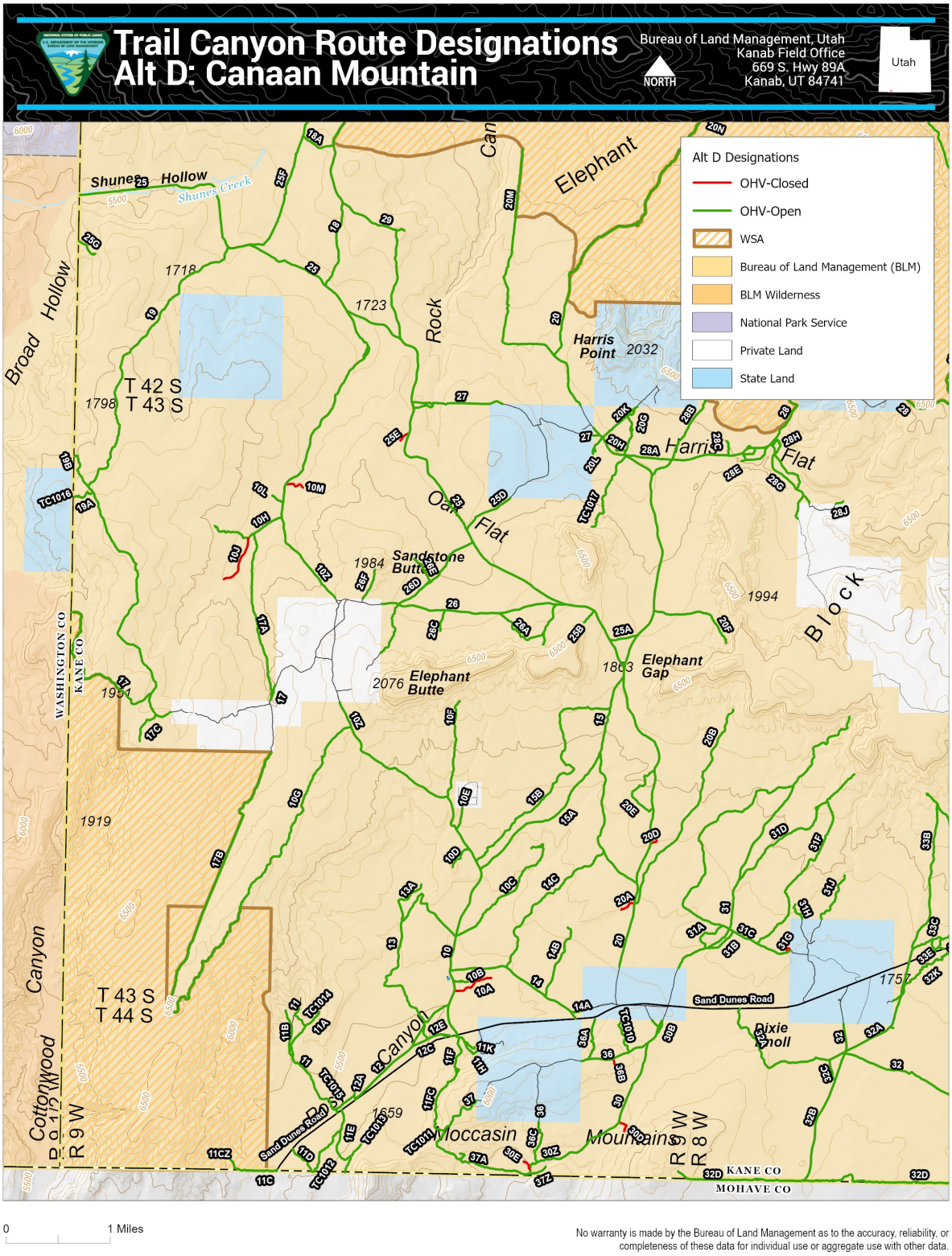
## C.5 Map 5: Alternative D, Canaan Mountain Area

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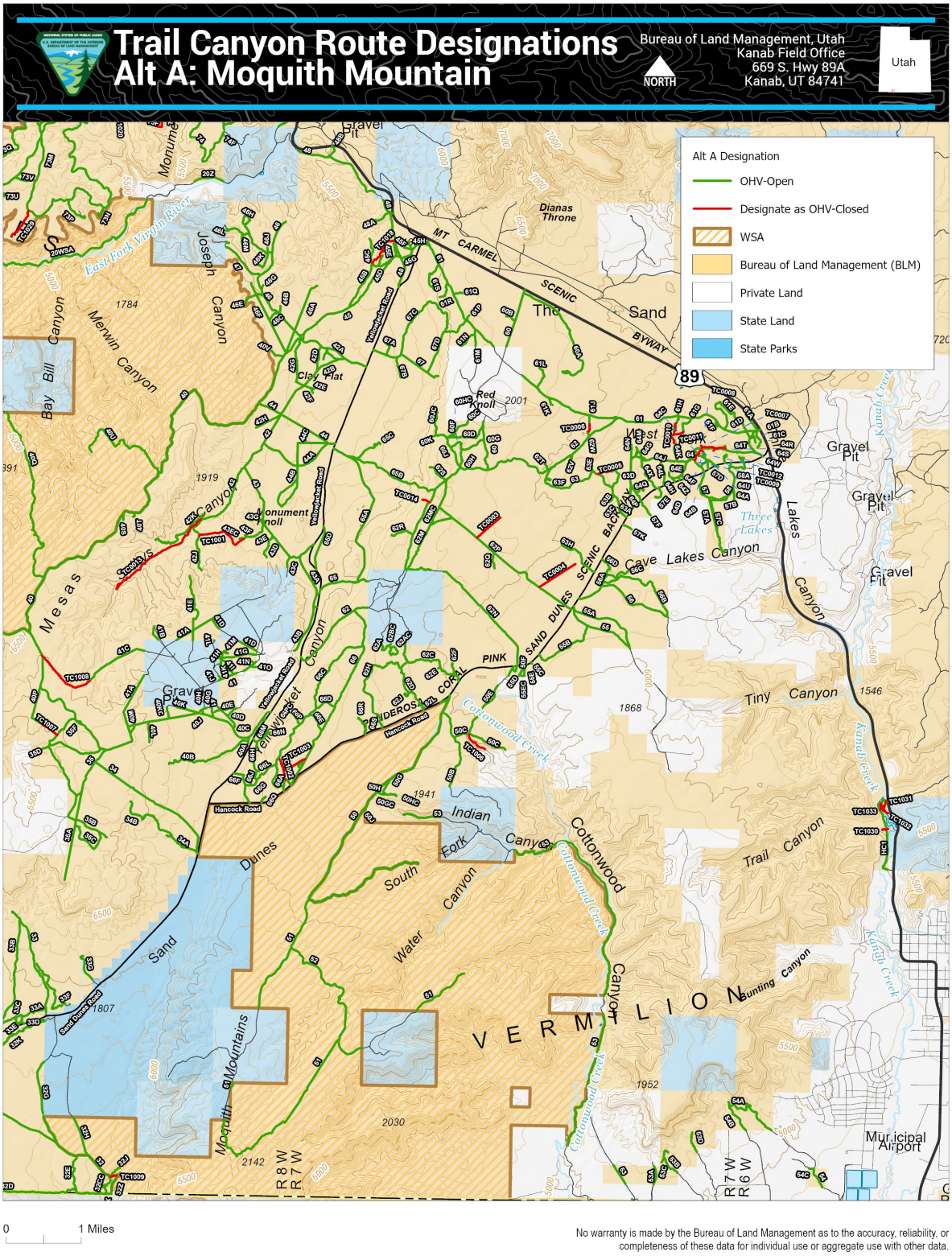
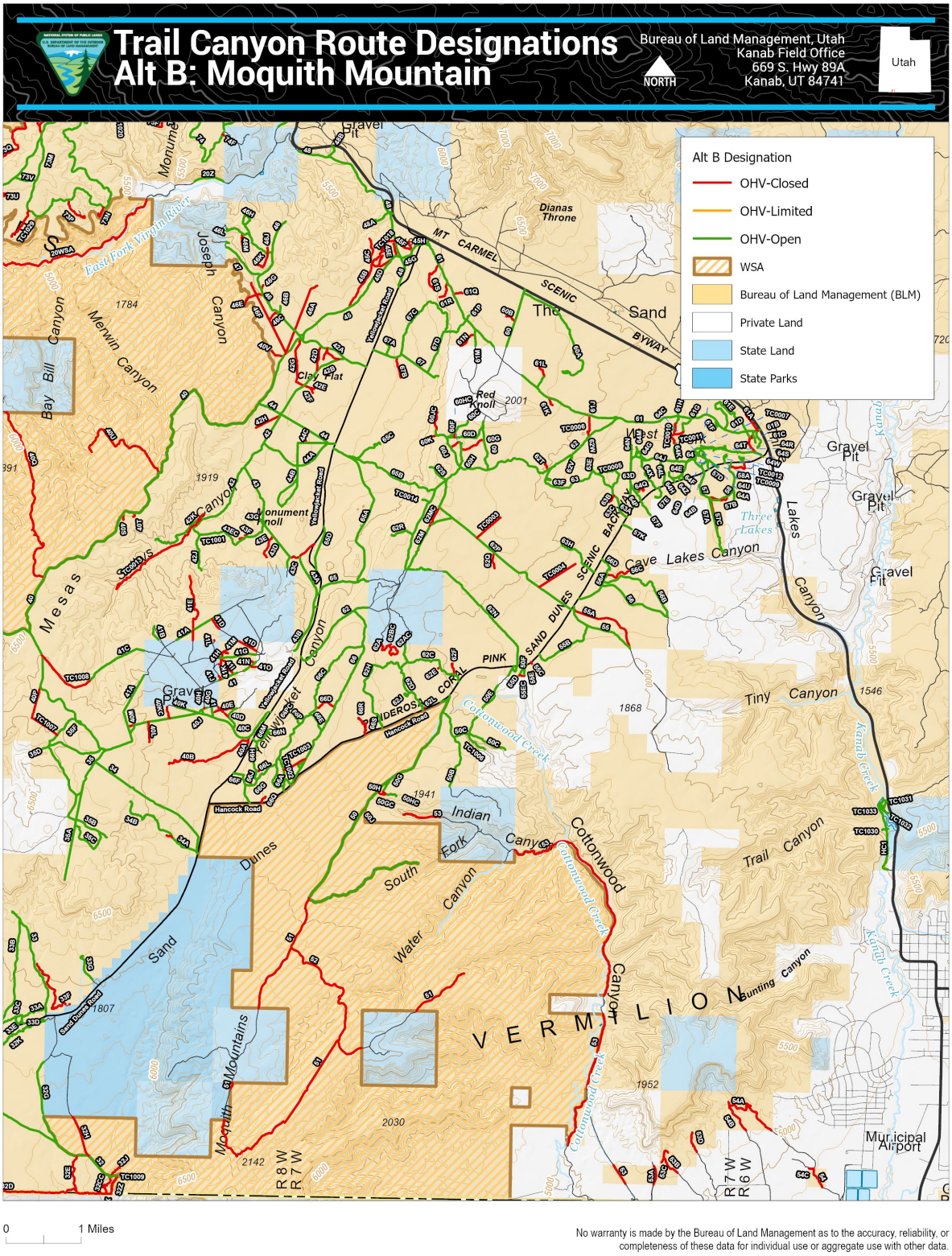
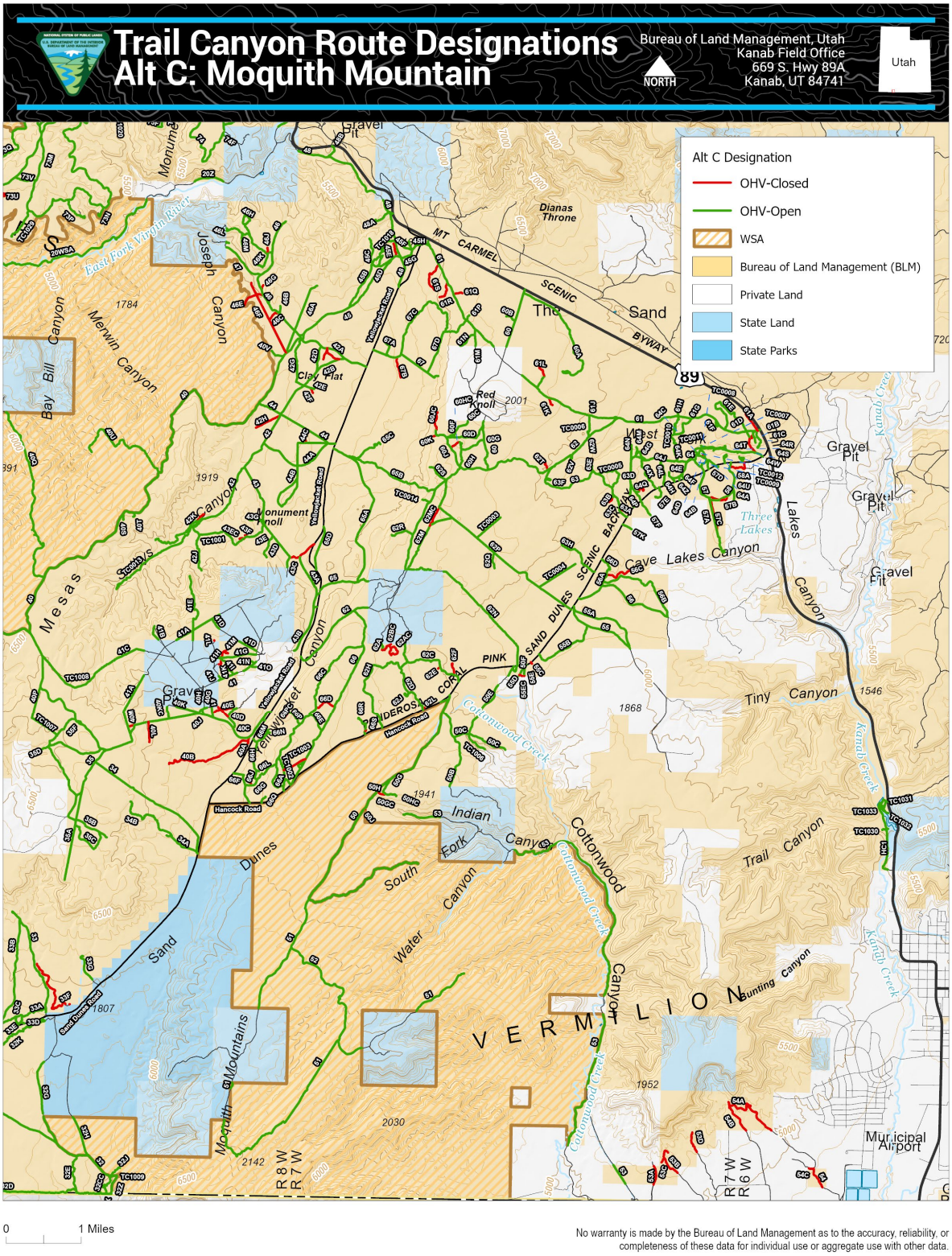
## C.6 Map 6: Alternative A, Moquith Mountain Area



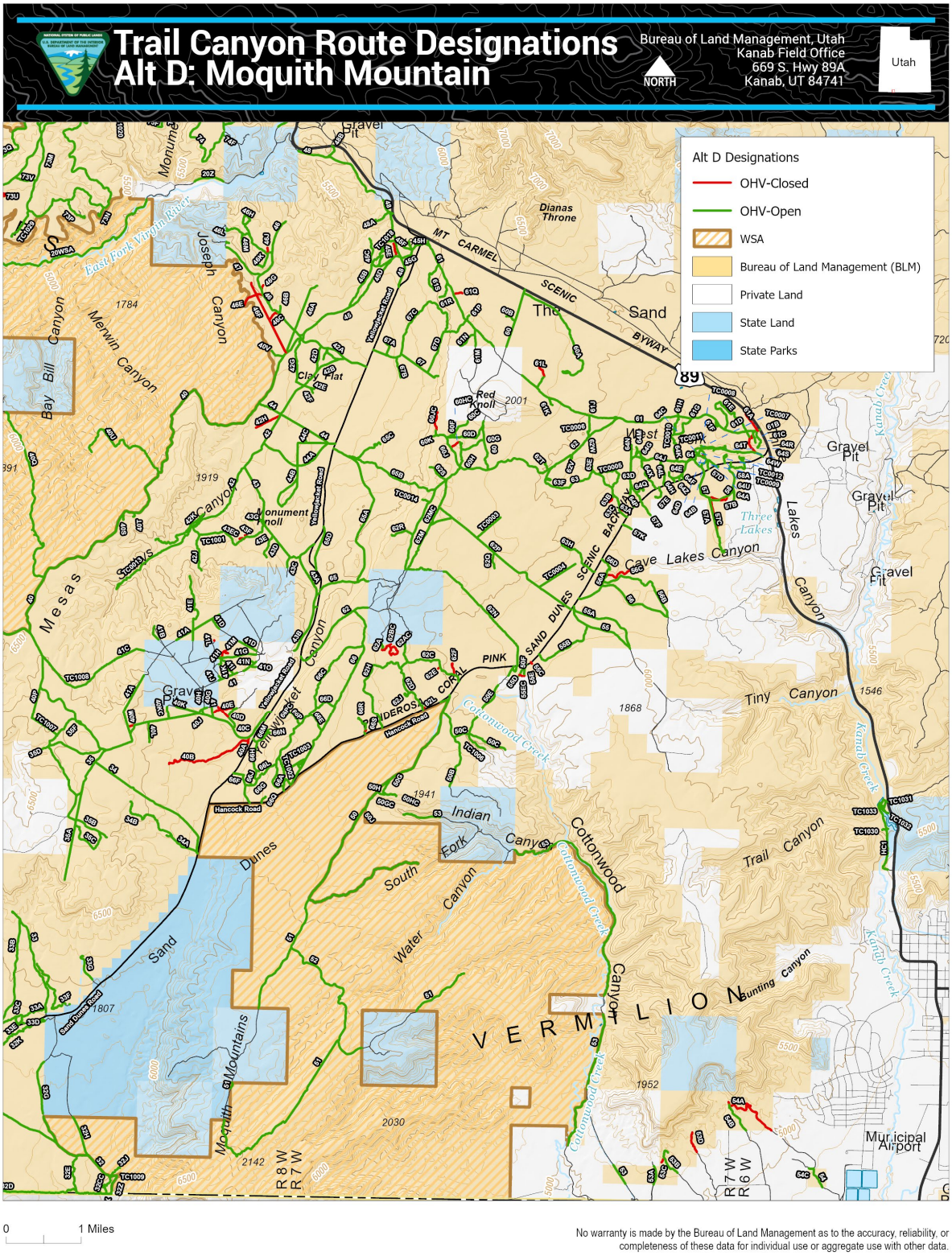
## C.7 Map 7: Alternative B, Moquith Mountain Area



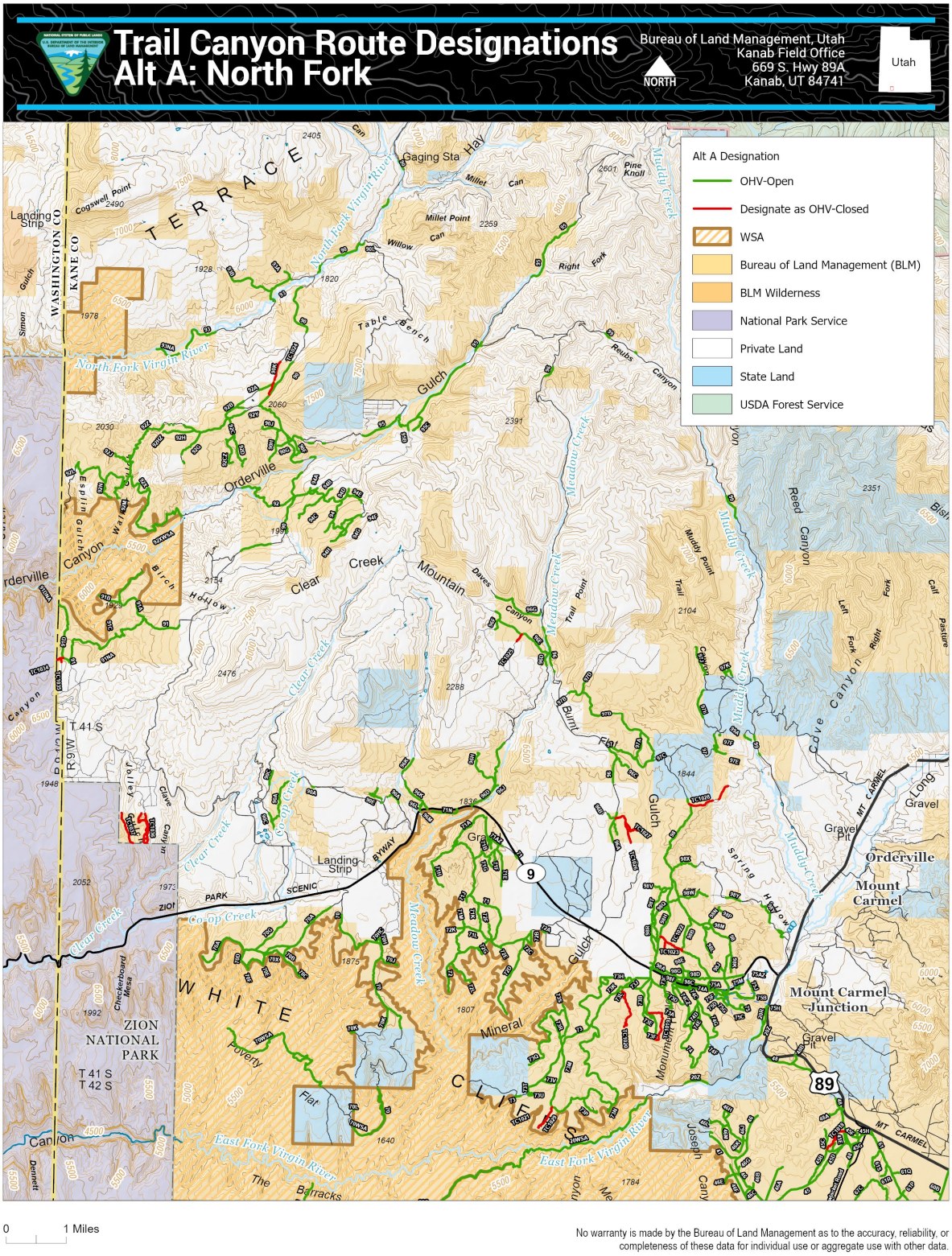
## C.8 Map 8: Alternative C, Moquith Mountain Area



