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Johnson Hill Travel and Recreation Area Management Plan

Environmental Assessment

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Signature and Title of Project Lead — Date

Signature of Planning & Environmental Coordinator — Date

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1 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

The Bureau of Land Management (BLM) Socorro Field Office is developing a combined Travel Management and Recreation Area Management Plan. The Johnson Hill Travel and Recreation Plan will establish a comprehensive plan for managing travel and recreation on designated routes on lands managed by the BLM within the Johnson Hill Project Area (Project Area). The Project Area encompasses the Johnson Hill Special Recreation Management Area (SRMA; however, it also includes some routes that are exterior to the SRMA (see Map 1, below).

This project has been developed consistent with the long-term management direction for the Johnson Hill (Gordy's Hill) Special Recreation Management Area as prescribed in the 2010 Socorro Resource Management Plan (2010 RMP); and with careful consideration of recreation user interests and needs, and protection of the Project Area's natural and cultural resources.

The Travel and Recreation Area Management Plan provides for a comprehensive designated travel network of routes and trails for the Johnson Hill Project Area, and addresses access for recreational, traditional, casual, agricultural, commercial, and educational uses as well as access for resource management purposes. It considers all modes and conditions of travel on the SRMA's public lands, including Off-Highway Vehicles, bicycles, e-bikes, equestrian use, and foot travel. Though the term "Off-Highway Vehicle" is associated with off-road vehicles, in BLM planning, Off-Highway Vehicles, or OHVs, include full-size cars and trucks as well as utility terrain vehicles, all-terrain vehicles, motorcycles, e-bikes[1], etc., when in use by the general public on BLM public lands.

This Environmental Assessment is prepared in accordance with the National Environmental Policy Act (NEPA) and will assist the Socorro Field Manager in determining whether any "significant" impacts could result from implementing the project. Following a public review and the BLM making any necessary changes to the Environmental Assessment, if there are no significant impacts anticipated the BLM will prepare a Finding of No Significant Impact (and issue a signed Decision Record. The Decision Record documents the decision regarding the proposed route network that would be carried forward for this project. The Travel Management and Recreation Management Plans may then be implemented after the National Environmental Policy Act process is complete.