## C.9 Map 9: Alternative D, Moquith Mountain Area



## C.10 Map 10: Alternative A, North Fork Area

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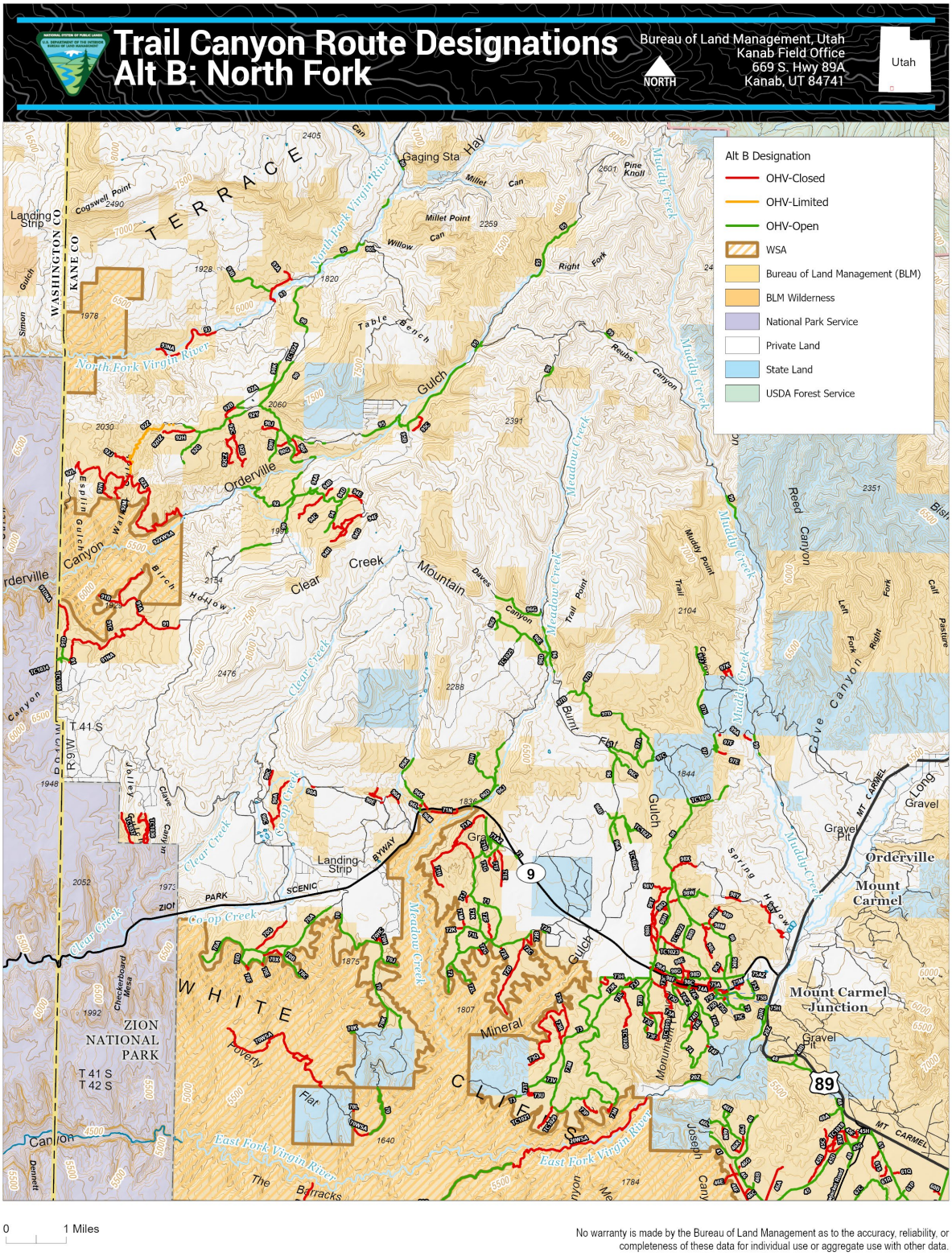
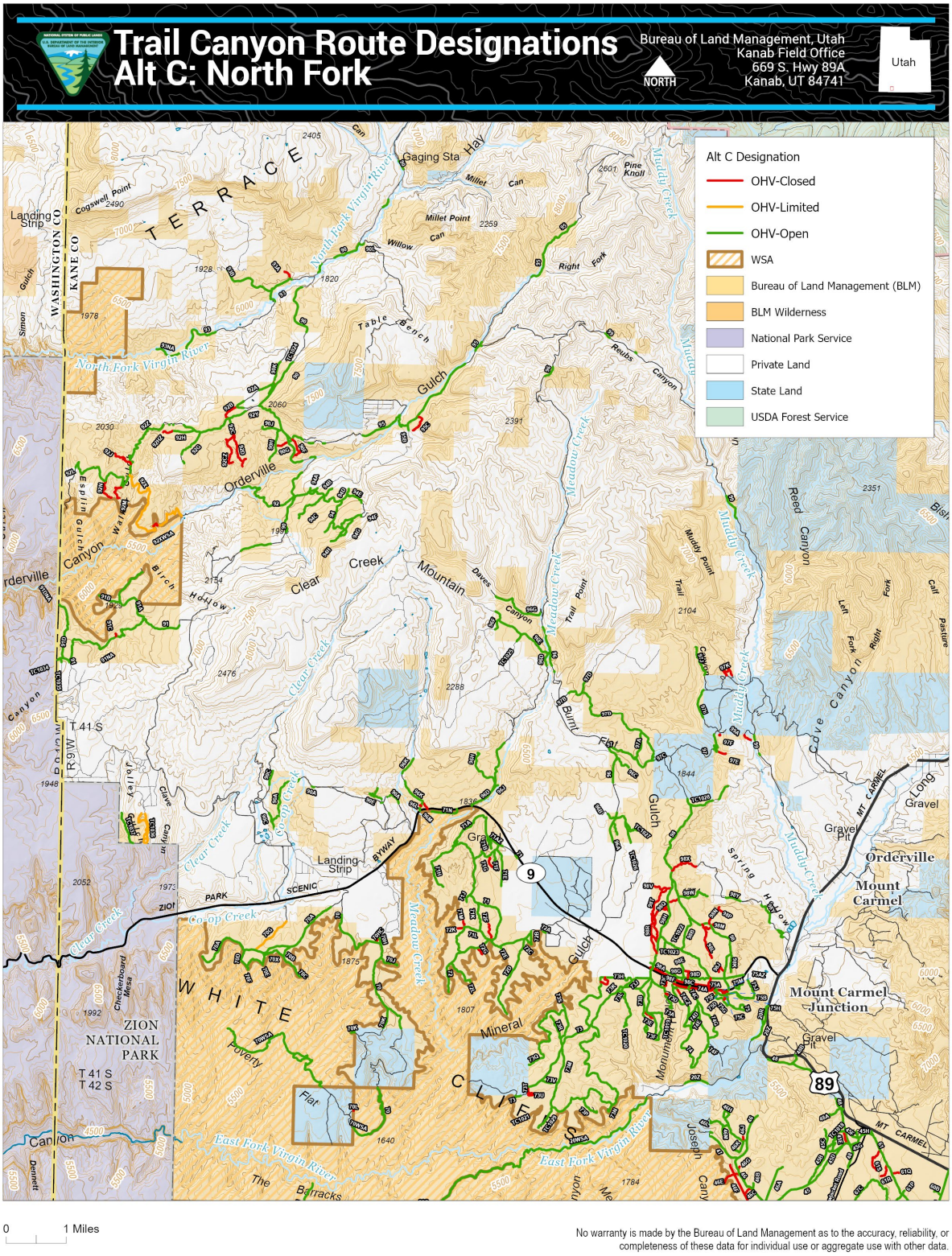
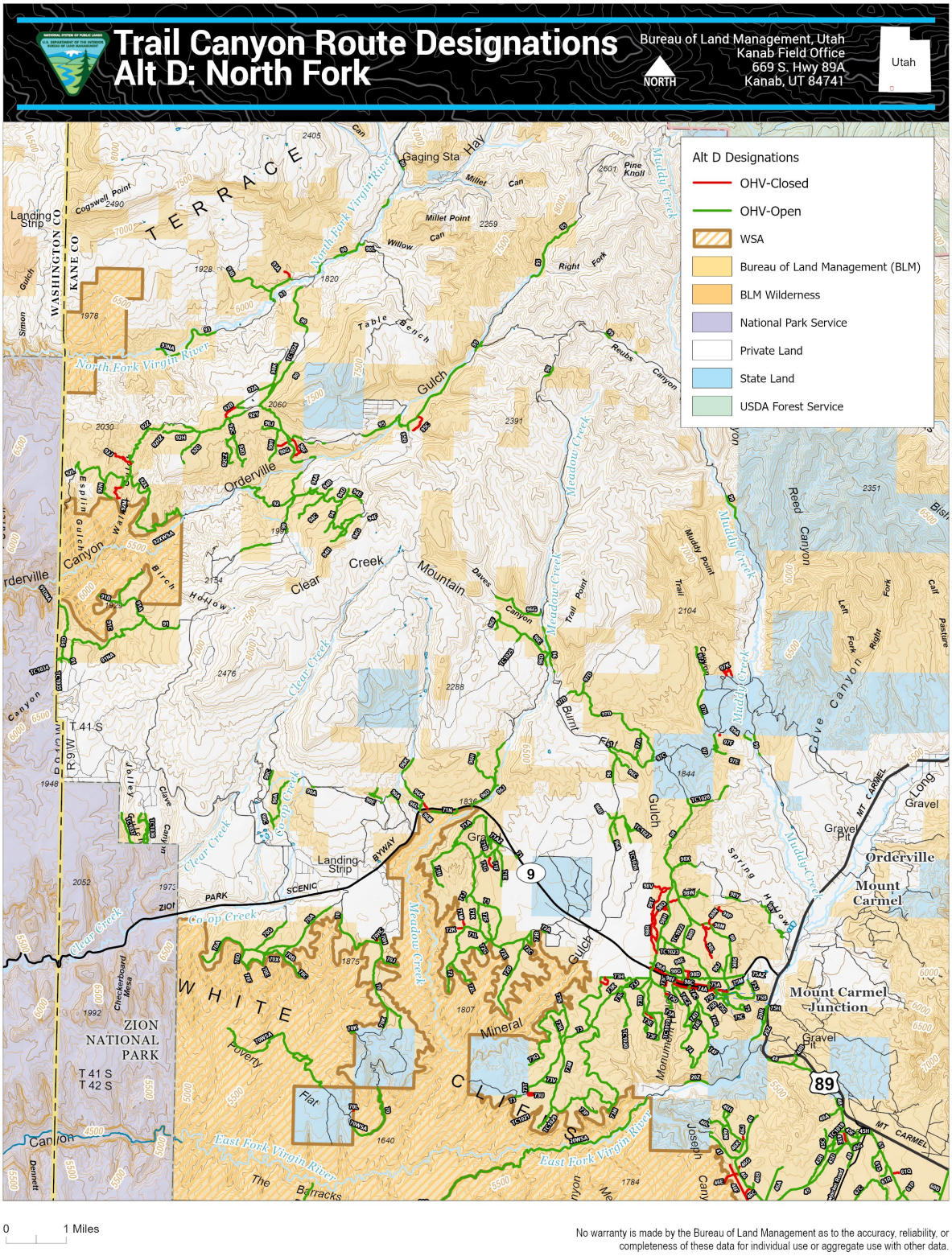
## C.11 Map 11: Alternative B, North Fork Area



## C.12 Map 12: Alternative C, North Fork Area



## C.13 Map 13: Alternative D, North Fork Area

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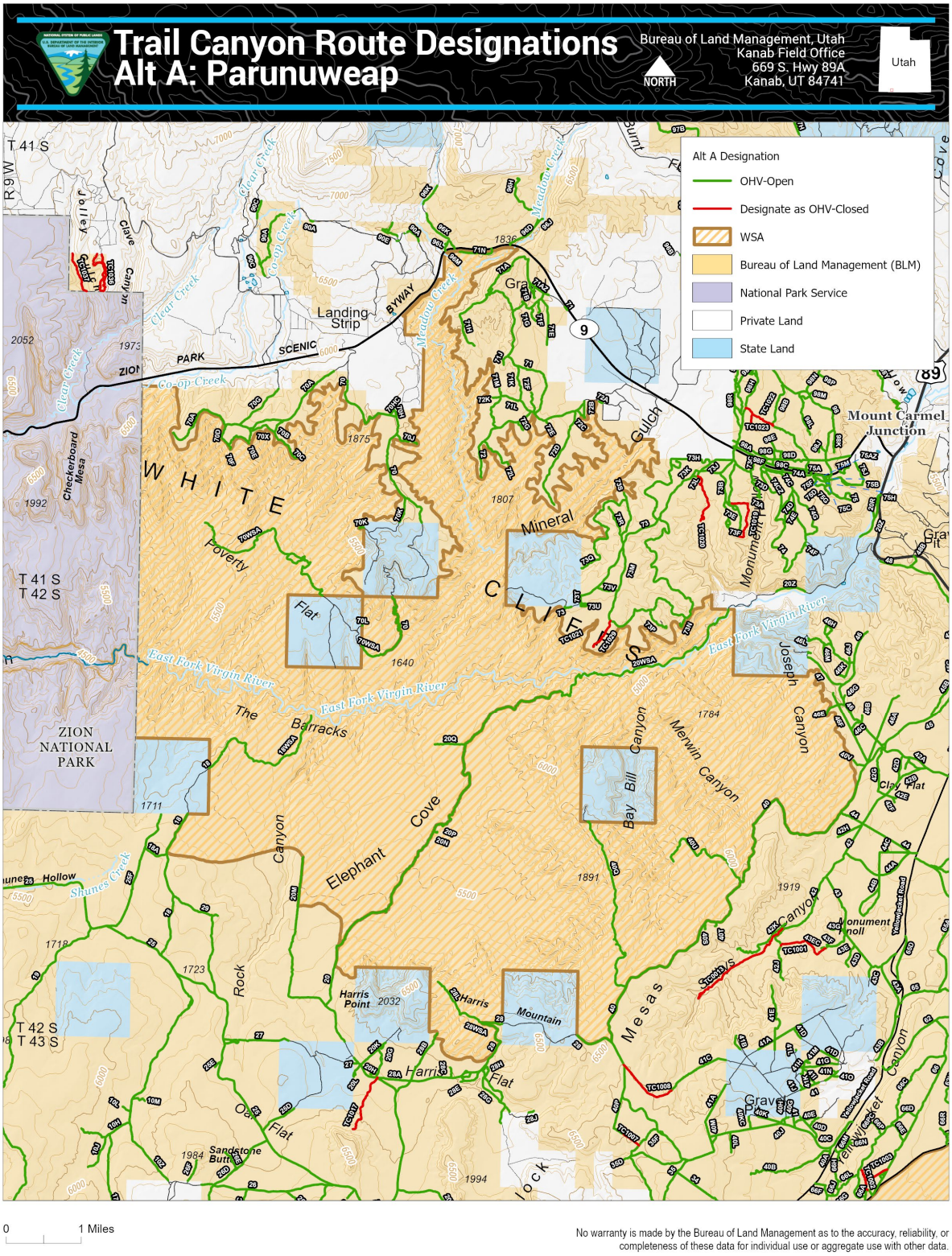
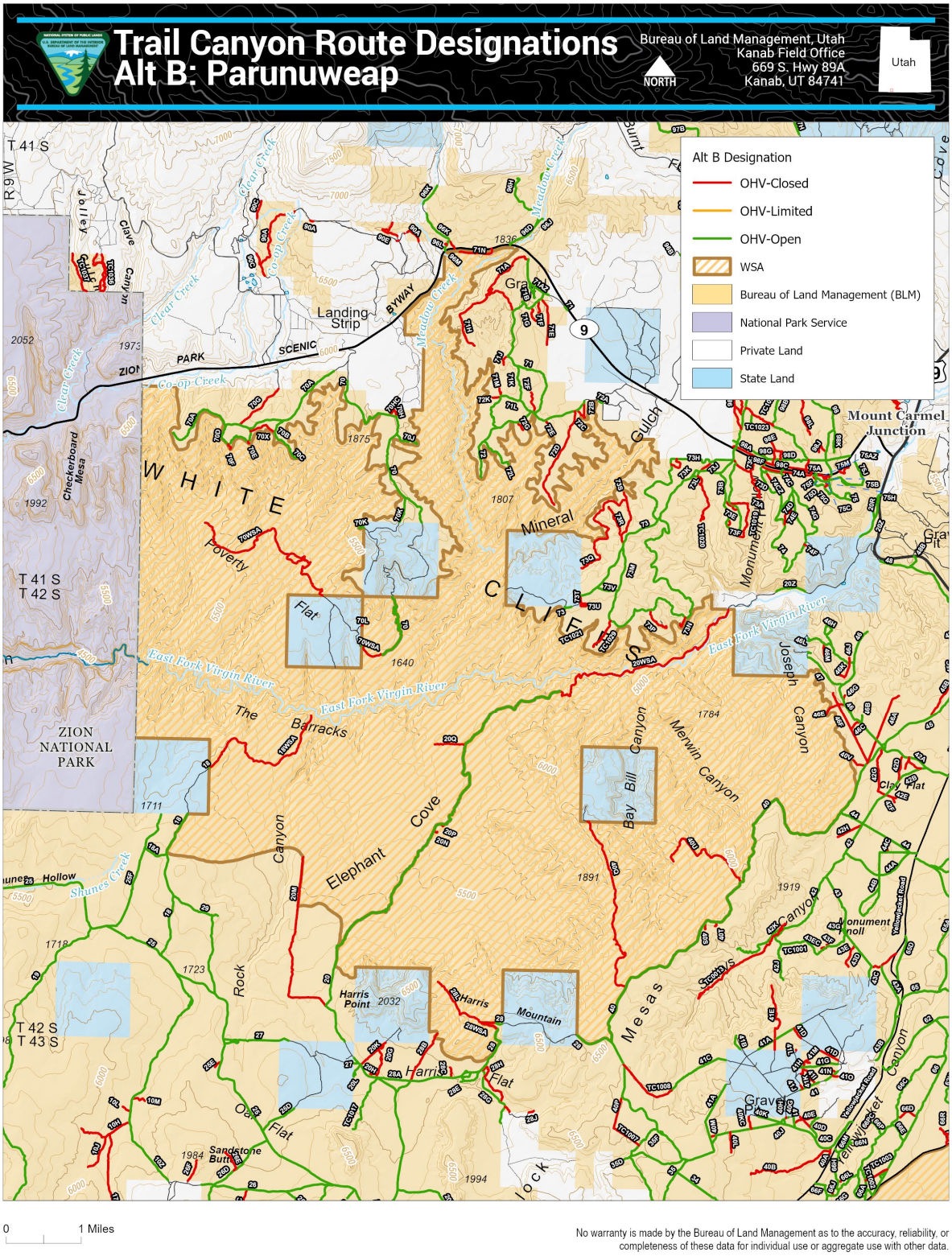
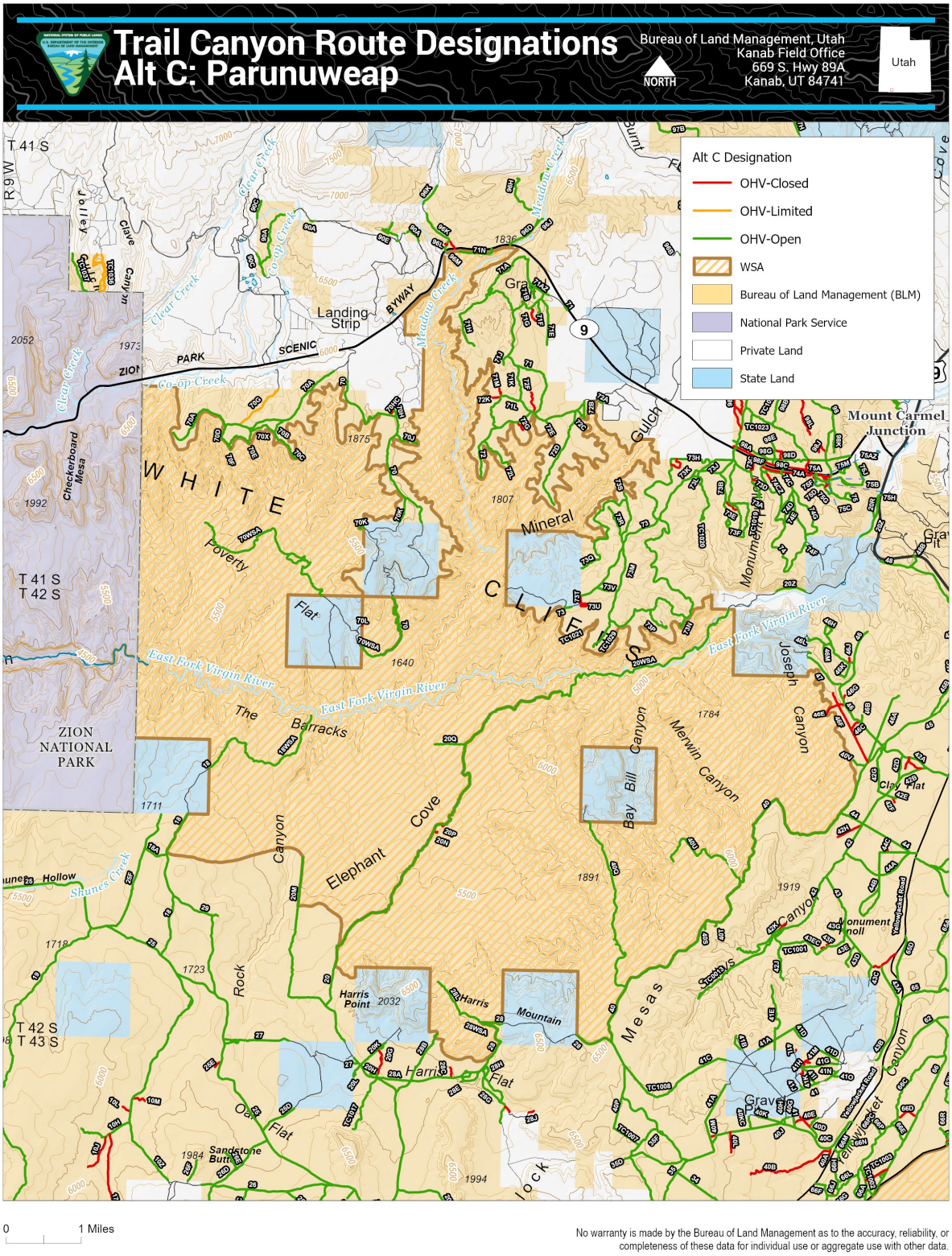
## C.14 Map 14: Alternative A, Parunuweap Area