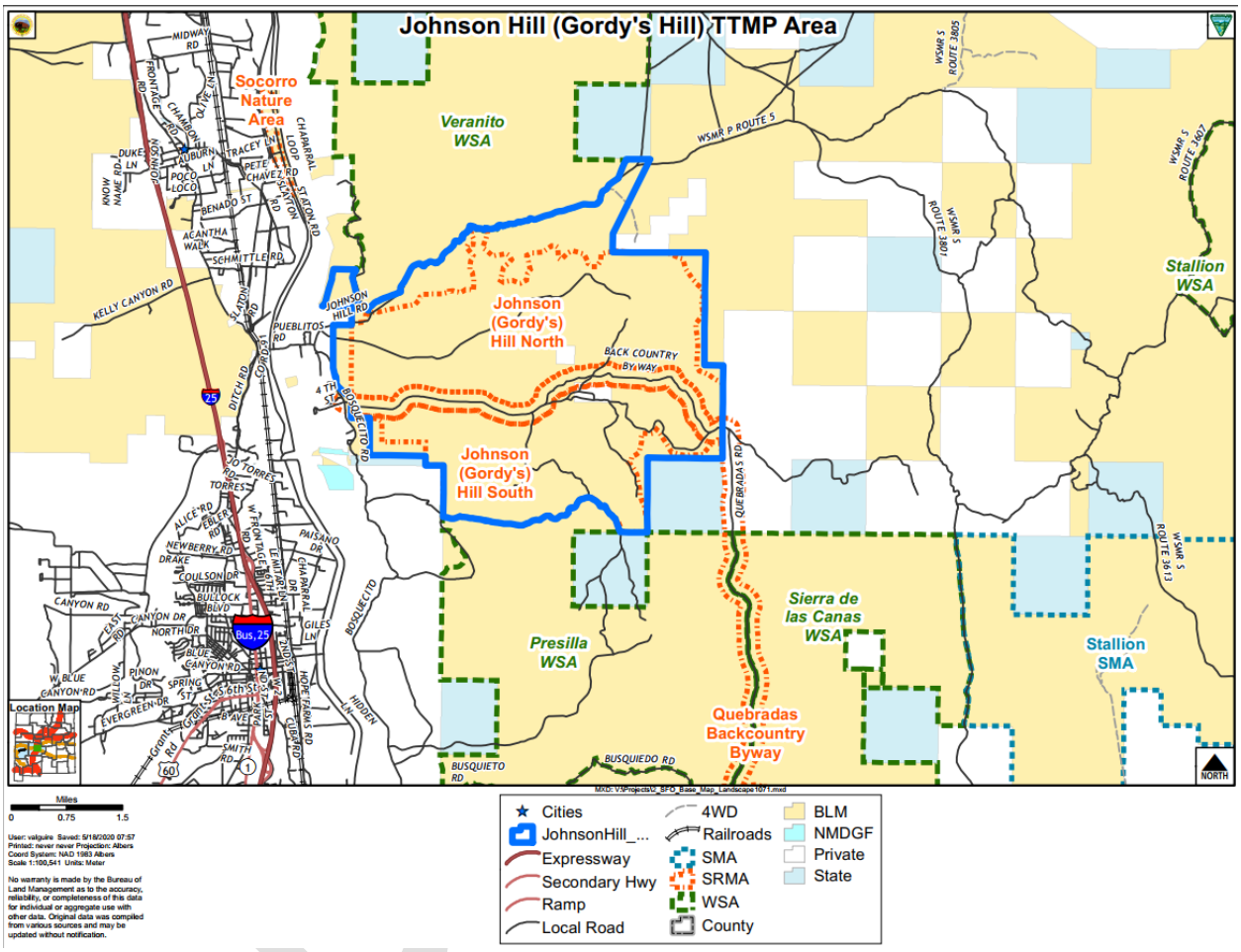
This Environmental Assessment analyzes a range of reasonable proposed travel route network alternatives' potential impacts on the Project Area's natural and human environment and is based on issues raised during internal and external scoping. The final travel network will be developed from the range of alternatives considered in this Environmental Assessment and may include the modification of an alternative or a combination of the alternatives.

[1] E-bikes are considered OHVs unless an authorized officer expressly determines, as part of a land-use planning or implementation-level decision, that e-bikes should be treated the same as non-motorized bicycles.

1.2 BACKGROUND AND OVERVIEW

The Socorro Field Office is preparing a combined Travel and Recreation Area Management Plan for the 10,514-acre Johnson Hill Project Area, located on the east side of the Rio Grande River north and east of Socorro, New Mexico to manage recreation and travel within the Project Area. Although the Project Area encompasses several land jurisdictions, only BLM public lands are subject to the management plan decisions resulting from this Environmental Assessment.

Map 1: Johnson Hill Travel Management Area



The Travel and Recreation Plan actions proposed and analyzed in this Environmental Assessment will be implemented following a Decision Record and in accordance with a standalone Implementation Guide available on this project's ePlanning page. The travel network route designations chosen for this project incorporate updated consideration and evaluation of all inventoried routes in the Project Area and will supersede any previous route designations assigned.

1.3 PURPOSE AND NEED

The 2010 RMP calls for the BLM to prepare Travel and Recreation Area Management Plans for five SRMAs, beginning with Johnson Hill (called Gordy's Hill in the 2010 RMP). This combined Travel and Recreation Area Management Plan will implement the resource management actions

for the Johnson Hill SRMA identified in the 2010 RMP. The purpose of this plan is to establish a framework that addresses current travel management and related recreation issues and improves existing recreation and OHV opportunities within the Project Area. This proposed Travel and Recreation Area Management Plan is comprehensive and will provide for implementation-level operation and management for recreation and travel within the Project Area through an attached Implementation Guide