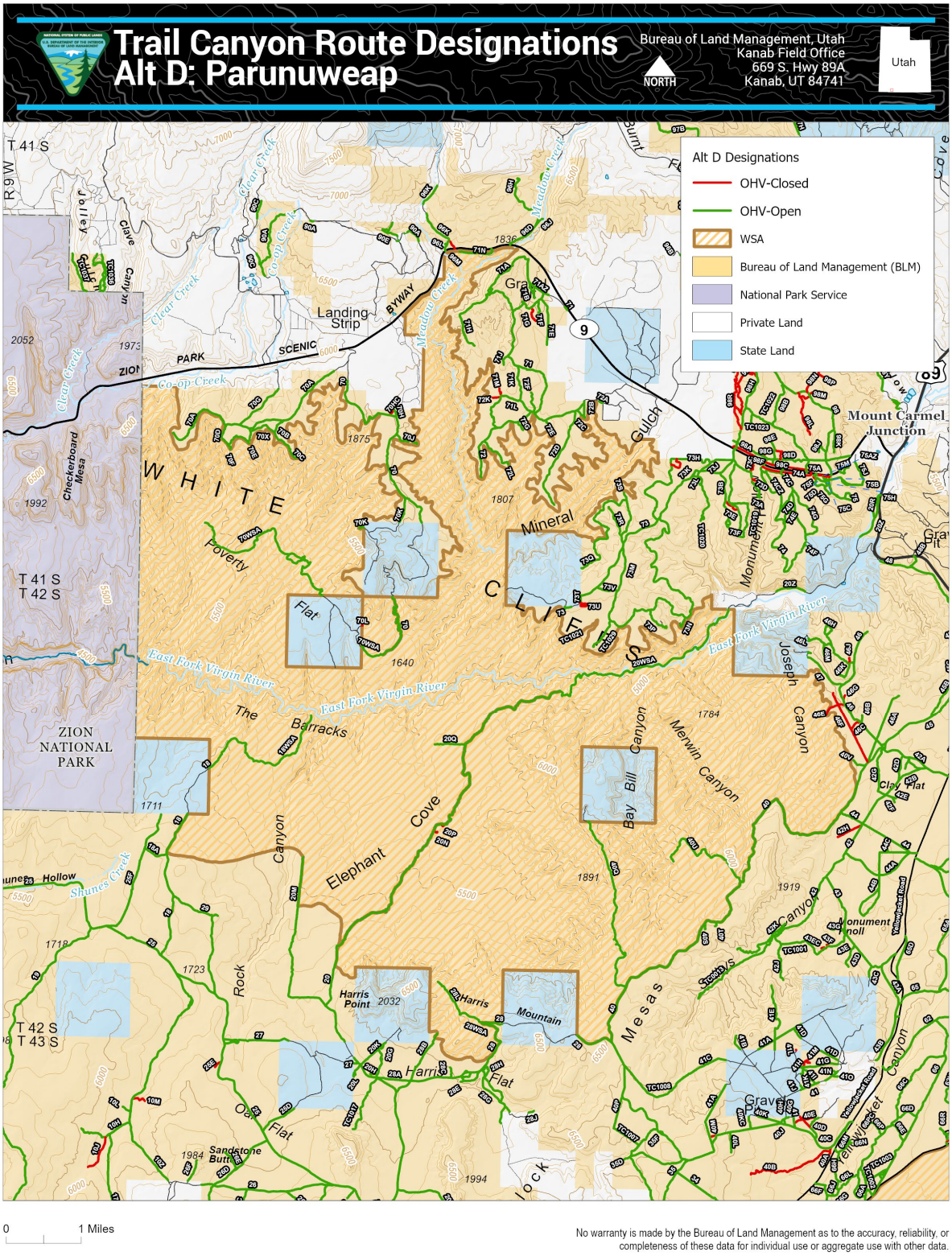
## C.15 Map 15: Alternative B, Parunuweap Area



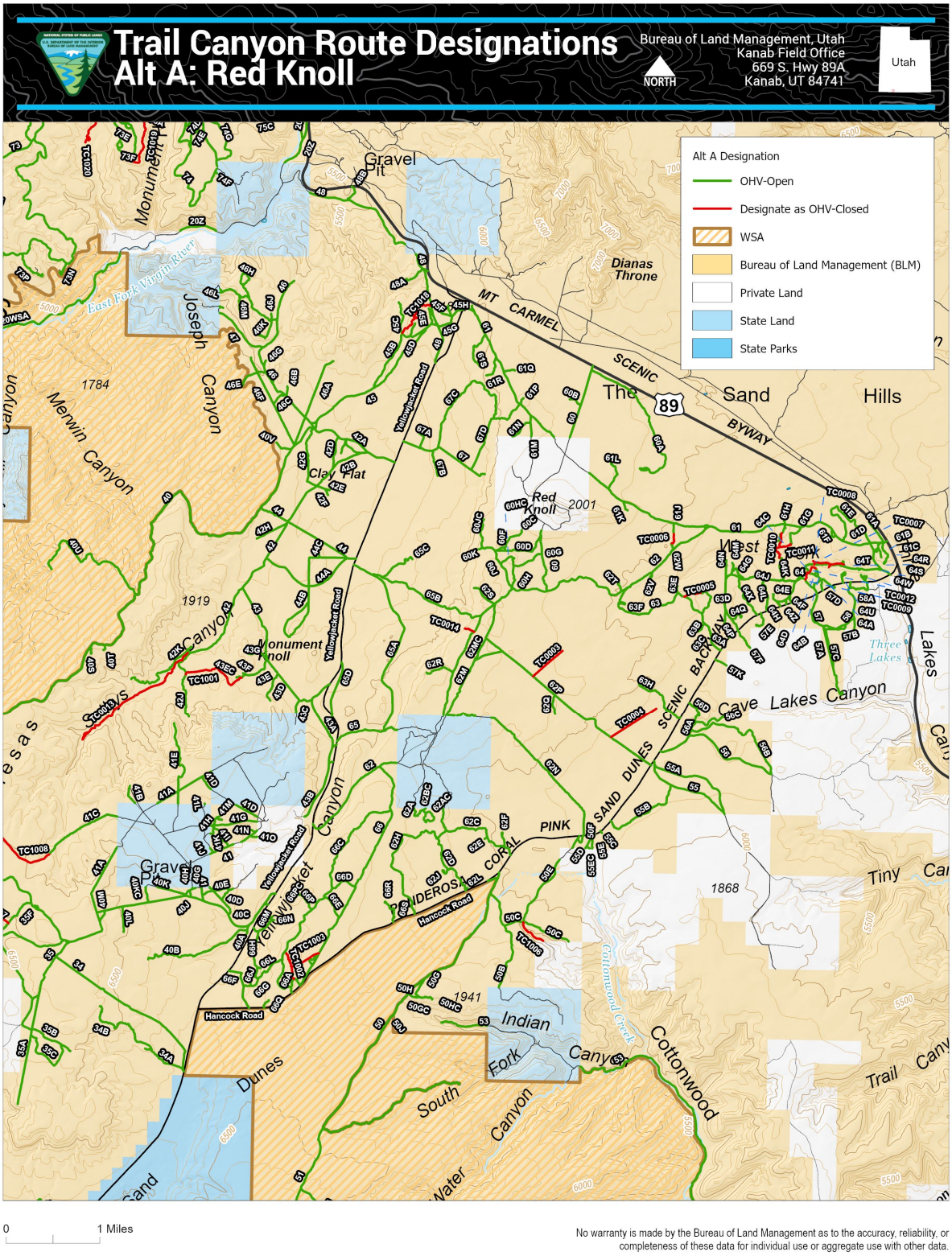
## C.16 Map 16: Alternative C, Parunuweap Area



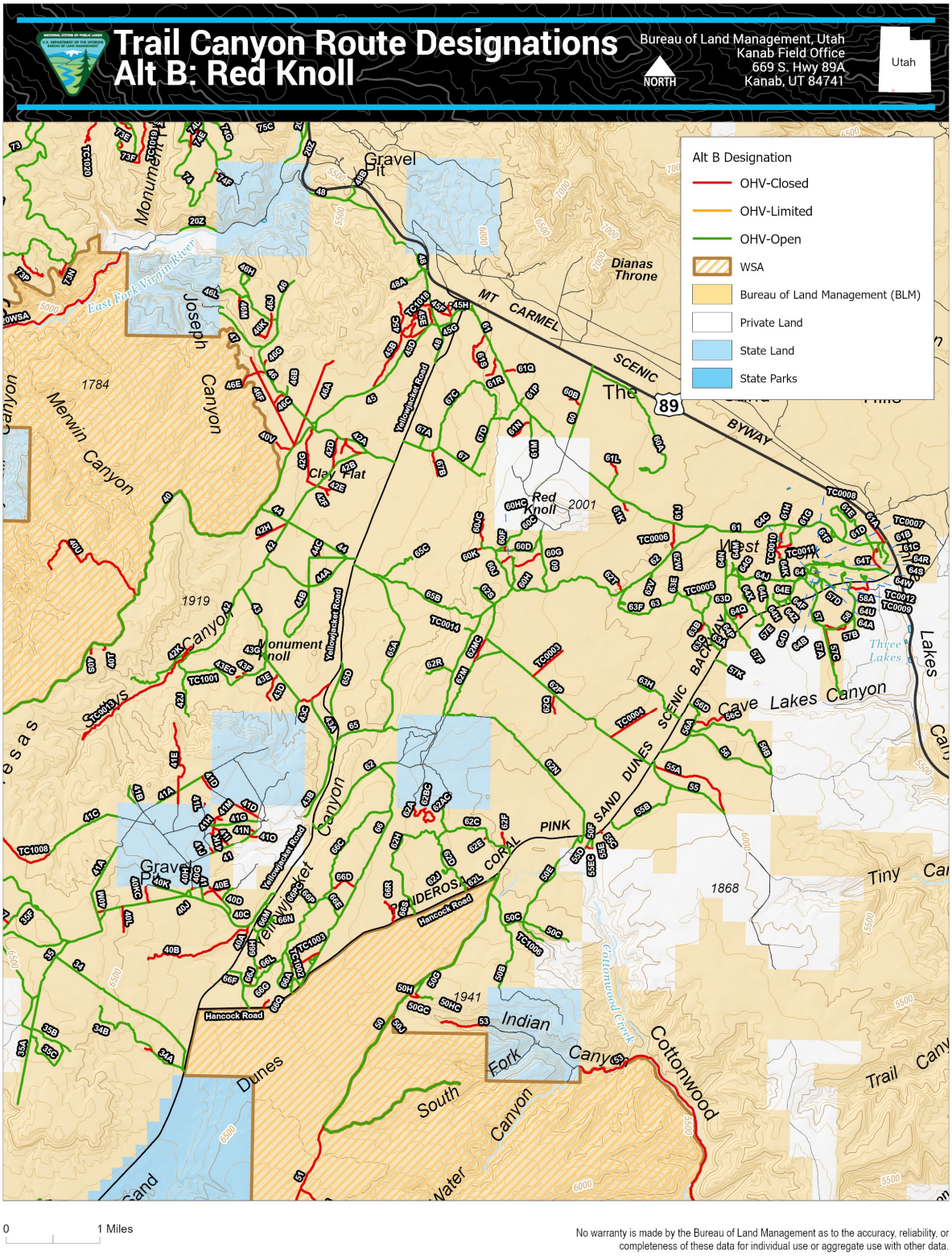
## C.17 Map 17: Alternative D, Parunuweap Area



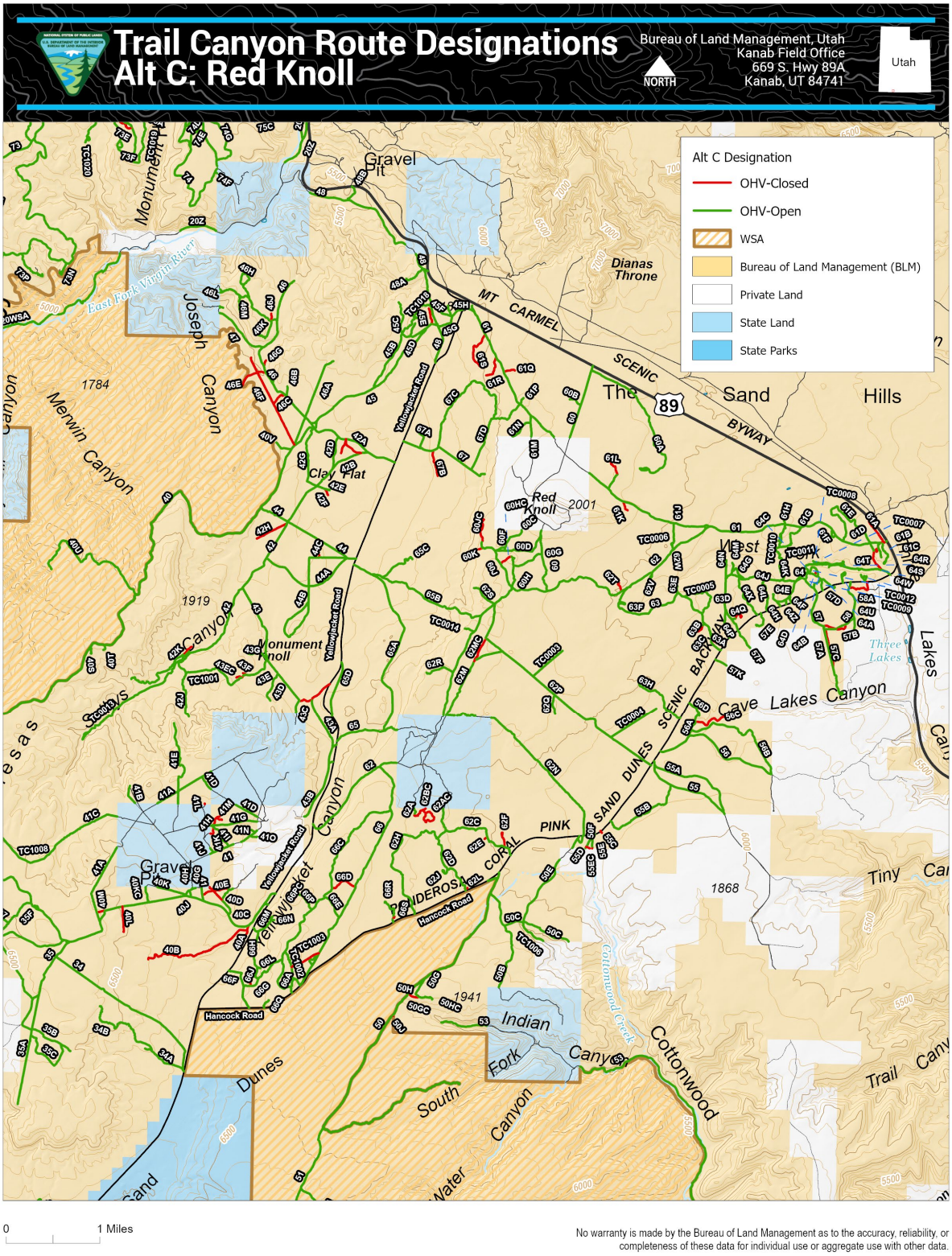
## C.18 Map 18: Alternative A, Red Knoll Area