Comprehensive route evaluation and designation has not previously been done for the Johnson Hill area. The 2010 RMP established designated travel networks in Wilderness Study Areas but deferred comprehensive travel planning outside Wilderness Study Areas to future activity-level plans. Johnson Hill is listed as a priority area for travel planning (p. 39). Thus, there is a need to develop and implement a Travel and Recreation Area Management Plan for managing OHV travel and transportation and recreation within the Project Area. The Travel and Recreation Area Management Plan will designate a travel network that provides for a variety of public motorized and non-motorized opportunities, addresses resource management needs and protections, while bringing recreation and travel and transportation management in the Project Area into conformance with the 2010 RMP.

1.4 BACKGROUND AND PROJECT AREA OVERVIEW

The Project Area, totaling 10,514 acres of BLM lands, is located on the east side of the Rio Grande River north and east of Socorro, New Mexico and within 5 miles of Interstate 25. Recreation use within the area, including special OHV events, has been increasing for years and is extensively OHV-based. With its many roads and trails traversing diverse topography, including deeply dissected canyons, high sandstone and limestone bluffs, terraces, and escarpments, the Project Area offers a variety of OHV recreation opportunities for all experience levels. Higher elevations within the Project Area offer scenic views of the Rio Grande Valley to the west. The area is bisected by the BLM-managed Quebradas Backcountry Byway SRMA, a national designation.

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

Table 1.1: Project Area Approximate Acreage by Major Landowner/Agency Jurisdiction

Jurisdiction	Acres	% of Project Area
BLM	10,514	99%
Private	120	1%
State	0.5	0.005%
Total	10,634	100%

1.5 CONFORMANCE WITH MANDATES

1.5.1 Land Use Plans

The action alternatives described in this document are subject to and conform with applicable management policies and guidance. The 2010 RMP provides specific overarching management

requirements and guidance for this Travel and Recreation Area Management planning effort, as documented in the following management goals and decisions from pages 29-31 and page 59:

> Management Goal (p. 29): Provide for a wide range of highly desirable recreation experiences commensurate with demand, both non-motorized and motorized, for visitor and community residents, while protecting other resource values. Manage recreational use to protect the health and safety of visitors and resolve user conflicts. Capitalize on the unique resources and diverse management situations of the Field Office by providing uncommon recreation opportunities and experiences.
>
> Management Decision (pp. 29-31, 59): Designate Gordy's Hill (Johnson Hill, 7,647 acres) – Manage for recreation uses, including OHV, races, and group events.
>
> 1. Limit motor vehicle use to designated routes.
> 2. Prepare Recreation Area Management Plan.
> 3. Exclude target shooting within 0.5 mile of designated trails.
> 4. Avoid authorization of right-of-ways and leases[2].

1.5.2 Additional Policies, Statutes, and Guidance

The Federal Land Policy Management Act provides for management of outdoor recreation on public land. Section 202(c)(9) calls for land use planning consistent with statewide outdoor recreation plans. Other national laws that govern recreation management in the Project Area include the National Trails System Act of 1968, Land and Water Conservation Fund of 1964, and Recreation and Public Purposes Act.

Most public land is managed to maintain a freedom of recreational choice with a minimum of regulatory constraints. Current management direction for dispersed recreation is provided in 43 Code of Federal Regulation (CFR) 8300 and subsequent BLM manuals, guidance, and policy. The BLM's 2014 Recreation and Visitor Services Handbook provides guidance for implementation-level planning efforts for Recreation Area Management Plans. Implementation decisions include these four categories:

1. **Management**. Includes recreation management actions, such as commitment of resources, services to be offered to visitors, and the development and provision of facilities (e.g., recreation sites, roads and trails, and concessions).
2. **Administration**. Includes regulatory actions, such as the implementation of allocation systems, permits, fees, use restrictions, and partnership agreements, as well as business plans or fiscal accountability systems and data management protocols.

[2] Note that the Record of Decision for the 2015 SunZia Southwest Transmission Project amended the 2010 Socorro RMP as follows: "The Socorro RMP (BLM 2010a) is amended to modify the VRM objectives from VRM Class II and III to VRM Class IV due to the change in project contrast in certain portions of the Selected Alternative corridors. The amendment to the Socorro RMP objectives (BLM 2010b, pages 42-43 and Map 6) results in a reduction of 0.07 percent (384 acres) of VRM Class II lands and a reduction of 0.06 percent (295 acres) of VRM Class III lands. The VRM Class IV lands increase by 0.13 percent (679 acres). See Table 2-16 of the Final EIS [Environmental Impact Statement]. The Socorro RMP is amended to modify right-of-way avoidance areas in certain locations where the Selected Alternative crosses areas designated as right-of-way avoidance. A total of 1,022 acres are removed from the total of 342,363 acres of the right-of-way avoidance lands in the Socorro Field Office, which results in a reduction of 0.3 percent (BLM 2010b, page 18 and Map 2), or 1.9 percent of the total acres of the right-of-way avoidance areas in the Project study corridor (see Table 2-17 of the Final EIS)." (BLM 2015)

3. **Information and Education.** Includes information and education actions, such as providing maps, brochures, websites, outreach, events, interpretation, environmental education, signs, and other visitor information delivery services.

4. **Monitoring**. Includes monitoring recreation resources and human use, such as visitor use and use patterns; recreation-caused resource effects or impacts; visitor satisfaction; and effectiveness or attainment of outcomes-focused management objectives, RSCs [Recreation Setting Characteristics], standards, and indicators.

The Socorro Field Office issues Special Recreation Permits that authorize certain recreational uses of land administered by the BLM. Authority to issue these permits is provided in 43 CFR 2932. The proposed travel route networks analyzed in the action alternatives were designed in accord with the requirements and guidance in Executive Orders 11644 and 11989, 43 CFR 8342.1, BLM Manual 1626, and BLM Handbook 8342, which are further explained in Appendix D. Table 1.2 provides a summary of the designation criteria in 43 CFR § 8342.1. The BLM's Interdisciplinary Team consideration and application of the designation criteria to each route evaluated for designation in the action alternative networks are further detailed in Chapter 2.

Table 1.2: 43 CFR § 8342.1 Designation Criteria

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

1.6 SCOPING AND ISSUE IDENTIFICATION

1.6.1 Overview

Internal (BLM) and external (public) scoping identified route- and use-related issues that could affect the natural and human environment within the Project Area. Those issues brought forward for detailed analysis in this Environmental Assessment (i.e., those necessary to make a reasoned choice between alternatives or to determine the significance of impacts) are discussed below.

1.6.2 Issues Carried Forward for Detailed Analysis

In developing this Travel and Recreation Area Management Plan, it is important for decision-makers and the public to understand the impacts that each of the alternative OHV travel networks could have on specific resources or uses relevant to the issues identified for detailed analysis. The issues and relevant resource/use topics are presented below in Table 1.3. These resource and use topics help organize and refine the discussions of the affected environment and environmental effects in Chapter 3.

Table 1.3: Issues Analyzed in Detail

1. POTENTIAL IMPACTS ON THE PROJECT AREA'S NATURAL AND HUMAN ENVIRONMENT
SPECIFICALLY:
• How would allowing for continued OHV use on existing travel routes impact soils, native vegetation, and watershed resources in the Project Area?
• How would the proposed travel route designation and recreation area management alternatives impact cultural and paleontological resources within the Project Area?
• How would the proposed travel route designation and recreation area management plan alternatives impact wildlife and wildlife habitat (including general wildlife, migratory birds, and special status species)?
• How would the proposed route designation and recreation area management alternatives impact visual resources within the Project Area?
• How would the route designation alternatives impact paleontological resources within the Project Area?
2. POTENTIAL IMPACTS TO RECREATION USER OPPORTUNITIES AND EXPERIENCES
SPECIFICALLY:
• How would the route designation alternatives impact recreation opportunities and experiences in the Project Area?
3. POTENTIAL IMPACTS TO PUBLIC AND PERMITTED USER SAFETY
• How would the travel route and recreation area management alternatives impact public and permitted user safety given the Project Area's sites of abandoned mines and hazardous waste?
4. POTENTIAL IMPACTS TO AUTHORIZED USERS
• How would travel and recreation use be managed in a manner to minimize or reduce potential recreation user conflicts with other authorized users?