## C.19 Map 19: Alternative B, Red Knoll Area



## C.20 Map 20: Alternative C, Red Knoll Area

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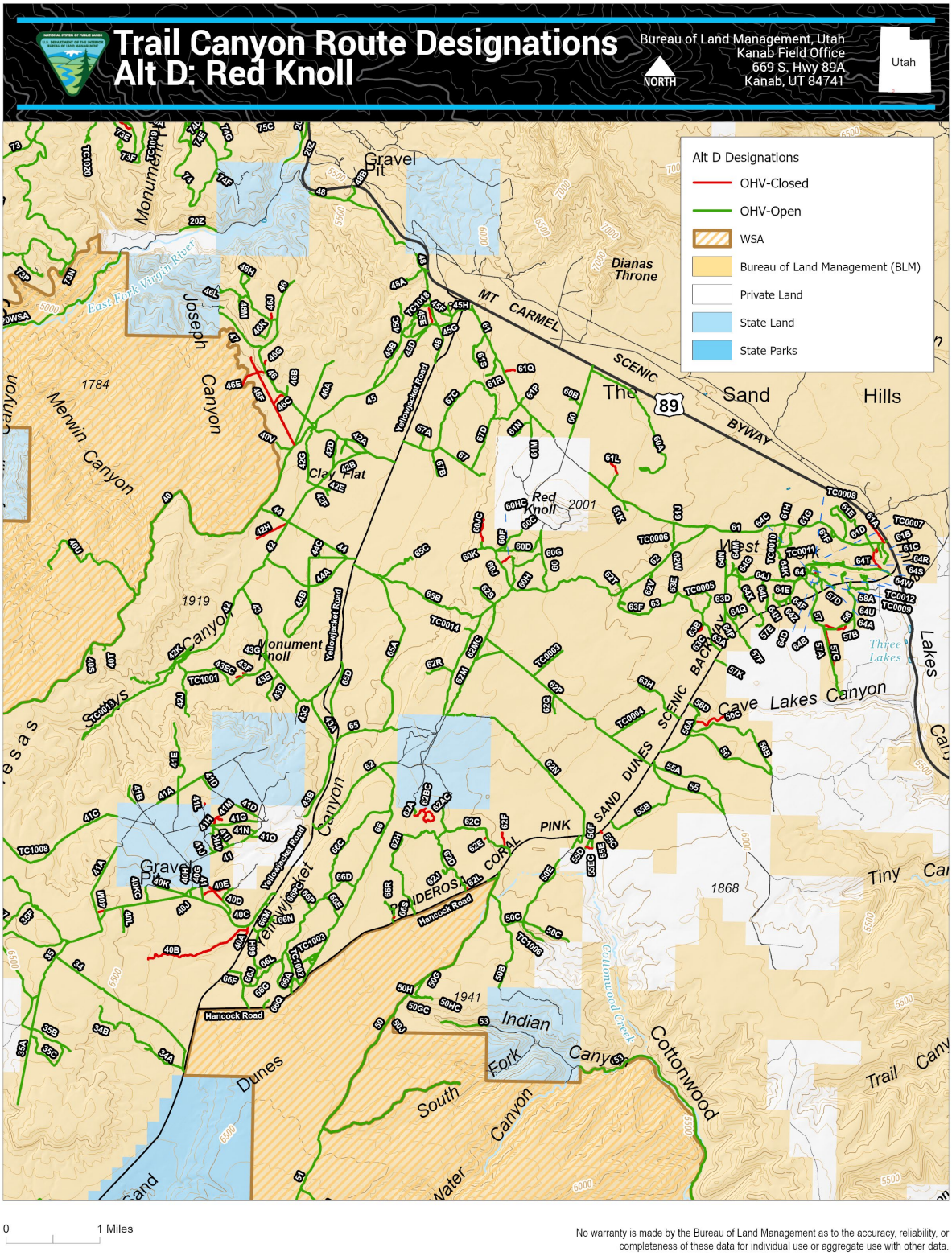
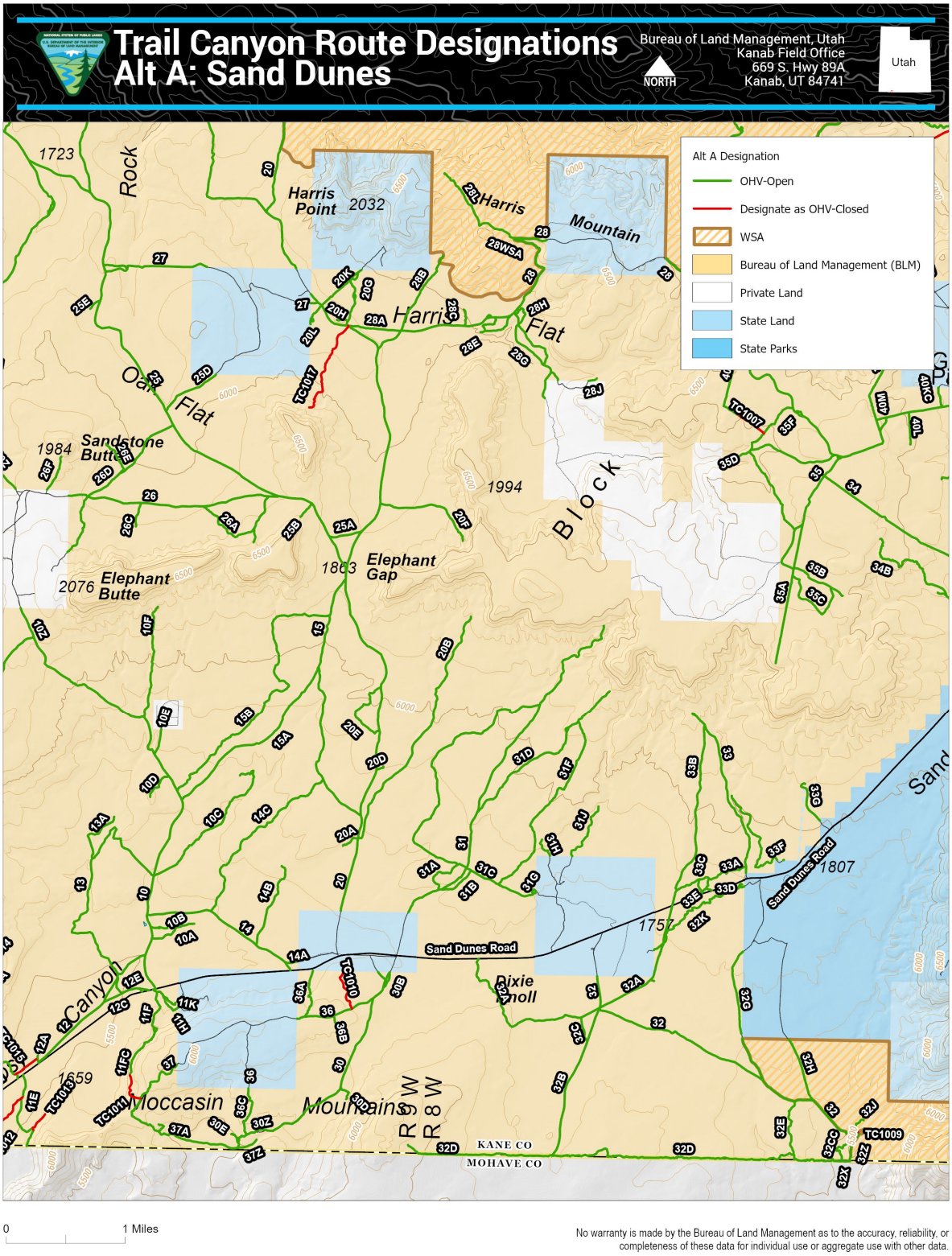
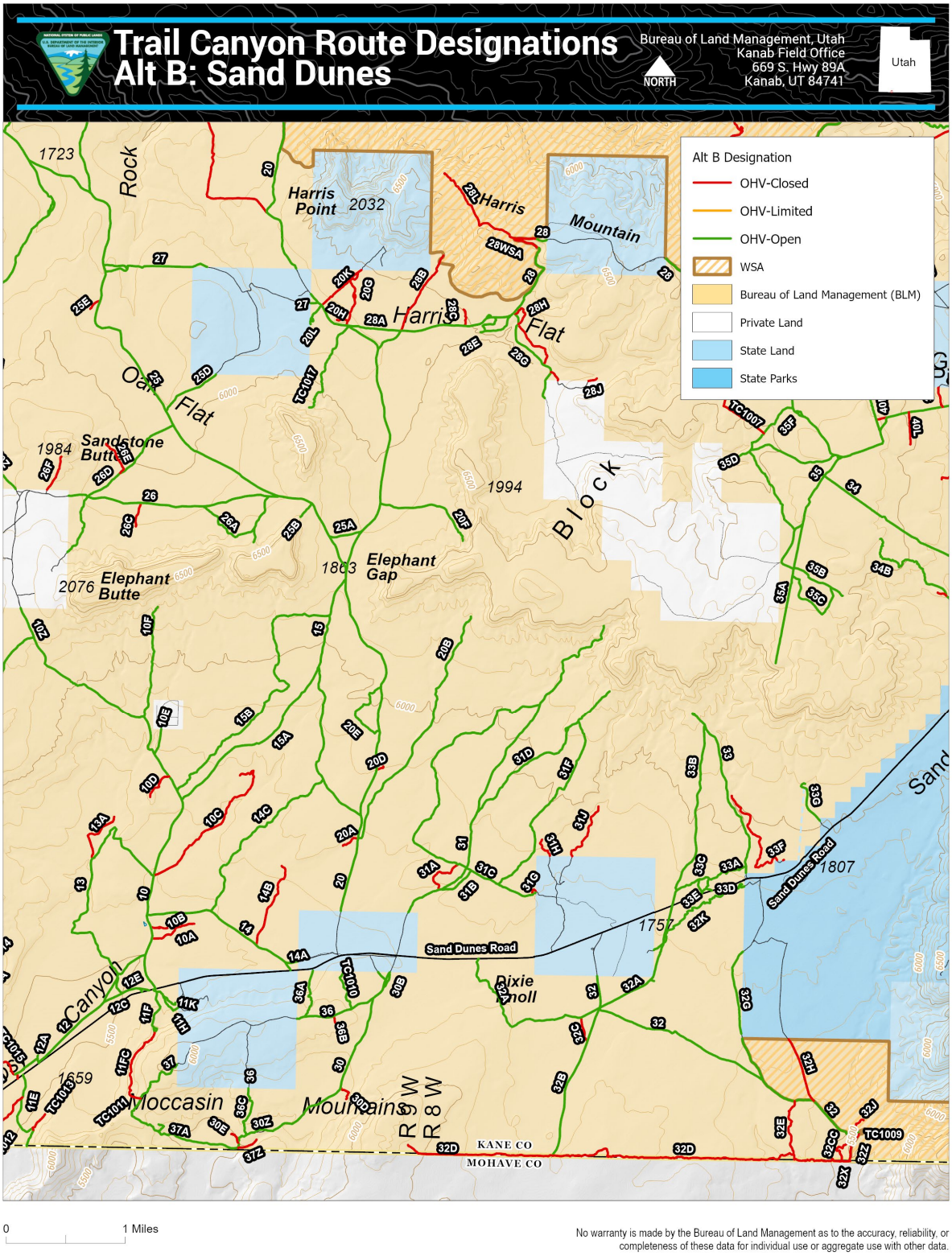
## C.21 Map 21: Alternative D, Red Knoll Area



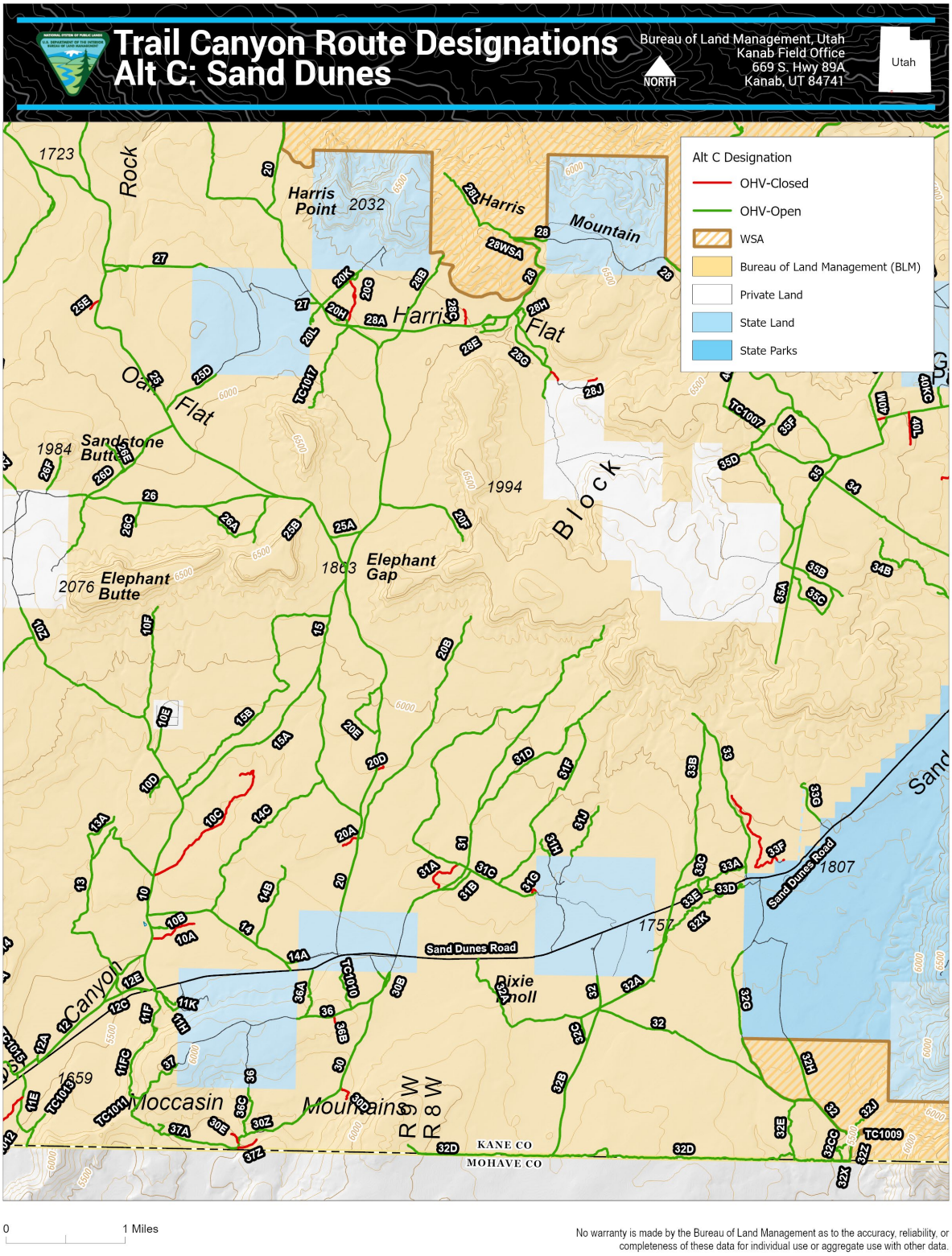
## C.22 Map 22: Alternative A, Sand Dunes Area



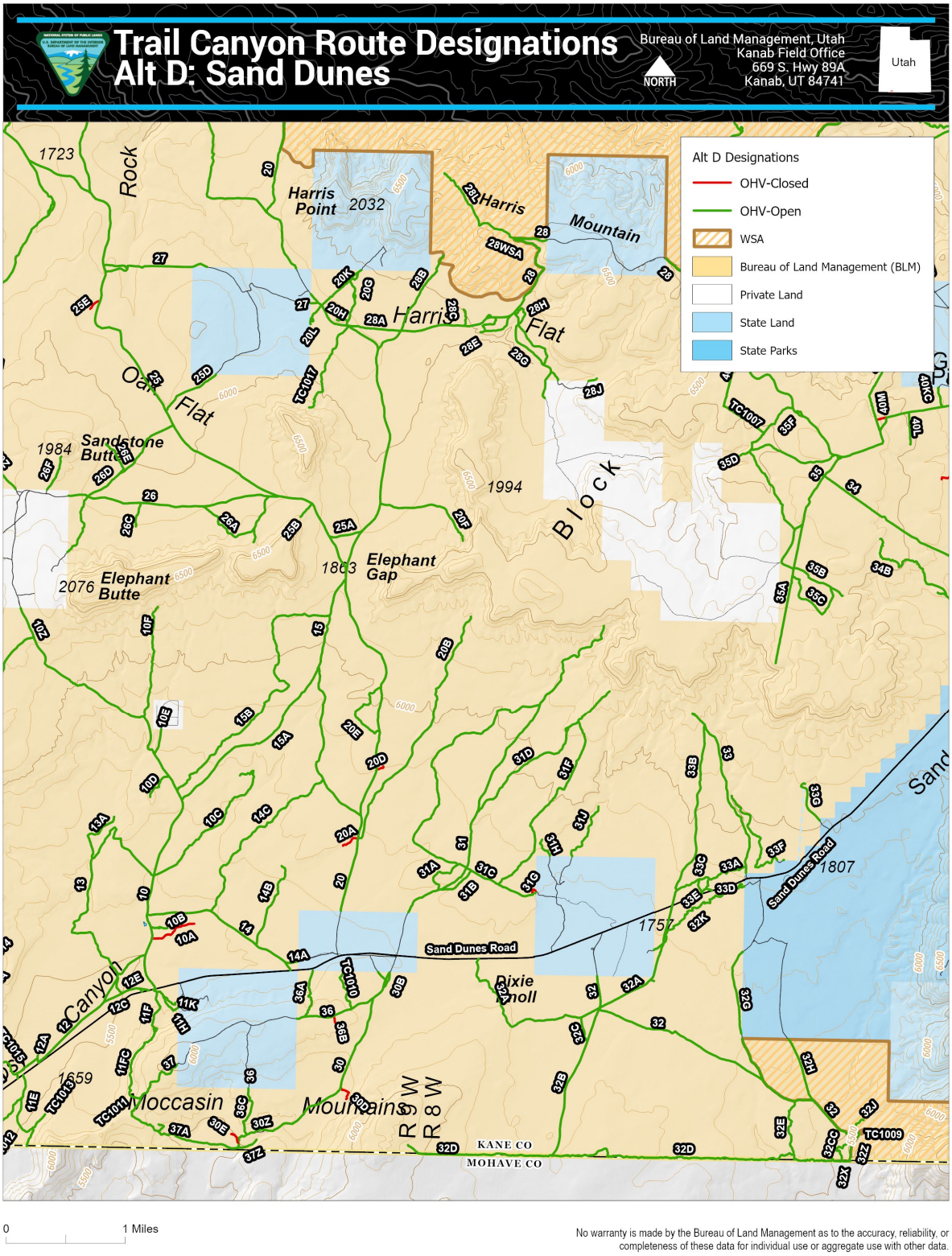
## C.23 Map 23: Alternative B, Sand Dunes Area



## C.24 Map 24: Alternative C, Sand Dunes Area



## C.25 Map 25: Alternative D, Sand Dunes Area

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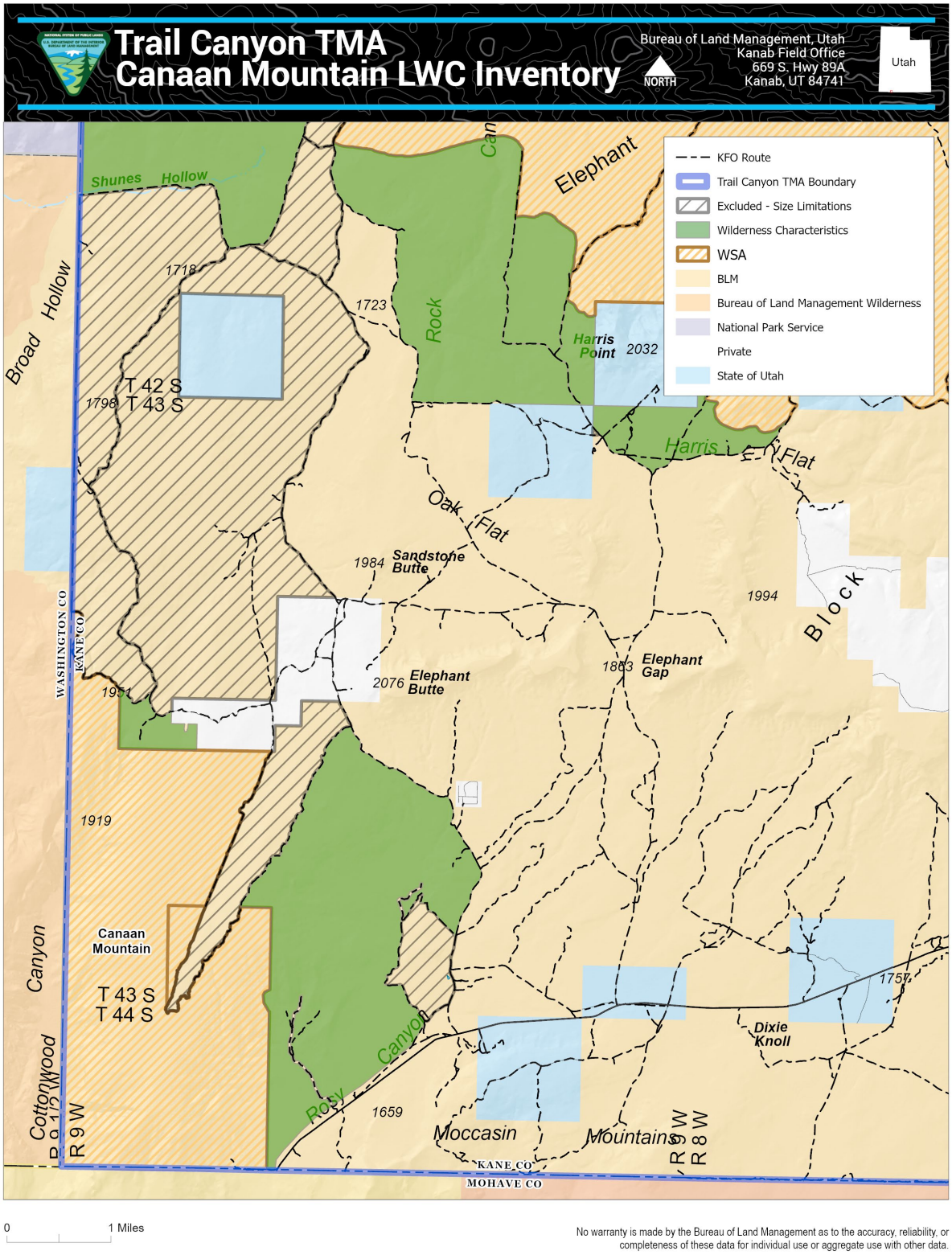
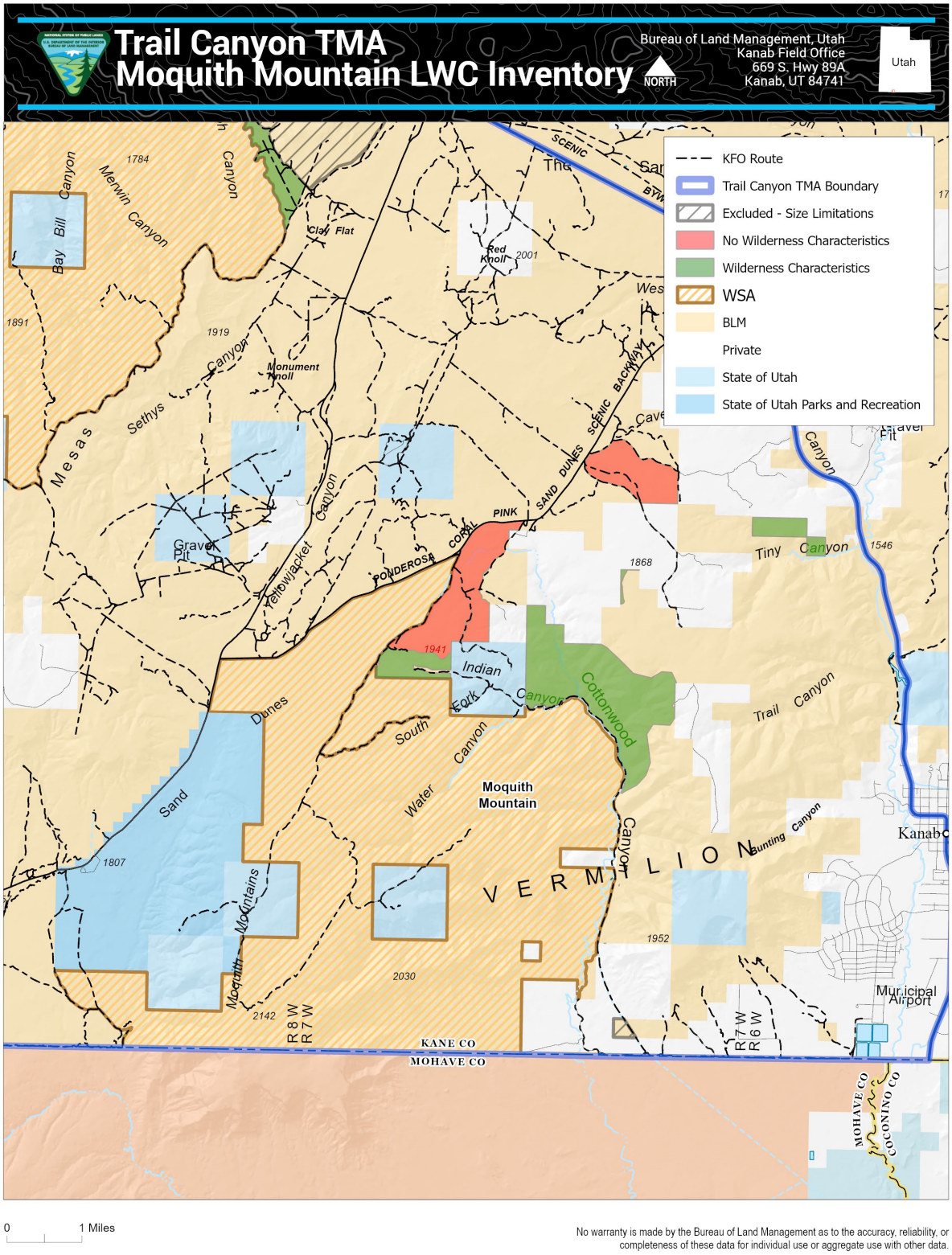
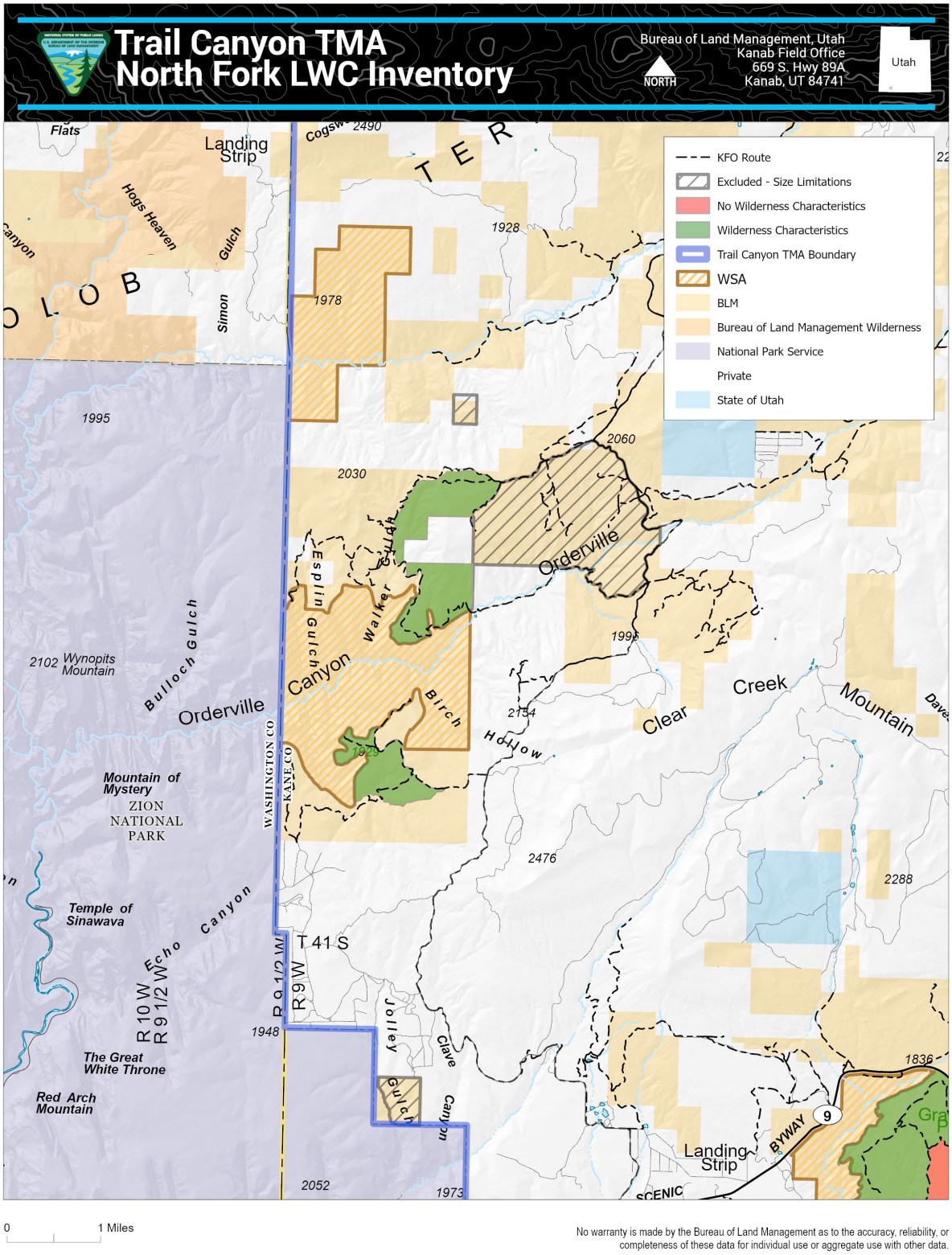
## C.26 Map 26: Canaan Mountain LWC



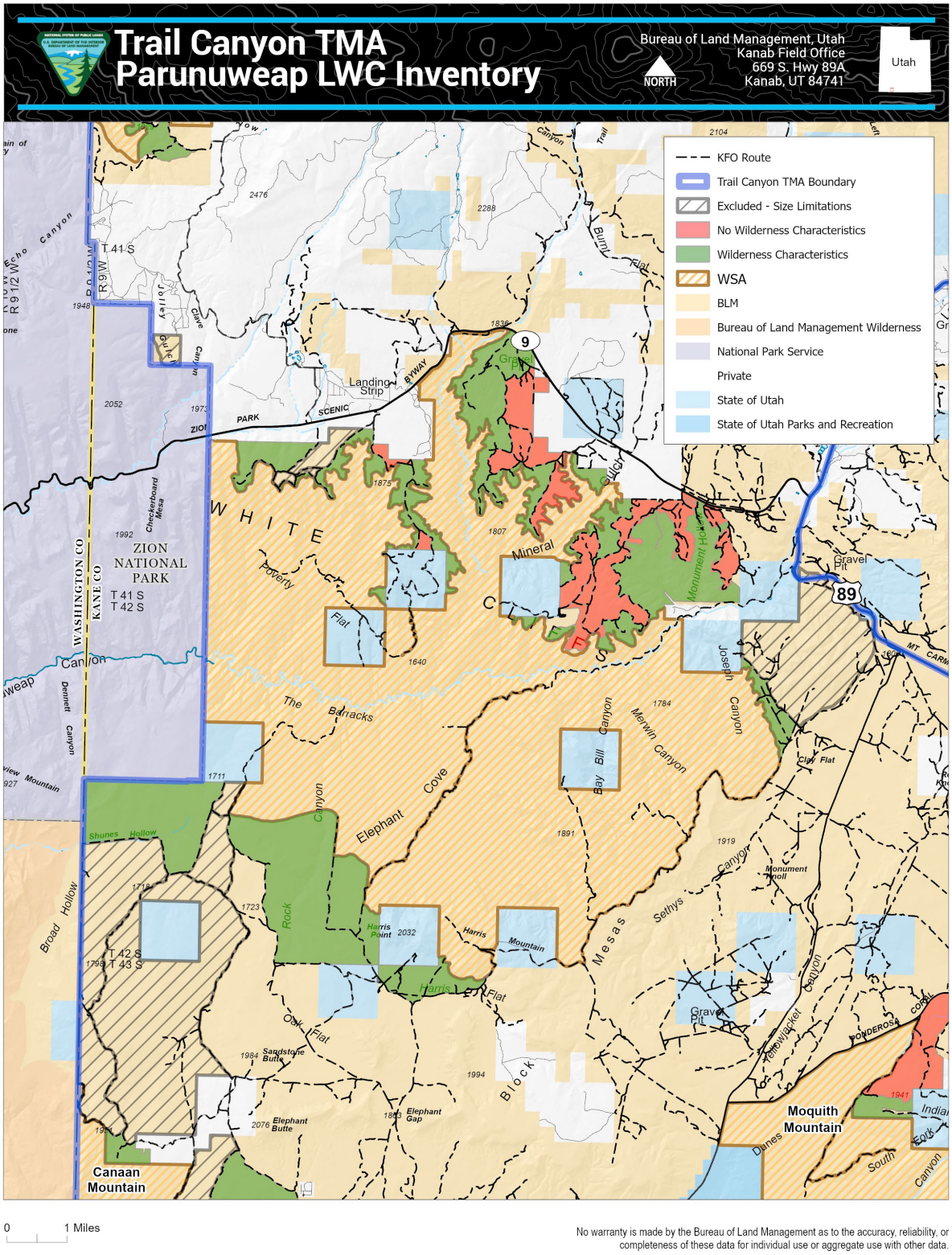
## C.27 Map 27: Moquith Mountain LWC



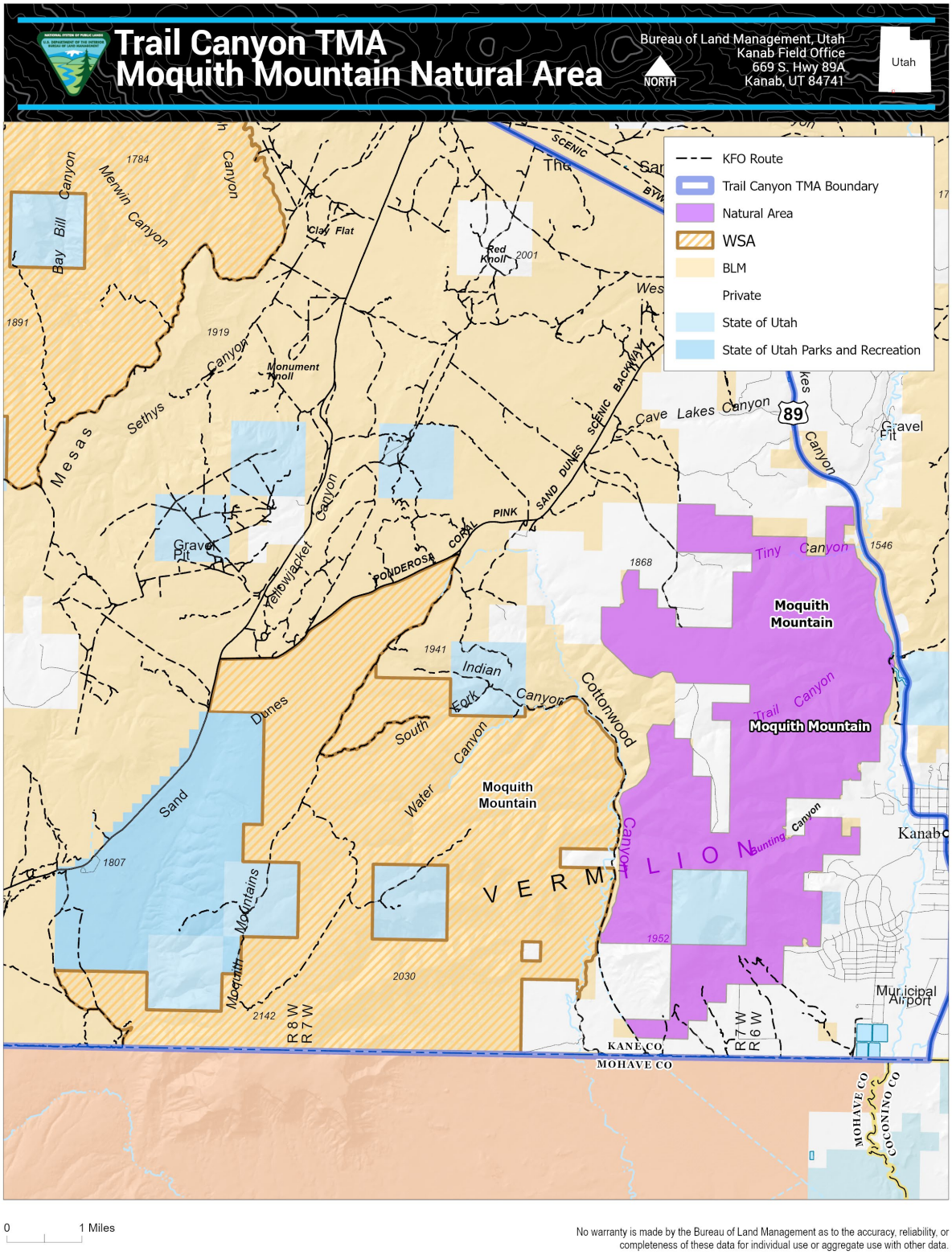
## C.28 Map 28: North Fork Area LWC



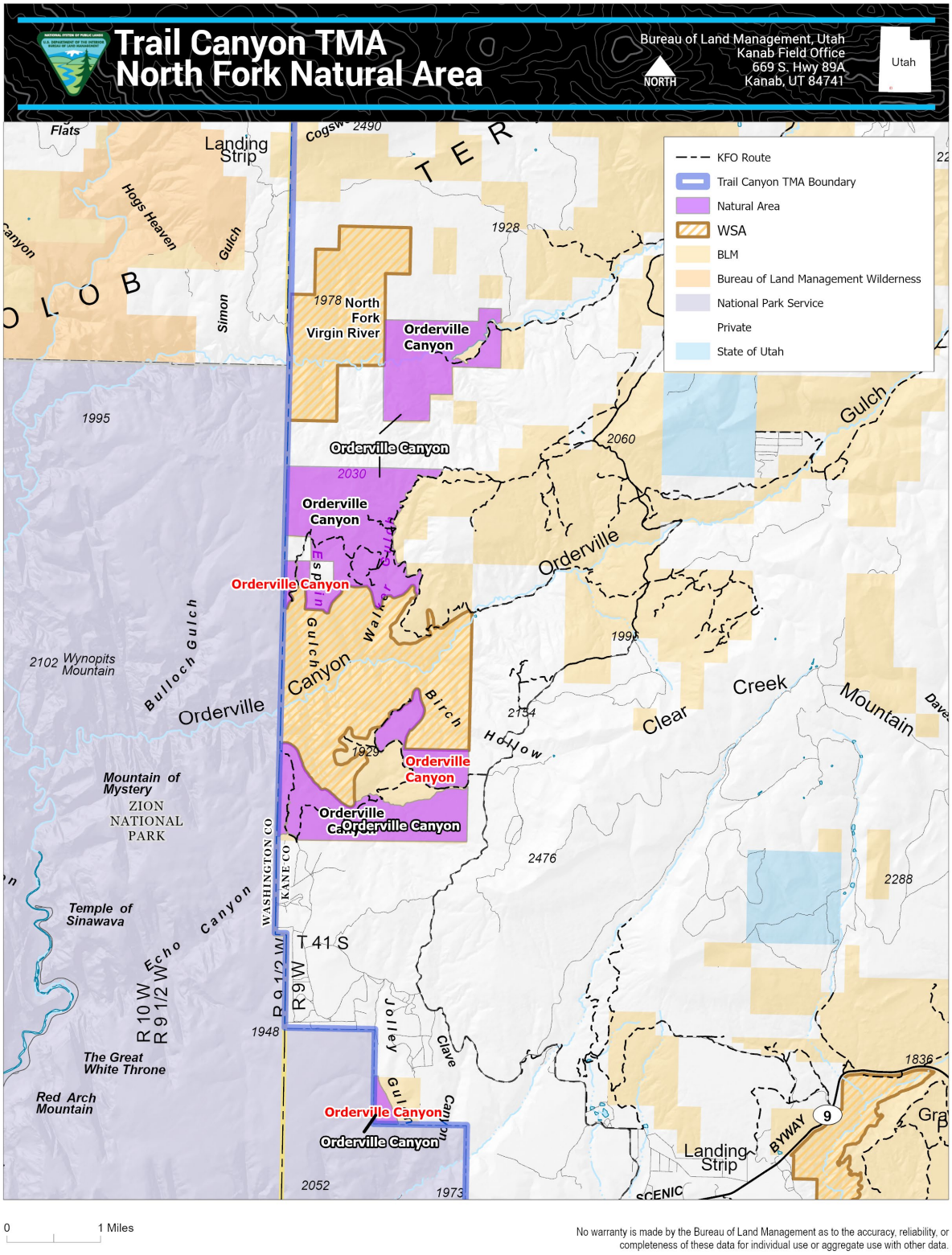
## C.29 Map 29: Parunuweap Canyon LWC



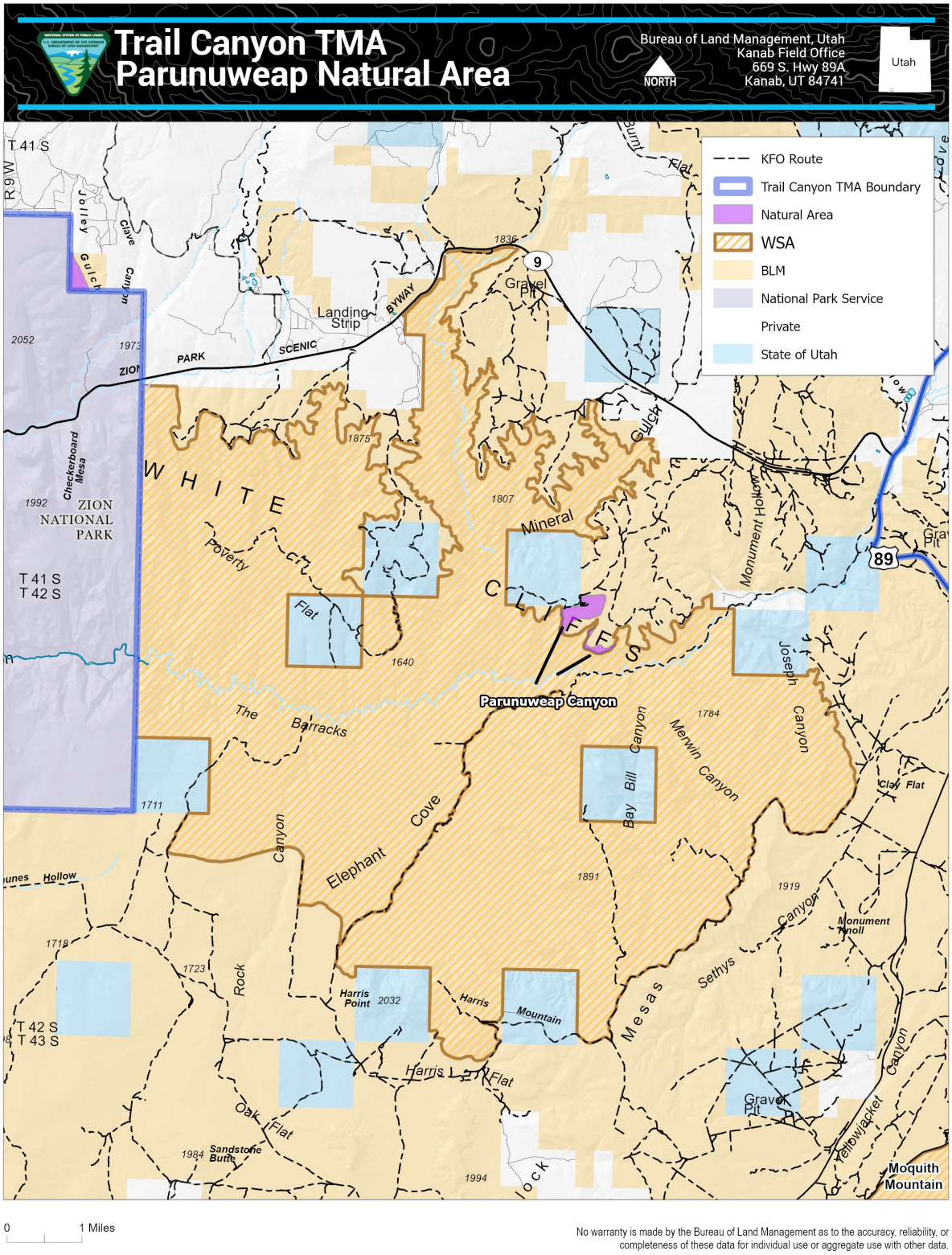
## C.30 Map 30: Moquith Mountain Natural Area



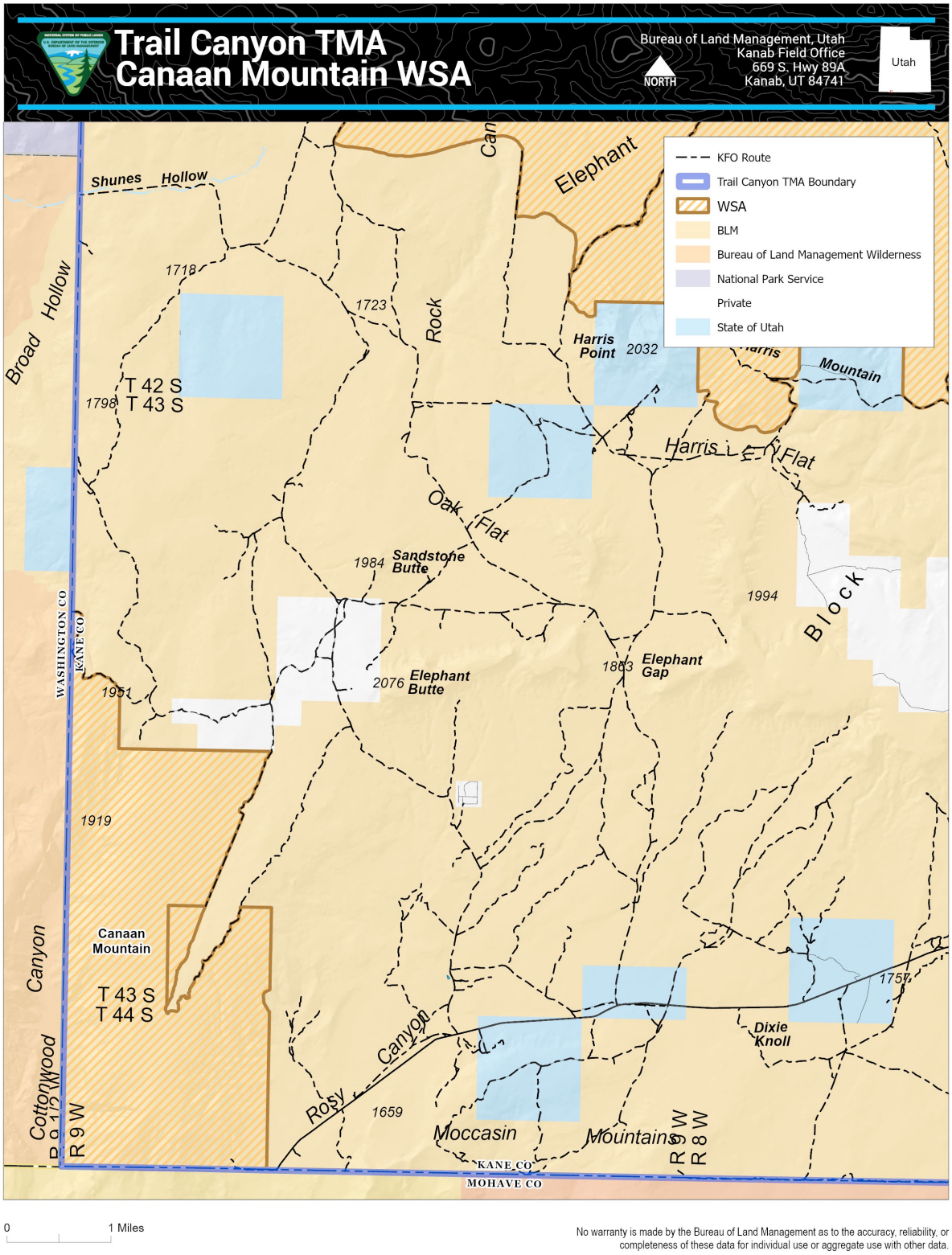
## C.31 Map 31: North Fork Virgin River and Orderville Canyon Natural Area