1.6.3 Resource/Use Topics Identified but Eliminated from Detailed Analysis

Some issues raised during scoping were beyond the scope of this project, were not substantive, or were not helpful in making reasoned choices among alternatives. Resource/use topics that were identified but eliminated from detailed analysis in this Environmental Assessment can be found in the Interdisciplinary Team checklist table in Appendix E. In this table, resource/use topics with a determination of "NA" (Not Affected) or "NP" (Not Present) were not carried forward for analysis, and relevant details and explanations are provided. Resource topics are not analyzed because they are absent, because there is definite lack of potential for significant impacts, or because the issue is not necessary to make a reasoned choice between alternatives.

2 ALTERNATIVES

2.1 ALTERNATIVE DEVELOPMENT

Alternative Themes: Each alternative in Figure 2.1, Table 2.1, and Table 2.2, below, is based on a theme which helps in organizing and establishing a range for discussing and comparing the potential impacts in Chapter 3. The themes are as follows:

- **Alternative A**: Alternative A is the No Action or Current Management Alternative which describes management of recreation and travel on the Project Area's public lands at the current time. This alternative serves as the baseline against which potential effects from any of the action alternatives B-D can be compared.
- **Alternative B:** Alternative B provides for lower levels of recreation and motorized use opportunities and visitor service amenity development while emphasizing more natural and cultural resource protections than Alternatives C or D.
- **Alternative C:** Alternative C emphasizes the most diverse mix of recreational and travel route use opportunities and visitor service amenity development of any of the alternatives, while still providing for more protections for natural and cultural resources than Alternative D.
- **Alternative D:** Alternative D emphasizes an expanded range of recreational and travel route use opportunities and visitor service amenity development as compared to Alternatives C and D while still providing required protections for natural and cultural resources.

The Alternatives are described below for the Travel Management and Recreation Area Management portions of the project, respectively.

2.1.1 Travel Management Plan Alternatives

The BLM collected inventory data, which included GPS-collected lines showing route locations and attributes. Data also include GPS-collected points describing travel management-related features on or near routes. Additionally, during Interdisciplinary Team review, some linear features were identified that are not, nor were ever, affirmed as a travel route by the BLM. BLM staff considered these linear features and determined that they were linear disturbances (see Glossary for definition); therefore, they are not included in any of the route network alternatives.

In 2020, the BLM's Interdisciplinary Team rigorously reviewed and evaluated 133 routes totaling 138.0 miles contained in the baseline inventory for the Project Area. The results of this route evaluation process are thoroughly documented route-by-route in the Route Reports (see Appendix F). In the evaluation process, the Interdisciplinary Team:

- Identified the purpose and need of each route. The Interdisciplinary Team identified, discussed, and documented whether, and to what extent, each route currently or historically has received motorized and non-motorized use and provides access, connectivity, and/or recreational outcomes. This included consideration and documentation of known authorized uses, user conflicts, whether and to what extent the route provides access to land ownerships, facilities, campsites, points of interest (e.g., overlooks or natural and historic

features), and whether there are multiple routes leading to the same location or providing a similar experience.

- Verified the character and use level of the route.
- Identified, discussed, and documented the users of the route.
- Identified, discussed, and documented the resources and resource uses present on or near the route while considering 2010 RMP decisions, direction, and opportunities for those resource values such as resource protection needs for wildlife and habitat; minimization and monitoring opportunities for resource damage; motorized recreation user and user conflict issues; and public health and safety concerns.
- Discussed, applied, and documented the designation criteria set forth at 43 CFR 8342.1 to determine how resource and user conflicts could be minimized (limit the degree or magnitude of the action (BLM MS 1626)) through appropriate OHV designation.
- Proposed route-specific OHV designations (open, limited, or closed) under each action alternative based on the individual route network alternative's theme(s) and documented the rationale for that proposal including how the designation would minimize damage to affected soils, watershed, vegetation, and reduce user conflicts. As necessary, additional management (e.g., monitoring) was discussed and assigned to routes as part of their individual proposed designations to minimize resource and user conflicts. Details on these management assignments are contained in the route reports (see Appendix F).

The BLM's route inventory was based on data from various sources. Throughout the planning process, the BLM used scoping to solicit public input, identify a range of potential alternatives, address issues requiring detailed impact analysis, and identify recreation needs (e.g., services, facilities, and management plans).

While routes were individually evaluated, the final TMP will be an aggregate of routes, selected from a range of alternatives, that have been organized into a network meeting the purpose and need of the project. The proposed travel route network designation alternatives analyzed in this Environmental Assessment as Alternatives B-D, with their designations displayed quantitatively below in Figure 2.1 and Table 2.1, were developed from the themes noted earlier in Section 2.1 Alternative Development, reflecting issues that emerged from both internal and external scoping. Each of the action alternatives B-D meets the purpose and need, conforms to the management decisions, direction, recommendations opportunities and procedures noted in Section 1.5, and responds to the issues in Table 1.3.

Proposed preliminary travel route designations for the alternative route networks are assigned as part of the route evaluation process as described above. These alternative route networks are then refined as part of an internal BLM review and subjected to thorough environmental analysis prior to selecting a final proposed network. Each individual travel route within the final proposed network is assigned a designation specifying a mode of travel or use following environmental analysis and issuance of a final travel management network decision- each route then becomes a formally designated route. Formal OHV route designations are generally categorized as described below as OHV-Open, OHV-Limited, or OHV-Closed.

In Table 2.1 below and tables in Chapter 3, a variety of detailed travel route designations are presented under broader OHV (i.e., public motorized use) designation categories to enable the reader to compare differences more easily between the route network alternatives. However, the

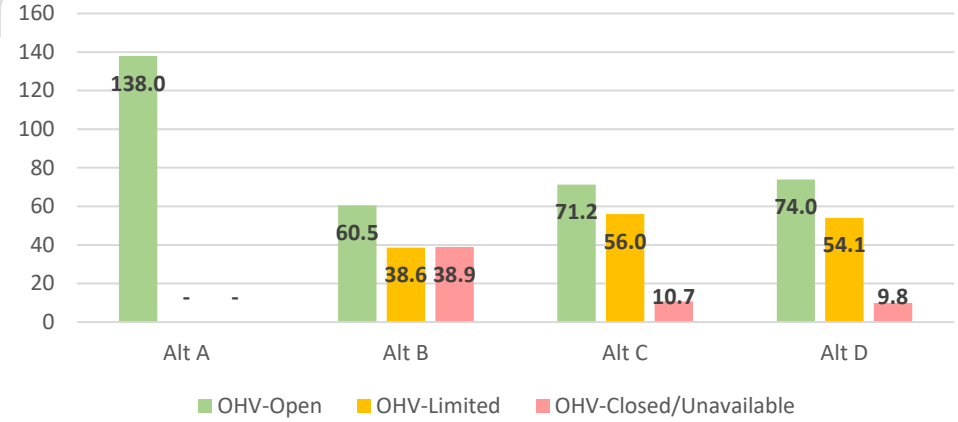
entire variety of individual designations applied during route evaluation are also displayed. In some cases, some form of additional management (e.g., monitoring) was assigned to routes as part of their individual designations, and details on such management can be found in the route reports. For this project, the OHV designation for any given route falls into one of the following general OHV categories:

- OHV-Open – Open year-round to all motorized vehicle travel.
- OHV-Limited – Public motorized vehicle use limited to specified vehicle type, width, or mode of travel (e.g., motorized vs non-motorized). This category also includes routes that are limited to seasonal restrictions for wintering big game, breeding, lekking or nesting periods.
- OHV-Closed – Route not available for public motorized vehicle use. (While OHV-Closed is an official designation, these routes are not included in the set of routes that are commonly referred to as "designated routes." That term most often refers to those routes that are available for *public* motorized uses. For example, many BLM travel networks include signing that states, "motor vehicle travel allowed only on designated routes" or similar language.)