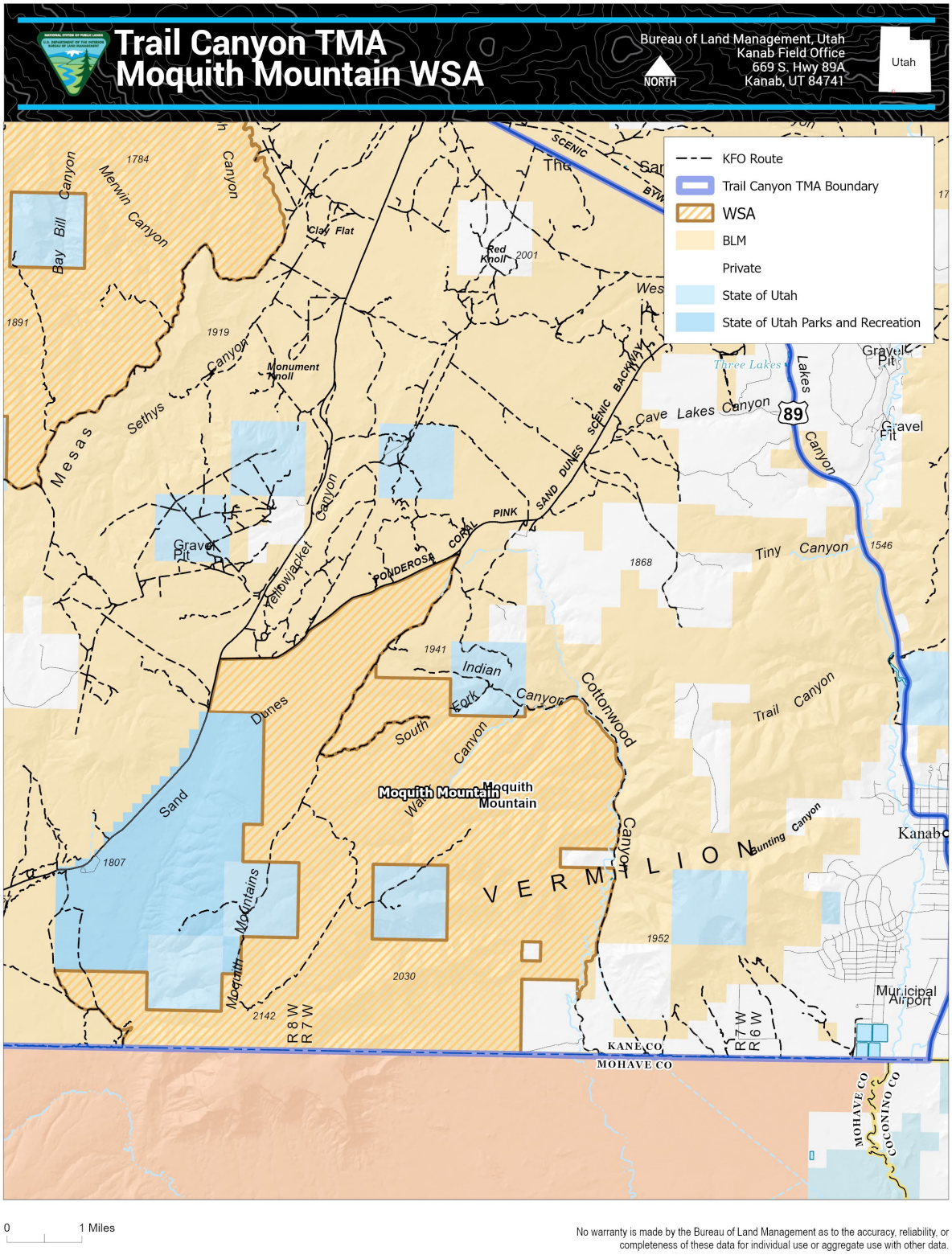
## C.32 Map 32: Parunuweap Canyon Natural Area



## C.33 Map 33: Canaan Mountain WSA



## C.34 Map 34: Moquith Mountain WSA

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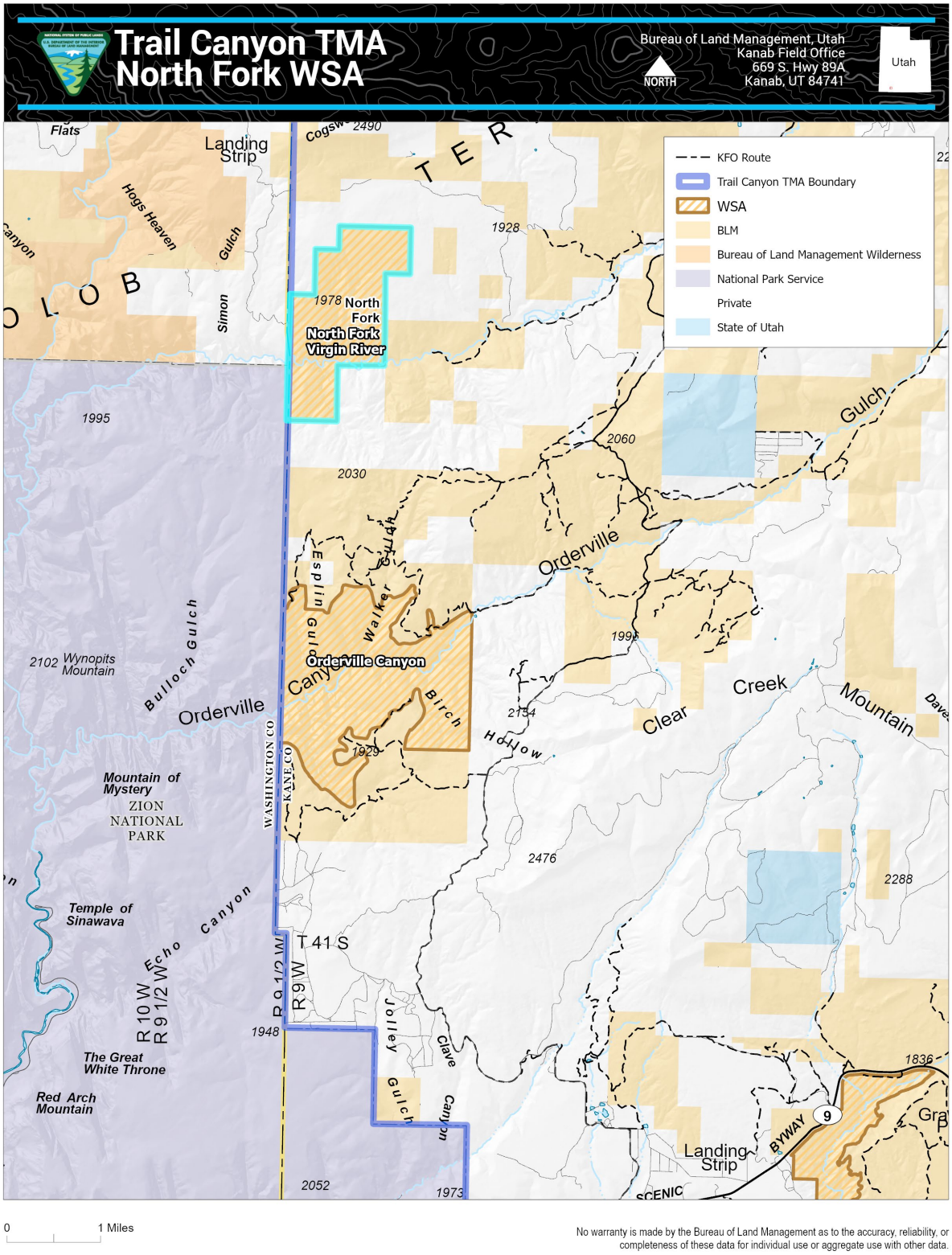
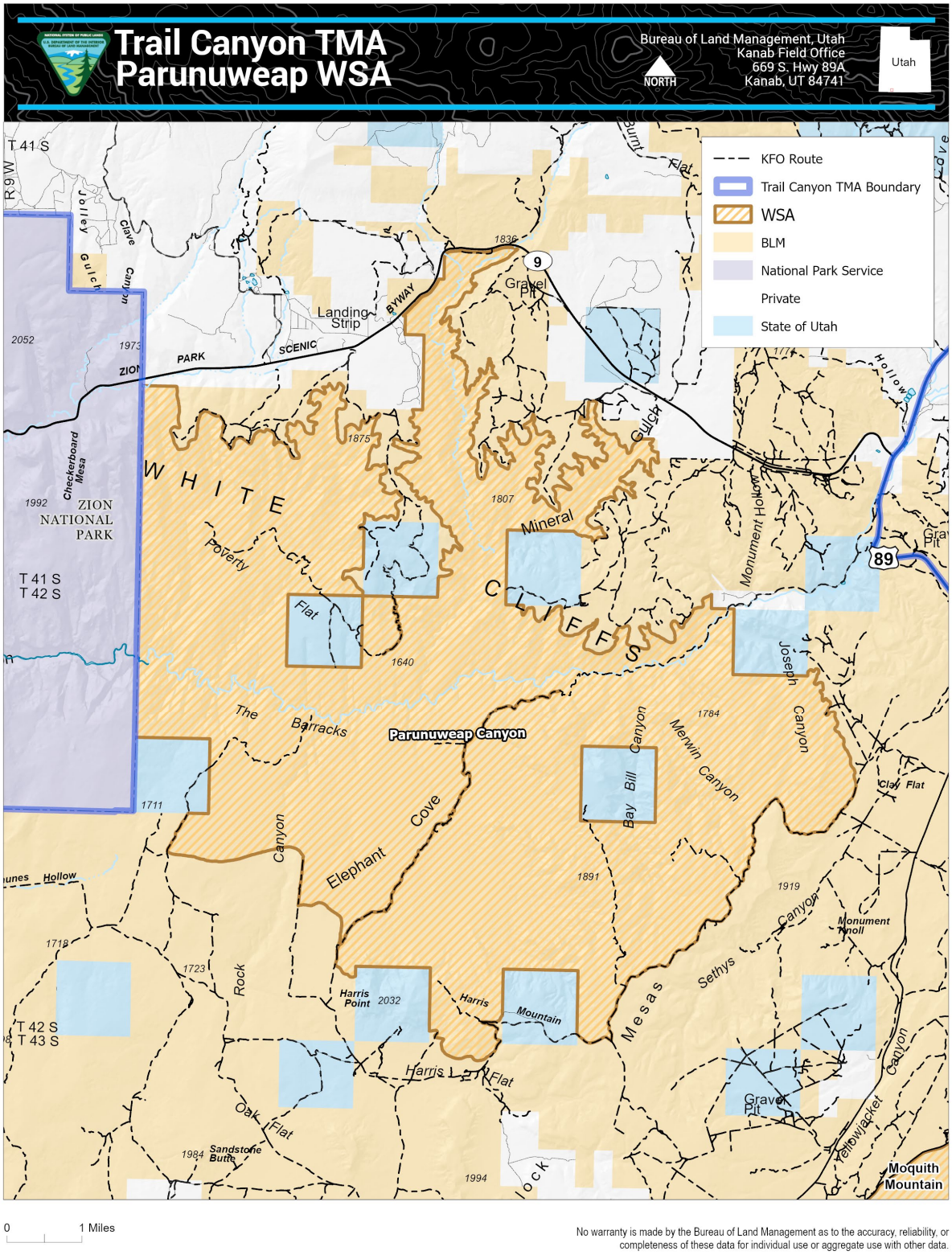
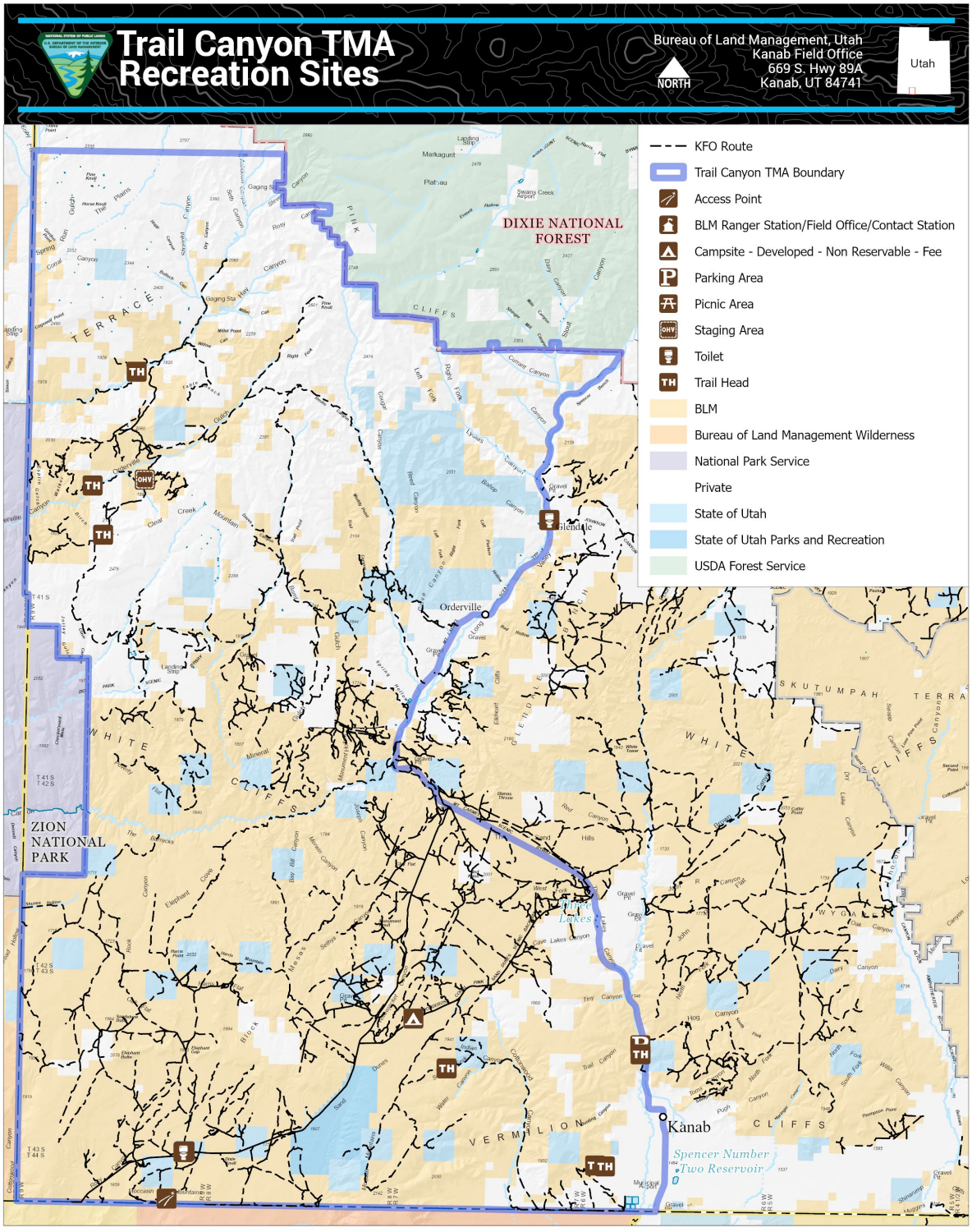
## C.35 Map 35: North Fork Virgin River and Orderville Canyon WSAs



## C.36 Map 36: Parunuweap Canyon WSA



## C.37 Map 37: Recreation Sites



# D. Appendix D: Route Reports

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

For each route, the IDT also considered and addressed the 43 CFR § 8342.1 Designation Criteria, selecting applicable rationale demonstrating how the route would minimize impacts for each of the route's preliminary alternative designations. The process resulted in extremely thorough data capture, produced a preliminary range of reasonable designation alternatives for each route based on the alternative themes, and created a complete record of the process as documented in the route reports. The full collection of route reports is available on the projects ePlanning webpage. Route reports provide a record of the IDT's evaluation of each route. The header of each page of a route report displays the number that was used to identify the route during evaluation (e.g., 92X). The number placed on published maps and used on route signs may not be the same. Each route report includes three sections: "General Background," "Evaluation Information," and "Designation Alternatives."

Disclaimer: Not all route reports will match perfectly with the analysis work completed in the Environmental Assessment (EA). Route reports are how BLM documented its process for reviewing routes on a route-by-route basis using the best data available at the time of evaluation. Since the original evaluations, new resource inventories have been completed and improved GIS layers have also been developed. BLM again chose to use the most current and best available data for the resource analysis work. Because of this situation and time gap, there may be some discrepancies between the route forms and the EA. BLM has attempted updating the route forms periodically but recognizes that some mistakes may still be present. When a discrepancy is found between the EA/GIS layers and the route forms, what is said in the EA and most recent GIS layers will supersede.

## D.1 General Background

The first part of the "General Background" section of a route report shows the route's evaluation session date, the name of the session's contracted facilitator (in this case, planners working for BLM's contractor), and the BLM resource specialists (biologists, archaeologists, recreation planners, etc.) responsible for evaluation of the route. The second part of the "General Background" section provides physical information about the route such as length, width, route class, use, jurisdictions over which it passes, and origin (if known). This section also discloses the level of maintenance a route receives, if any. Routes that are noted as *bladed* or *regularly maintained* are likely to see a higher level of use and, because they are bladed and tend to be wider as a result of routine blading, minimize the need for vehicles to travel off-route for the purposes of passing or parking. Routes that are *minimally* (i.e., *infrequently*) *maintained* or for which no maintenance is recorded in the route report may occasionally receive light maintenance but tend to be narrower user-created two-track type routes. The route class identified by the IDT (*road*, *primitive road*, or *trail* as defined by Manual 1626 – Travel and Transportation Management Manual) also helps define how the BLM would manage or maintain that specific route. Other information may also be included along with citizen comments and proposals, as applicable.

## D.2 Designation Alternatives

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

For Open and Limited designations, "w/ Management" indicates that there are types of limitations, and that there would be adaptive management or other specific mitigation, maintenance, and/or monitoring that was identified during evaluation. The "w/ Management" portion of Limited and Open designation labels are route specific; it is not used in designation labels found earlier in this document. Limited alternatives include specific limitations regarding route use (e.g., limited by season, vehicle width, etc.). For Closed alternatives, information is provided about how routes would be closed/decommissioned. Also, if a route is redundant to another route, that is specified.

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

## E. Appendix E: Implementation Guide

Kanab Field Office
669 S. Hwy 89A
Kanab, UT 84741
Phone: 435-644-1200

## E.1 Introduction

This document, the TMP Implementation Guide (Guide), discusses the steps to be taken after the BLM adopts the new TMP. These include:

- Conduct education and outreach.
- Install signs.
- Maintain routes as appropriate.
- Enforce the TMP.
- Monitor effects.
- Reclaim routes as appropriate.

Implementation timing is subject to available staff and funding. Grants, new appropriations, partnerships, and volunteers may be used to supplement budgets and workforce when possible.

Cultural site treatments will be implemented as identified in the Historic Properties Treatment Plan (HPTP). Thirty-two sites were identified as potentially subject to adverse effects, which the BLM plans to resolve by implementing administrative, indirect, and direct protective measures to avoid, minimize, or mitigate the effects following standard BLM policies. The BLM completed consultation on the HPTP by working with identified Section 106 consulting parties and tribes and received concurrence from the Utah State Historic Preservation Office. Site treatments to be implemented will include regular monitoring of 10 sites, 7 route closures, up to 8 minor reroutes to avoid sites, disassembly of modern campfire rings from within 4 sites, installation of signs (regulatory, protective, directional, and administrative) at 11 sites, installation of protective barriers at 11 sites, and 7 professional site recordings. These site treatments will be implemented over the next three to five years. The above numbers are based on current situations in the field; in the event that factors change on the ground throughout the implementation process, minor adaptive management may occur to best address the issues as observed on the ground.

## E.2 Education and Outreach

The objectives of education and outreach for the TMP are to attain voluntary public compliance with the designations. Additionally, education and outreach will target messages and themes such as respect of public lands and public lands users, resource protection and outdoor ethics, safe travel practices, prevention of wildfires, and prevention of spread of invasive species. The BLM will develop education and outreach materials specific to the TMP. Potential methods of education and outreach include:

- Kiosks and interpretive signage
- News releases and social media posts
- Brochures and guides
- BLM maps (hard copy and georeferenced)
- Commercial maps (e.g., National Geographic and Latitude 40)
- Signs (see Section E.3 in this appendix)
- Visitor center displays
- In-person public presentations
- Website/electronic media distribution (e.g., ArcGIS Online map server, Google Earth keyhole markup language (KML) and keyhole markup language zipped (KMZ) files, and universal global positioning system (GPS).
- Social media
- Partnerships with a broad range of local, county, state, tribal, and federal agencies, as well as service-oriented volunteers, schools, and non-governmental organizations (e.g., Tread Lightly! Inc. and Leave No Trace education and outreach resources).

Policy for education and outreach on BLM lands can be found in the BLM's 1996 Volunteer Manual (BLM 1996), Travel and Transportation Management Handbook (BLM 2012a), Sign Handbook (BLM 2016a), and Sign Manual (BLM 2004c).

## E.3 Sign Installation

The objectives of sign installation are to make the route network obvious, to promote the health and safety of visitors to public lands, meet visitor needs for information and direction, and reduce user or management issues. As determined necessary based on professional judgement, the BLM will place TMP signs at route intersections, periodically along the route, at route ends, at route closures, and in areas of resource or user issues. Sign categories that may be installed include identification, guide (navigation), informational, traffic control devices, regulatory/warning/safety, and miscellaneous (e.g., temporary, special event, etc.) (BLM 2016a). To limit the number of markers at an intersection, two routes may be identified on one post using arrow symbols and using both sides of the double-sided fiberglass posts.

Signs will be updated, repaired, or replaced as soon as possible; signs that are found to be unnecessary will be removed. This TMP would authorize the installation of signs including sign posts and kiosks in previously disturbed areas and adjacent to the road, as long as within the NHPA section 106 and ESA section 7 clearances that associated with this TMP. The sign types may include directional, portal, and informational. The BLM will use the minimum necessary sign type to achieve route clarity. The BLM will prioritize placing signs:

- In areas with public health and safety concern
- At entrances to and boundaries of areas of national significance (e.g., national parks, national recreation areas, designated wilderness areas, etc.)
- At areas of high recreational use or where it may enhance visitor experience and convenience (e.g., recreation sites, trailheads, backcountry byways, etc.)
- Where route use limitations exist (e.g., limited to a vehicle type, route closed to public motorized use, etc.)
- Where users may become confused about the direction, terminus, designation, or alignment of the route
- Where resource conflicts may occur (e.g., routes through special status species habitats)

Route-specific signing will occur as shown in Table 25 if the routes are designated for OHV use as resources and priorities allow.

**Table 25: Route-Specific Signing**

| Route Number | Signing Description |
|---|---|
| 10B | Signing – Regulatory[17] |
| 10D | Signing – Regulatory |
| 10G | Signing – Regulatory |
| 14B | Signing – Regulatory |
| 17 | Signing – Regulatory |
| 17B | Signing – Regulatory |
| 18 | Signing – Regulatory |
| 18WSA | Signing – Regulatory |
| 20H | Signing – Regulatory |

[17] Regulatory: refers to something related to the rules, laws, or guidelines established by authorities to control or govern conduct or processes within carious sectors, such as finance, healthcare, environmental protection, and more. Regulatory measures aim to ensure compliance, maintain standards, protect public interests, and promote fairness and safety.

| Route Number | Signing Description |
|---|---|
| 20M | Signing – Regulatory |
| 20Q | Signing – Regulatory |
| 20R | Signing – Regulatory |
| 20WSA | Signing – Directional, Regulatory |
| 28 | Signing – Regulatory |
| 28B | Signing – Regulatory |
| 28H | Signing – Regulatory |
| 28L | Signing – Directional, Regulatory |
| 28WSA | Signing – Regulatory |
| 30 | Signing – Regulatory, Interpretive |
| 30Z | Signing – Interpretive, Regulatory |
| 32 | Signing – Regulatory |
| 32CC | Signing – Safety, Directional |
| 32G | Signing – Regulatory |
| 32H | Signing – Directional, Regulatory |
| 32X | Signing – Regulatory |
| 32Z | Signing – Regulatory |
| 34A | Signing – Regulatory |
| 36 | Signing – Regulatory |
| 40Q | Signing – Regulatory |
| 40U | Signing – Regulatory |
| 40V | Signing – Regulatory |
| 41C | Signing – Directional, Regulatory |
| 45D | Signing – Regulatory |
| 46K | Signing – Regulatory |
| 50 | Signing – Regulatory |
| 50B | Signing – Regulatory |
| 51 | Signing – Regulatory |
| 52 | Signing – Regulatory |
| 53 | Signing – Regulatory |
| 57E | Signing – Regulatory |
| 60B | Signing – Regulatory |
| 66P | Signing – Regulatory |
| 66Q | Signing – Regulatory |
| 66R | Signing – Regulatory |
| 70 | Signing – Regulatory, Directional |
| 70A | Signing – Regulatory |
| 70C | Signing – Regulatory |
| 70WSA | Signing – Regulatory |
| 71 | Signing – Regulatory |
| 71B | Signing – Regulatory |
| 71E | Signing – Regulatory |

| Route Number | Signing Description |
|---|---|
| 71F | Signing – Regulatory |
| 71N | Signing – Regulatory |
| 72 | Signing – Regulatory |
| 72D | Signing – Regulatory |
| 72E | Signing – Regulatory |
| 73A | Signing – Regulatory |
| 73B | Signing – Regulatory |
| 73H | Signing – Regulatory |
| 73M | Signing – Regulatory |
| 91 | Signing – Regulatory |
| 91A | Signing – Regulatory |
| 91DNA | Signing – Regulatory |
| 91NA | Signing – Regulatory |
| 92L | Signing – Regulatory |
| 92X | Signing – Regulatory |
| 92Y | Signing – Regulatory |
| 93 | Signing – Regulatory |
| 93NA | Signing – Regulatory |
| 98 | Signing – Regulatory |
| 98A | Signing – Regulatory |
| 98B | Signing – Regulatory |
| HC1 | Signing – Regulatory |
| TC1008 | Signing – Directional, Regulatory |
| TC1009 | Signing – Regulatory |
| TC1011 | Signing – Directional, Regulatory |
| TC1018 | Signing – Directional, Regulatory |
| TC1019 | Signing – Regulatory |
| TC1031 | Signing – Regulatory |
| TC1032 | Signing – Regulatory |
| TC1033 | Signing – Regulatory |
| TC1034 | Signing – Regulatory |
| TC1037 | Signing – Regulatory |

Policy for signs on BLM lands (installation, ordering, etc.) can be found in the BLM's 2016 National Sign Handbook (BLM 2016a) and the Federal Highway Administration's Manual on Uniform Traffic Control Devices (FHWA 2019). Policies for sign design, use, and location are also included in the BLM's Roads Manual (BLM 2015a), Primitive Roads Manual (BLM 2012d), Sign Manual (BLM 2004c), and Travel and Transportation Management Handbook (BLM 2012a).

## E.4 Maintenance

The objective of maintenance under the TMP is to ensure safety and navigability for designated routes without changing the class, character, function, or recreational experience of the route. The BLM will

maintain the routes[18] at an intensity level appropriate for the route. For example, the routes receiving the heaviest use are the routes subject to level 5 maintenance intensity (see Table 26).

**Table 26: Maintenance Intensities Under the Chosen Alternative**

| Maintenance Intensity[19] | 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 or access adjacent lands and resource values. These roads may be impassable for extended periods of time. |
| Level 3 | Routes requiring moderate maintenance due to low volume use (for example, seasonally or year-round for commercial, recreational, or administrative access). Maintenance intensities may not provide year-round access but are intended to generally provide resources appropriate to keep the route in use for the majority of the year. |
| Level 5 | Routes for high (maximum) maintenance because of year-round needs, high-volume traffic, or significant use. May also include routes identified through management objectives as requiring high intensities of maintenance or to be maintained open year-round. |

In the route reports, the BLM specified route classes for all routes. The classes include:

- Road: managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use (BLM 2012a).
- Primitive Road: managed for use by four-wheel drive or high-clearance vehicles, but do not meet any BLM road design standards (BLM 2012a).
- Trail: managed for human-powered, stock, or off-road vehicle forms of transportation, or for historical or heritage values, not generally managed for use by four-wheel drive or high-clearance vehicles (BLM 2012a).
- Wilderness Inventory Road: improved and maintained by mechanical means to ensure relatively regular and continuous use (BLM 2024).
- Primitive Route: transportation linear feature located within a WSA, or lands with wilderness characteristics designated for protection by a land use plan, and not meeting the wilderness inventory road definition (BLM 2012a).

Policy for road maintenance on BLM lands can be found in the BLM's Manual 9113 – Roads (BLM 2015a), Handbook H-9113-2 – Roads Inventory and Condition Assessment Guidance & Instructions (BLM 2015b), and Handbook H-9115-2 – Primitive Roads Inventory and Condition Assessment Guidance & Instructions (BLM 2012b).

Route-specific maintenance will occur as shown in Table 27 if the routes are designated OHV-Open.

[18] Some routes in the TMP are subject to maintenance by authorized users in accordance with their authorizations (e.g., county roads, mine roads, and utility maintenance roads). They also must maintain the route at an intensity level consistent with their authorization.

[19] Maintenance Intensity levels 1 and 4 are "reserved for possible future use" and do not have associated descriptions.

**Table 27: Route-Specific Maintenance**

| Route Number | Maintenance Description |
|---|---|
| 10G | Repair barricades at WSA boundary |
| 10G | Repair barricades |
| 17B | Repair barricades at WSA boundary |
| 20M | Repair barricades at WSA boundary |
| 32CC | Formalize campsites |
| 50 | Continue to maintain existing fencing |
| 51 | Continue to maintain existing fencing |
| TC1031 | Harden stream crossing |

## E.5 Enforcement

The objective of enforcement under the TMP is to provide user safety and respond to use issues (e.g., user conflicts, resource concerns, etc.). The BLM will conduct routine, highly visible patrols by BLM staff to maintain an effective authoritative presence in the field. Personnel from partner agencies, such as the Utah Division of Wildlife Resources (UDWR), Kane County Sheriff's Department, and the Utah Highway Patrol may also supplement enforcement operations. The BLM will prioritize patrols:

- In areas with public health and safety concern
- At entrances to and boundaries of areas of national significance (e.g., national parks, designated wilderness areas, etc.)
- At areas or times of high recreational use or where it may enhance visitor experience and convenience (e.g., recreation sites, trailheads, backcountry byways, etc.)
- Where route use limitations exist (e.g., limited to a vehicle type, route closed to public motorized use, etc.)
- Where users may become confused about the direction, terminus, designation, or alignment of the route
- Where resource conflicts may occur (e.g., routes through special status species habitats)
- Routes identified for monitoring (see Table 28 below)

Regulations for enforcement are described in 43 CFR Subpart 8340, 43 CFR Subpart 8360, and 43 CFR § 9268.3. They may be supplemented as deemed necessary by Supplementary Rules, which may be established pursuant 43 CFR § 8360 under a separate action to implement use restrictions identified in RMP decisions. Policy for enforcement is found in Travel and Transportation Management Handbook (BLM 2012a).

## E.6 Monitoring

Monitoring will minimize impacts and user conflicts by ensuring that desired outcomes and conditions are achieved and documenting how the decision affects resources over time. The BLM will conduct ad-hoc and strategic monitoring using staff, volunteers, users, and partners as time and funding permit. Ad-hoc monitoring occurs when BLM staff or the public report any observed issues to the appropriate resource staff (Field Manager, Assistant Field Manager, Outdoor Recreation Planner, Field Technician, etc.). Strategic monitoring occurs when BLM-staff or partners checks implementation of requirements from the TMP (for example, from the Trail Canyon Baseline Monitoring Report, Biological Opinion, HPTP, or specific route

evaluation reports). When monitoring identifies issues, the BLM will address the issues identified at that time. The monitoring program will be used to determine:

- If resource protection and resource use objectives are being met.
- If the plan addresses visitor satisfaction, use patterns, use volumes, and other needs.
- The condition of the routes and compliance with route designations and use restrictions.

TMP monitoring priorities include:

- Areas with public health and safety concern
- Entrances to and boundaries of areas of national significance (e.g., national monuments, designated wilderness areas, etc.)
- Areas or times of high recreational use or where it may enhance visitor experience and convenience (e.g., recreation sites, trailheads, backcountry byways, etc.)
- Where route use limitations exist (e.g., limited to a vehicle type, route closed to public motorized use, etc.)
- Where resource conflicts may occur (e.g., routes through special status species habitats, riparian area, or areas with LWC)
- Closed and reclaimed routes

**Table 28: Route-Specific Monitoring**

| Route Number | Issues for Monitoring |
|---|---|
| 10B | Route proliferation |
| 10D | Route proliferation |
| 10G | Route proliferation |
| 14B | Route proliferation |
| 17 | Condition of wilderness characteristics within the WSA; route proliferation |
| 17B | Condition of wilderness characteristics within the WSA; route proliferation |
| 18 | Condition of wilderness characteristics within the WSA; route proliferation |
| 18WSA | Route proliferation |
| 20H | Litter / dumping; route proliferation |
| 20M | Condition of wilderness characteristics within the WSA,;route proliferation |
| 20Q | Condition of wilderness characteristics within the WSA; route proliferation |
| 20R | Litter / dumping; route proliferation |
| 20WSA | Route proliferation |
| 28 | Condition of wilderness characteristics within the WSA; route proliferation |
| 28B | Condition of wilderness characteristics within the LWC; route proliferation |
| 28L | Route proliferation |
| 28WSA | Condition of wilderness characteristics within the WSA; route proliferation |
| 30 | Route proliferation |
| 30Z | Route proliferation |
| 32 | Condition of wilderness characteristics within the WSA; route proliferation |
| 32G | Condition of wilderness characteristics within the WSA; route proliferation |
| 32H | Route proliferation |
| 32Z | Condition of wilderness characteristics within the WSA; route proliferation |
| 34A | Route proliferation |
| 36 | Route proliferation |

| | |
|---|---|
| 37 | Route proliferation |
| 40Q | Route proliferation |
| 40U | Route proliferation |
| 40V | Route proliferation |
| 41C | Route proliferation |
| 45D | Route proliferation |
| 46K | Route proliferation |
| 50 | Condition of wilderness characteristics within the WSA; litter/dumping; route proliferation |
| 50B | Route proliferation |
| 51 | Route proliferation; soil erosion |
| 52 | Route proliferation |
| 53 | Condition of wilderness characteristics within the WSA; route proliferation |
| 57E | Route proliferation |
| 60B | Route proliferation |
| 66R | Route proliferation |
| 70 | Condition of wilderness characteristics within the Natural Area; route proliferation |
| 70A | Condition of wilderness characteristics within the LWC; litter/dumping; route proliferation |
| 70C | Condition of wilderness characteristics within the LWC; route proliferation |
| 70D | Condition of wilderness characteristics within the WSA and LWC |
| 70F | Condition of wilderness characteristics within the WSA and LWC |
| 70K | Condition of wilderness characteristics within the LWC |
| 70WSA | Route proliferation |
| 71 | Route proliferation |
| 71B | Litter / dumping; site expansion; route proliferation |
| 71E | Route proliferation |
| 71N | Condition of wilderness characteristics within the WSA; route proliferation |
| 72 | Route proliferation |
| 72D | Condition of wilderness characteristics within the LWC; route proliferation |
| 72E | Route proliferation |
| 73A | Route proliferation |
| 73B | Route proliferation |
| 73H | Route proliferation |
| 73M | Condition of wilderness characteristics within the LWC; route proliferation |
| 73Q | Condition of wilderness characteristics within the LWC |
| 91 | Condition of wilderness characteristics within the Natural Area; route proliferation |
| 91A | Condition of wilderness characteristics within the WSA and Natural Area; route proliferation |
| 92X | Condition of wilderness characteristics within the WSA and Natural Area; route proliferation |
| 92Y | Condition of wilderness characteristics within the Natural Area; route proliferation |
| 93 | Condition of wilderness characteristics within the Natural Area; route proliferation |
| 93NA | Condition of wilderness characteristics within the Natural Area; route proliferation |
| 98 | Route proliferation |
| 98A | Litter / dumping; route proliferation |
| 98B | Route proliferation |

| | |
|---|---|
| HC1 | Condition of wilderness characteristics within the Natural Area; route proliferation |
| TC0013 | Route proliferation |
| TC0022 | Changes in levels of use |
| TC0059 | Litter / dumping |
| TC1008 | Route proliferation |
| TC1009 | Route proliferation |
| TC1018 | Route proliferation |
| TC1019 | Route proliferation |
| TC1031 | Route proliferation |
| TC1032 | Litter / dumping; route proliferation |
| TC1033 | Litter / dumping; route proliferation |
| TC1034 | Litter / Dumping |
| TC1037 | Condition of wilderness characteristics within the Natural Area; noxious weeds; route proliferation |

Regulations for TMP Monitoring is contained in 43 CFR § 8342.3. Policy for Travel Management Monitoring, BLM's Travel and Transportation Management Manual (BLM 2016b), and Appendix 15 in the 2008 RMP (see Table 29).

**Table 29: 2008 RMP Travel Management-Related Monitoring Methodologies**

| Resource | Methodologies |
|---|---|
| Transportation | 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.<br><br>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.<br><br>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.<br><br>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. |
| Recreation | Monitoring of recreation resources will continue to occur throughout the planning area with emphasis placed on developed recreation sites and Special Recreation Management Areas. Monitoring will include regular patrols of these areas to check on signing, visitor use, recreation use-related impacts, and user conflicts. Additionally, monitoring will include identification and inspection of undeveloped areas where there may be problems with compliance with rules and regulations resulting in user conflicts and/or resource damage.<br><br>Actual visitor and/or vehicle counts will be documented at all developed recreation sites and SRMAs as those sites and areas are visited. Monitoring will also use visitor surveys, traffic counters, and surveillance at developed recreation sites, documentation of user conflicts, and photo documentation of the changes in resource conditions over time. Monitoring may also include collection of data from visitor comments and complaints, or information request calls or |

| Resource | Methodologies |
|---|---|
| | emails. Monitoring data will be used to manage visitor use, develop plans and projects to reduce visitor impacts, and to provide appropriate facility or transportation system design.<br><br>Special Recreation Permits (SRPs) issued to commercial operators or for competitive events will be monitored for compliance with permit terms, conditions and special stipulations, as well as administrative and post-use requirements. Field monitoring will focus on visitation levels and compliance with rules, regulations, and permit stipulations for specific sites, dispersed uses, and prescribed standards and guidelines.<br><br>Average visitor use numbers for developed recreation sites and SRMAs will be reported in the BLM's Recreation Management Information System (RMIS) to track visitor use and recreation use trends over time. The number of recreation area management plans prepared and special recreation permits (SRPs) issued will also be reported annually in RMIS. |

## E.7 Route Reclamation

The objective of reclamation is to discontinue use of a route and allow it to return to a natural state. An OHV-Closed designation does not automatically mean that a route will be actively reclaimed because, for example, the route may still be needed by authorized users or for authorized uses. The TMP does not identify any route-specific reclamation strategies. Route-specific reclamation strategies route will be identified in the future by BLM resource specialists consistent with BLM policies and may require further site-specific NEPA analysis, as appropriate. When reclaiming routes, the BLM will use the minimum necessary reclamation technique to achieve reclamation. BLM will inform Kane County before any county-classified roads are reclaimed.

Reclamation techniques include but are not limited to:

- Natural reclamation, where the route would revegetation naturally. This level of reclamation may also include installation of "route closed" or other information signs. In some cases, mechanical tools such as shovels, rakes, and other hand tools may be employed to obliterate tracks, embankments, ruts, water bars and ditches.
- Disguising routes with natural materials, sometimes referred to as "vertical mulching", where the BLM would place rocks, dead wood and plants in light-of-sight along the route in a natural-looking arrangement). In some cases, mechanical tools such as shovels, rakes, and other hand tools may be employed to obliterate tracks, embankments, ruts, water bars and ditches.
- Barrier installation where the BLM would install natural or human-made barriers such as large boulders or fences with gates to physically prevent unauthorized use. Where possible and practical, these measures may be removed when routes are reclaimed or fully disguised.
- Ripping and reseeding routes, where the BLM mechanically breaks up the route and reseeds it using heavy equipment (e.g., excavators, bulldozers, or harrow or seed drills. Herbicides may also be used for revegetation. Reseeding within wilderness should use predominately native seed mixes. New surface disturbance outside the route footprint is not authorized through the TMP.

As with maintenance activities, ground disturbance might extend into areas not previously disturbed, which would require additional site-specific analysis.

To minimize impacts and user conflicts, reclamation effort priorities in include:

- Routes that pose a public safety hazard
- Routes leading into a designated wilderness area or a BLM Natural Area
- Routes causing resource damage, or routes in areas with a high risk for potential impacts to resources such as special status species or their habitat, or any other resources requiring special management or protection

During the route evaluation process the most appropriate method of reclamation was identified for each route based on factors such as geography, topography, soils, hydrology, and vegetation, as well as management objectives, reclamation costs, modes and conditions of travel, recreation settings, and other factors. The BLM will compile a prioritized list of routes scheduled for reclamation including the reclamation method as prescribed by the TMP's 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 options. 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.

Reclamation standards:

If disruptive reclamation techniques are used in route reclamation, the standards below will be followed as applicable.

- Reclaimed routes will not alter natural hydrologic function and condition of the affected watershed (e.g., closed routes will not divert runoff from natural drainage patterns).
- Disturbed areas will be fully re-contoured and re-vegetated with BLM-approved seed mixtures or plantings.
- Seeding will occur where necessary to aid reclamation of closed routes. Broadcast seeding will occur prior to winter. Some areas should be fenced to prevent disturbance and allow for grazing rest during at least the first two growing seasons. This technique is typically used near main roads where camping or parking may occur.
- The BLM will use native material such as rock and large woody debris to the 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.
- Reclamation techniques for routes in designated wilderness and lands with wilderness characteristics will attempt to return the area to its original condition in the shortest amount of time.
- Weed and vegetation treatment control measures will be used as needed to promote re-vegetation with native plants, prevent any new weed establishment, and control existing weed sources.

Appendix 3 of the 2008 RMP contains stipulations for surface-disturbing activities, which may apply to some forms of intrusive route reclamation.

## F. Appendix F: Glossary

**Access:** The opportunity to approach, enter, and/or cross public lands. (BLM 2016b)

**Adaptive management:** A system of management practices based on clearly identified outcomes and monitoring to determine whether management actions are meeting desired outcomes; and, if not, facilitating management changes that will best ensure that outcomes are met or re-evaluated. Adaptive management recognizes that knowledge about natural resource systems is sometimes uncertain. (43 CFR 46.30 Definitions)

**Administrative use:** Travel-related access for official use by BLM employees and agency representatives during the course of their duties using whatever means is necessary. Access is for resource management and administrative purposes and may include fire suppression, cadastral surveys, permit compliance, law enforcement, and resource monitoring or other access needed to administer BLM-managed lands or uses. (BLM 2016b)

**All-terrain vehicle (ATV):** A motorized, wheeled vehicle other than a snowmobile, which is defined as having a wheelbase and chassis of 50 inches in width or less, handlebars for steering, generally a dry weight of 800 pounds or less, three or more low-pressure tires, and a seat designed to be straddled by the operator. (BLM 2012a)

**Alternatives:** Other options to the proposed action by which the BLM can meet its purpose and need. The BLM is directed by the NEPA (§ 102(2)(H)) to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.…"

**Asset:** A non-building facility and transportation construction, which include roads, primitive roads, and trails that are included in FAMS. The BLM maintains assets through the annual and deferred maintenance programs. (BLM 2016b)

**Authorized use:** Travel-related access for users authorized by the BLM or otherwise officially approved. Access may include motorized access for permittees, lessees or other authorized users, along with approved access across BLM-administered public lands for other state and federal agencies. (BLM 2016b)

**Categorical Exclusion:** A category of actions that the agency has determined, in its agency NEPA procedures, normally do not have a significant effect on the human environment (40 CFR 1508.1). A categorical exclusion is a form of NEPA compliance, without the analysis that occurs in an EA or an EIS. It is not an exemption from the NEPA (DOI 2026).