Regardless of route designations, users can engage in non-motorized forms of transportation such as walking or riding horses anywhere on the Project Area's BLM lands (on routes or cross-country), unless there is a specific exclusion stating otherwise. The OHV-Closed category also includes:

- Routes that will not become part of the designated OHV route network and are earmarked for decommissioning and natural or manual reclamation.
- Routes that remain available for existing authorized or administrative uses. Some of these routes provide access to authorized facilities (i.e., stock tanks and ponds, corrals, communication sites, etc.).
- Routes that remain available for non-OHV use, such as hiking or equestrian trails.

Figure 2.1: Miles of Evaluated Routes in the Project Area by Designation and Alternative



2.1.2 Recreation Area Management Plan Alternatives

Table 2.2 summarizes the proposed alternative actions for addressing the identified recreation management issue(s) in the Johnson Hill SRMA developed through scoping. Each issue contains sub-issues or concerns that were raised in scoping. For example, the concern of how to manage Special Recreation Permits in the SRMA is organized below based on current (Alternative A) and proposed (Alternatives B-D) management of the SRMA travel route network and the various types of Special Recreation Permits applicable to the area. Alternative A is presented to illustrate current management, and to provide a baseline for comparing the potential effects for each of the action alternatives B-D in Chapter 3.

Table 2.1: Recreation Area Management Actions by Alternative

Recreation Area Management Action	Alternatives			
	Alt. A: Current Management	Alt. B: Resource Protection	Alt C: Blended	Alt. D: Development
Providing for visitor services and facilities	None currently exists	Future proposals will be considered on case-by-case basis	Develop parking areas, staging areas, vault toilets, signage, dispersed camping sites	Develop parking areas, staging areas, UTV cattle guards, vault toilets, picnic tables, trash dumpsters, shade structures, point of entry information center, fee area campground with amenities,
Managing for competitive races and events	Event Special Recreation Permits are evaluated on a case-by-case basis and several have been issued	Each proposal is evaluated by a team of resource specialists, events may or may not be approved based on the evaluation	Limit number of permits, continue to review each event, monitor events and resource conditions	No longer a need for specialists' reviews of events, unlimited number of events are authorized
Issuing Special Recreation Permits	Special Recreation Permits are evaluated on a case-by-case basis, and issued as requests are approved	Each Special Recreation Permit is evaluated by a team of resource specialists, Special Recreation Permits may or	Some Special Recreation Permits may be limited based on scheduled events and number of previous permits already issued.	No limit on Special Recreation Permits but as number increases, provide additional areas

		may not be approved based on the evaluation		for them to operate.
Implementing use restrictions and fees	None currently exist	None currently exist	Designate type of use to certain areas based on type of mode of travel (i.e., vehicle class, bikes, horseback, UTVs).	Allow all types throughout entire management area
Other management actions	None currently exists	None currently exists	Designate non recreational shooting areas, non-hunting areas, mineral extraction exclusion, no future energy development/ corridors,	Authorize multi-use throughout the area, uses can be approved on a case-by-case basis.