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

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

(b) have been designated as county roads; or

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

**Class D route:** As stated in Utah Code, "any road, way, or other land surface route that has been or is established by use or constructed and has been maintained to provide for usage by the public for vehicles with four or more wheels that is not a class A, class B, or class C road" (Utah Code 72-3-105).

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

**Cooperating agency:** Assists the lead Federal agency in developing an environmental assessment or environmental impact statement. These can be any agencies with jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any tribal, Federal, State, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency. (DOI 2026)

**Critical habitat:** An area occupied by a Threatened or Endangered species on which are found physical and biological features that are (1) essential to the conservation of the species, and (2) may require special management considerations or protection. (16 USC 1532(5))

**Cultural resource:** A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. They may be but are not necessarily eligible for the National Register of Historic Places (NRHP). (BLM 2004a)

**Cultural resource inventory classes:**

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

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

Class III - intensive field survey: a continuous, intensive survey of an entire target area, aimed at locating and recording all archaeological properties that have surface indications, by walking close-interval parallel transects until the area has been thoroughly

examined. Class III methods vary geographically, conforming to the prevailing standards for the region involved. (BLM 2004a)

**Decision Record:** The BLM document associated with an EA that describes the action to be taken when the analysis supports a finding of no significant impact. (DOI 2026)

**Decommission:** The process of removing travel routes (i.e., transportation linear features) that are unauthorized or no longer needed. Transportation linear features that are not part of the defined travel route network or transportation system are transportation linear disturbances. The process for decommissioning routes may include site-specific reclamation actions, natural revegetation, or a toolset to complete reclamation should opportunities arise. Reclamation actions must be consistent with the goals and objectives for the area in which they occur. Reclamation can be passive or active. Linear features identified as transportation linear disturbances will remain in the national geospatial dataset until reclamation and subsequent monitoring is complete or all on-the-ground indications of the route have vanished. After that, the BLM will remove these features from the national ground transportation linear feature dataset(s) but store them in a secondary local dataset of decommissioned and reclaimed routes. (BLM 2016b)

**Designated routes:** Specific roads and trails identified by the BLM where some type of use is appropriate and allowed. Route designations are implementation decisions that govern OHV activities on routes. (BLM 2016b)

**Direct effect:** Caused by the action and occur at the same time and place (40 CFR 1508.8(a)).

**Easement:** An authorization for a non-possessory, non-exclusive interest in lands which specifies the rights of the holder and the obligation of the BLM to use and manage the lands in a manner consistent with the terms of the easement. (43 CFR 2920.05 Definitions)

**Electric-bicycle**: (also known as an e-bike) means a two- or three-wheeled cycle with fully operable pedals and an electric motor of not more than 750 watts (1 h.p.) that meets the requirements of one of the following three classes:

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

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

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

**Effect:** Changes to the human environment from the proposed action or action alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or action alternatives. (DOI 2026)

**Endangered species:** Any species which is in danger of extinction throughout all or a significant portion of its range. (16 USC 1532 Definition)

**Endangered Species Act (ESA):** The Endangered Species Act establishes protections for fish, wildlife, and plants that are listed as Threatened or Endangered; provides for adding species to and removing them from the list of Threatened and Endangered species, and for preparing and implementing plans for their recovery; provides for interagency cooperation to avoid take of listed species and for issuing permits for otherwise prohibited activities; provides for cooperation with States, including authorization of financial assistance; and implements the provisions of the Convention on International Trade in Endangered Species of Wild Flora and Fauna. (https://www.fws.gov/law/endangered-species-act)

**Environmental assessment (EA):** A concise public document that provides sufficient evidence and analysis for determining the significance of effects from a proposed action and that serves as a basis for reasoned choice. Based upon the EA analysis, either an EIS or a FONSI will be prepared. (DOI 2026)

**Environmental Impact Statement:** Federal agencies prepare an EIS if a proposed federal action will have a significant environmental impact (DOI 2026). The regulatory requirements for an EIS are more detailed and rigorous than the requirements for an EA.

**Erosion:** Detachment and movement of soil or rock fragments by water, wind, ice, gravity; the land surface worn away by running water, wind, ice, or other geological agents, including such processes as gravitational creep. (BLM 2020)

**Facility:** All or any portion of a building, structure, site improvement, element, pedestrian route, or vehicular way located on a site. An element is an architectural or mechanical component, generally including toilets, picnic tables, grills, registration kiosks, etc. at a site (including a staging site). (BLM 2016b)

**Facility Asset Management System (FAMS):** The BLM's official database for the management of transportation system assets and facilities. (BLM 2016b)

**Finding of No Significant Impact:** A finding that explains that an action will not have a significant effect on the environment and, therefore, an EIS will not be required. (DOI 2026)

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

**Geographic Information System (GIS):** "System designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. The key word to this technology is Geography – this means that some portion of the data is spatial. In other words, data that is in some way referenced to locations on the earth. Coupled with this data is usually tabular data known as attribute data. Attribute data can be generally defined as additional information about each of the spatial features. An example of this would be schools. The actual location of the schools is the spatial data. Additional data such as the school name, level of education taught, student capacity would make up the attribute data. It is the partnership of these two data types that enables GIS to be such an effective problem-solving tool through spatial analysis. GIS is more than just software. People and methods are

combined with geospatial software and tools, to enable spatial analysis, manage large datasets, and display information in a map/graphical form." (University of Wisconsin-Madison Libraries)

**Ground Transportation Linear Feature (GTLF):** A geospatial database of all transportation linear features (from motorized to foot use) as they exist on the ground, not just those in the BLM transportation system (refer to the Ground Transportation Linear Features Data Standard Report, October 22, 2014, version 2.0 or later, for detailed information on the GTLF data standard). (BLM 2016b)

**Hard look:** A reasoned analysis containing quantitative or detailed qualitative information. (DOI 2026)

**Historic property:** Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the NRHP criteria. (BLM 2004a)

**Impact:** See "effect."

**Impassable:** Roads intended for full-size vehicle passage that are otherwise impassable as a result of road deterioration or vegetation overgrowth; project-level road maintenance is required to make these roads passable. Road deterioration or vegetation overgrowth may be a result of neglect, irregular maintenance, or management decisions. (BLM 2014a)

**Implementation decisions:** Decisions that take action to implement land use planning; generally appealable to Interior Board of Land Appeals under 43 CFR 4.410 (BLM 2000). These decisions are generally more site-specific than land-use plan decisions.

**Implementation plan:** An area or site-specific plan written to implement decisions made in a land use plan. Implementation plans include both activity plans and project plans. (BLM 2000).

**Indirect effect:** Caused by the action and later in time or farther removed in distance, but still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on water and air and other natural systems, including ecosystems. (40 CFR 1508.8(b))

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

**Invasive plants:** Plant species that are typically not found on the ecological site or should only be in the trace or minor categories under the natural disturbance regime and have the potential to become a dominant or codominant species on the site if their establishment and growth are not actively controlled by natural disturbances or management interventions. (BLM 2020)

**Land use plan:** A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land-use-plan level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed (BLM 2000). The term includes both resource management plans (RMPs) and management framework plans (MFPs).

**Linear disturbance:** A human-made linear travel or transportation related disturbance that is not part of the BLM's transportation system or travel network. Transportation linear disturbances may include engineered (planned) but no longer needed features, as well as unplanned routes that have been identified for decommissioning and reclamation either passively or actively. Linear disturbances may also include permitted realty features (e.g., pipelines or power lines) that may or may not have travel routes maintained in association with them. (BLM 2012a, BLM 2016b)

**Linear feature:** Linear features represent the broadest category of physical disturbance (planned and unplanned) on BLM land. A linear feature is a linear ground disturbance that results from travel across or immediately over the surface of BLM-administered public lands. These features include engineered roads and trails, as well as user-defined, non-engineered routes, created as a result of public or unauthorized use. Linear features may also include permitted realty features (e.g., pipelines or power lines) that may or may not have travel routes maintained in association with them. (BLM 2012a, BLM 2016b)

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

**Mechanized travel:** Moving by means of mechanical devices not powered by a motor, such as a bicycle. (BLM 2016b)

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

**Minimize:** Limit the degree or magnitude of. (DOI 2026)

**Mitigation:** Measures that could reduce or avoid adverse impacts. Mitigation measures have not been incorporated into the proposed action or an alternative (DOI 2026). Mitigation can include: (a) avoiding the impact, (b) minimizing the impact, (c) rectifying (i.e., repairing, rehabilitating, or restoring) the impact (d) reducing or eliminating the impact through

operations during the life of the project, or (e) compensating by replacing or substituting resources (40 CFR 1508.20).

**Monitoring:** The process of tracking whether decisions were implemented as designed, their effectiveness in achieving desired outcomes, and the effectiveness of mitigation measures. Monitoring can also determine whether the impact analysis was accurate. (DOI 2026)

**Motorized vehicles:** Vehicles propelled by motors or engines, such as cars, trucks, off-highway vehicles, motorcycles, snowmobiles, and boats. (BLM 2016b)

**Multiple use:** The management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output. (43 USC 1702(c))

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

**National Register Status Definitions**:

- **Eligible:** Cultural resources recommended eligible for inclusion on the National Register of Historic Places (National Register, or those resources that express the quality of significance in American history, architecture, archeology, engineering, and culture and are represented as districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. To be recommended eligible the cultural resource must possess the relevant aspects of integrity and meet at least one of the following National Register Criteria:
    A. Associated with events that have made a significant contribution to the broad patterns of our history; or
    B. Associated with the lives of significant persons in our past; or
    C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
    D. Have yielded, or may be likely to yield, information important in prehistory or history.

  36 CFR Part 800 defines eligible cultural resources as “historic properties.”

- **Not eligible:** Cultural resources that do not meet the National Register Criteria or do not retain integrity.
- **Listed:** Cultural resources that are officially listed on the National Register.

**Native vegetation**: Species that historically occurred or currently occur in a particular ecosystem and were not introduced (BLM 2008a)

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

**Non-mechanized travel:** Moving by foot or by stock or pack animal. (BLM 2016b)

**Noxious weed:** Any plant designated by a federal, state, or county government to be injurious to public health, agriculture, recreation, wildlife, or any public or private property. (BLM 2020)

**Objective:** A description of a desired condition for a resource. Objectives can be quantified and measured and, where possible, have established time frames for achievement. (BLM 2000)

**Off-highway vehicle (OHV):** Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: 1) any non-amphibious registered motorboat; 2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; 3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; 4) vehicles in official use; and 5) any combat or combat support vehicle when used in times of national defense emergencies (as defined in 43 CFR 8340.0-5(a)). OHV is synonymous with off-road vehicle. (BLM 2016b)

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

- **OHV-Closed Areas:** An area where OHV use is prohibited. Access by means other than OHVs, such as by motorized vehicles that fall outside the definition of an OHV or by mechanized or non-mechanized means, is permitted. The BLM designates areas as closed, if necessary, to protect resources, promote visitor safety, or reduce user conflicts (see 43 CFR § 8340.0-5(h)).
- **OHV-Limited Areas:** An area where OHV use is restricted at certain times, in certain areas, and/or to certain vehicular use. Examples of restrictions include numbers or types of vehicles; time or season of use; permitted or licensed use only; use limited to existing, designated roads and trails; or other restrictions necessary to meet resource management objectives, including certain competitive or intensive use areas that have special limitations (43 CFR § 8340.0-5 (g)).
- **OHV-Open Areas:** A designated area where all types of OHV travel is permitted at all times, anywhere in the area subject only to the operating restrictions set forth in subparts 8341 without restriction (43 CFR § 8340.0-5(f)). Open area designations are made to achieve a specific recreational goal, objective and setting and are only used in areas

managed for intensive OHV activity where there are no special restrictions or where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel.

**Off-highway vehicle (OHV) route designations:** Implementation decisions that govern only OHV (43 CFR 8340.0-5(a)) activities on routes. The route designation is one of several decisions required to govern travel and transportation comprehensively. The BLM designates routes as open, limited, or closed, and the designation must be included in all route-specific decisions and recorded in the national ground transportation linear feature dataset(s). Definitions and the designation criteria used in this decision-making process stem from those provided for OHV areas in 43 CFR 8340.0-5(f), (g), and (h). (BLM 2016b)

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

**Primitive road:** A linear route managed for use by four-wheel drive or high-clearance vehicles. These routes do not customarily meet any BLM road design standards. Unless specifically prohibited, primitive roads can also include other uses such as hiking, biking, and horseback riding. (BLM 2016b)

**Primitive route (previously called "ways"):** Any transportation linear feature located within a WSA or lands with wilderness characteristics designated for protection by a land use plan and not meeting the wilderness inventory road definition. (BLM 2016b)

**Proper Functioning Condition (PFC):** PFC describes both the assessment method and a defined, on-the-ground condition of a riparian area. The on-the-ground condition termed PFC refers to how well physical processes are functioning. A lotic riparian area is considered to be in PFC, or "functioning properly," when adequate vegetation, landform, or woody material is present to:

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

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

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

**Record of Decision (ROD):** Decision document associated with an EIS (DOI 2026).

**Recreation Management Information System (RMIS):** The official BLM database for recording and tracking visitor use and acres with OHV area designations on BLM-managed lands; the BLM also uses it to track TMP completion and implementation. (BLM 2016b)

**Recreation Management Zone (RMZ):** Subunits within a SRMA managed for distinctly different recreation products. Recreation products are comprised of recreation opportunities, the natural resource and community settings within which they occur, and the administrative and service environment created by all affecting recreation-tourism providers, within which recreation participation occurs. (BLM 2005)

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

**Resource Management Plan (RMP):** (Also known as Land Use Plan or Management Framework Plan). A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of the Federal Land Policy and Management Act of 1976, as amended, P.L. 94-579, 90 Stat. 2743; an assimilation of land use plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. (DOI 2026)

**Restoration:** The process of assisting the recovery of a resource (including its values, services, and/or functions) that has been degraded, damaged, or destroyed to the condition that would have existed if the resource had not been degraded, damaged, or destroyed. (BLM 2021a)

**Right-of-way (ROW):** Authorization of rights and privileges for a specific use of the land for a specified period of time appropriate for the life of the project. The BLM has discretion to grant a ROW if doing so is in the public interest. (https://www.blm.gov/programs/lands-and-realty/rights-of-way)

**Rilling:** Shallow channeling from water that creates small, intermittent watercourses with steep sides, usually only several centimeters deep. Rills generally are linear erosion features running parallel to a slope. (BLM 2020)

**Riparian area:** A specialized form of wetland restricted to areas with characteristic vegetation along, adjacent to, or contiguous with perennially and intermittently flowing stream, lake, spring, and reservoir shore areas. Characteristic vegetation may range from hydrophilic

plants such as pondweed through more terrestrial forms such as sycamores, cottonwoods, conifers, and willows. This habitat is transitional between true bottomland wetlands and upland terrestrial habitats, and while associated with water courses, may extend inland for considerable distances. (BLM 1991a)

**Road:** A linear route declared a road by the owner, managed for use by low-clearance vehicles which have four or more wheels, and maintained for regular and continuous use. (BLM 2016b)

**Route:** Generic description for a component of the transportation system or travel network. (BLM 2016b)

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

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

**Route Inventory:** Collection of route data for maps (may also include collection of point data and photos) to inform the travel planning effort (BLM 2016b). Data may be collected in the field with GPS units or drawn on a computer screen from aerial imagery. The original route inventory as used in this EA refers to the first inventory created using a combination of previous travel plans, aerial photography, BLM and county GIS data, maps, and ground-truthing (i.e., driving routes on the ground). The evaluation route inventory refers to the routes remaining after removal of the non-route linear disturbances such as game trails, cattle trails, fence-lines, reclaimed historic routes (routes on old maps or aerial imagery that no longer exist on the ground), and seismic exploration scars. The public comment route inventory refers to the routes remaining after removal of the 375 miles of route that had no public purpose or need.

**Scoping (Internal and External):** Process by which the BLM solicits internal and external input on the issues and effects that will be addressed, as well as the degree to which those issues and effects will be analyzed, in the NEPA document. Scoping is one form of public involvement in the NEPA process. Scoping occurs early in the NEPA process and generally extends through the development of alternatives (the public comment periods for EIS review are not scoping). Internal scoping is simply federal or cooperator review to decide what needs to be analyzed in a NEPA document. External scoping, also known as formal scoping, involves notification and opportunities for feedback from other agencies, organizations, and the public. (DOI 2026)

**Sensitive Species:** Species that require special management consideration to avoid potential future listing under the ESA and that have been identified in accordance with procedures set forth in BLM Manual 6840 – Special Status Species Management. (BLM 2008a)

**Solitude:** The state of being alone or remote from others; isolation. A lonely or secluded place. Factors contributing to opportunities for solitude may include size, natural screening, topographic relief, vistas, physiographic variety, and the ability of the user to find a secluded spot. (BLM 2021b)

**Special recreation management area (SRMA):** An administrative unit where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance, or distinctiveness, especially compared to other areas used for recreation. (BLM 2014b)

**Special recreation permits (SRPs):** SRPs are issued to authorize specified and often time-restricted recreational uses of the public lands and related waters. The BLM issues SRPs to manage visitor use; to protect natural and cultural resources; to achieve the goals and objectives of Field Office recreation program as outlined in a land use plan; and to authorize specific types of recreational activities. There are five types of activities for which SRPs are required: commercial use, competitive use, vending, special area use, and organized group activity and event use. (BLM 2007)

**Special status species:** Collectively, federally listed or proposed and Bureau sensitive species, which include both Federal candidate species and delisted species within 5 years of delisting. (BLM 2008a)

**State Historic Preservation Officer (SHPO):** The State historic preservation officer (SHPO) reflects the interests of the State and its citizens in the preservation of their cultural heritage. In accordance with section 101(b)(3) of the National Historic Preservation Act, the SHPO advises and assists Federal agencies in carrying out their section 106 responsibilities and cooperates with such agencies, local governments and organizations and individuals to ensure that historic properties are taking into consideration at all levels of planning and development. (36 CFR 800.2)

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

**Threatened species:** Any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range. (16 USC 1532 Definitions)

**Traditional uses:** Longstanding, socially conveyed, customary patterns of thought, cultural expression, and behavior, such as religious beliefs and practices, social customs, and land or resource uses. Traditions are shared generally within a social and/or cultural group and span generations. (BLM 2004a)

**Trail:** A linear route managed for human-powered, stock, or off-road vehicle forms of transportation or for historical or heritage values. The BLM does not generally manage trails for use by four-wheel-drive or high-clearance vehicles. (BLM 2016b)

**Travel Management Area (TMA):** An administrative planning unit used to provide a strategic approach to inventory, planning, management, monitoring, and administration of the travel network, transportation system, and OHV use on public lands. TMAs can be used to separate areas with a different travel management focus from the larger planning area for a specific reason, such as the area's complexity or level of controversy, the need for a higher level of public involvement, consideration of special resource characteristics, or manageability of the area. A TMA's boundary may be altered as needed to reflect changes in priority, additional available resources, or any other change in circumstance. (BLM 2016b)

**Travel Management Plan (TMP):** A document that describes decisions related to the selection and management of a travel network and transportation system. (BLM 2016b)

**Travel network:** Routes occurring on public lands or within easements granted to the BLM that are recognized, designated, decided upon, or otherwise authorized for use through the planning process or other travel management decisions. These may or may not be part of the transportation system and may or may not be administered by the BLM. (BLM 2016b)

**Unevaluated (to the Natural Register):** A cultural site to which the NRHP eligibility criteria have not been applied. (BLM 2004a)

**Utility Terrain Vehicle (UTV):** Any recreational motor vehicle other than an ATV, motorbike or snowmobile designed for and capable of travel over designated unpaved roads, traveling on four (4) or more low-pressure tires, maximum width less than seventy-four (74) inches, usually a maximum weight less than two thousand (2,000) pounds, or having a wheelbase of ninety-four (94) inches or less. Utility type vehicle does not include vehicles specially designed to carry a person with disabilities. (BLM 2012a)

**Visual Resource Inventory (VRI):** The visual resource inventory process provides BLM managers with a means for determining visual values. The inventory consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes. These inventory classes represent the relative value of the visual resources. Classes I and II being the most valued, Class III representing a moderate value, and Class IV being of least value. The inventory classes provide the basis for considering visual values in the RMP process. (BLM 1986)

**Visual Resource Management (VRM):** The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives. (BLM 1984)

**Visual resources:** The visible physical features on a landscape, (topography, water, vegetation, animals, structures, and other features) that comprise the scenery of the area. (BLM 1984)

**Wetlands:** Areas that have a predominance of hydric soils and that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions. Marshes, shallows, swamps, muskegs, bogs, and wet meadows are examples of wetlands. (BLM 1991a)

**Wilderness characteristics:** These attributes include the area's size, its apparent naturalness, and outstanding opportunities for solitude or a primitive and unconfined type of recreation. They may also include supplemental values. Lands with wilderness characteristics are those lands that have been inventoried and determined by the BLM to contain wilderness characteristics as defined in section 2(c) of the Wilderness Act. (BLM 2021b)

**Wilderness Inventory Road:** Routes which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. (BLM 2021b)

## G. Appendix G: References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