2.1.3 R.S. 2477 Assertions

The State of New Mexico and counties may hold valid existing rights-of-way within the Project Area pursuant to Revised Statute (R.S.) 2477, Act of July 28, 1866, Chapter 262, 8,14; Stat. 252, 253, codified at 43 U.S.C. § 932. This travel planning effort and resulting Travel Management Plan is not intended to provide any evidence bearing on or to address the validity of any asserted R.S. 2477 rights-of-way and does not adjudicate, analyze, or otherwise determine the validity of any asserted rights-of-way. R.S. 2477 rights are determined through a process that is entirely separate from BLM travel planning efforts. Consequently, this planning effort does not consider any R.S. 2477 assertions or evidence and has no effect on any legal rights relating to asserted R.S. 2477 rights-of-way. At such time as administrative or judicial determinations are made acknowledging or adjudicating asserted R.S. 2477 rights-of-ways, the BLM will adjust its Travel Management Plan accordingly.

2.2 IMPLEMENTATION ACTIONS COMMON TO ALL ALTERNATIVES

The implementation actions discussed below are common to all the Travel and Recreation Area Management Plan alternatives described above. These routine actions are described in more detail in the Implementation Guide for the Johnson Hill Travel and Recreation Area Management Plan (Implementation Guide). Potential effects from these actions are discussed in Chapter 3.

2.2.1 Sign Installation

The Project Area travel route networks will be signed to identify and direct users to facilities and routes, and inform users of locations, special conditions, and limitations. Sign installations result in ground disturbance (post hole excavation, minor grading) and may involve minor vegetation removal. Sign placement will be done in previously disturbed areas where possible but may require disturbance in previously undisturbed areas. Sign placement in areas that are not previously disturbed is not part of this Environmental Assessment and would be subject to an appropriate level of additional NEPA, and could be Categorically Excluded (43 CFR 46.210(G)(2)), if applicable.

2.2.2 Route Maintenance

Maintenance of routes could be categorized into one of two categories: 1) routine maintenance that meets the purpose and need of the route and that does not extend beyond the edge of previous road prism disturbance; or 2) maintenance of a route that exceeds the standard of routine maintenance by either upgrading, widening, re-aligning, or otherwise creating new surface disturbance. Maintenance of designated routes would typically be conducted as described in the first category. Maintenance of designated routes that fall into the second category (i.e., more than routine) may be conducted only after additional site-specific analysis.

2.2.3 Closure and Reclamation of Travel Routes

Travel routes may be decommissioned, physically closed, and reclaimed through a variety of methods as described below:

- Closed routes may be allowed to revegetate naturally.
- Signs or barriers (e.g., boulders, fences and gates, berms, vegetation) may be placed/installed at entrances to physically close routes.
- Routes may be physically ripped or scarified using heavy equipment and revegetated through seeding or planting.
- Some routes may be graded and recontoured using heavy equipment to restore natural slope and blend in with adjacent ground contours.
- In sandy areas and washes, tracks may be raked out so there is no evidence of vehicle use.
- As with maintenance activities, ground disturbance may extend into areas not previously disturbed.
- Mulching may be used to obscure closed routes or protect disturbed surfaces.

The Implementation Guide covers closure and reclamation methods in detail.

2.2.4 Best Management Practices and Standard Operating Procedures

Implementation activities with all alternatives are subject to Best Management Practices and Standard Operating Procedures. A list of these management practices and operating procedures can be found in the Implementation Guide.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 OVERVIEW

3.1.1 Introduction and General Setting

This chapter describes the current conditions and trends of the resource topics (i.e., those resources, resource uses, and social and economic values that comprise the natural and human environment) relevant to the scoping issues presented in section 1.6.2. It also discloses the effects that implementation of any of the Travel and Recreation Plan alternatives would have on relevant resource/use topics. The affected environment is the same for all alternatives. For an overview of the Project Area setting, see section 1.4. The table in Appendix E lists all resource/use topics relevant to issues identified in scoping and brought forward for analysis and provides rationales for resources or resource uses not analyzed.

3.1.2 Effects

In this Environmental Assessment, effects analysis was conducted in the context of National Environmental Policy Act planning. The BLM's National Environmental Policy Act handbook defines "effect" as an "impact to the human environment brought about by an agent of change, or action. Effects analysis predicts the degree to which the environment will be affected by an action" (BLM 2008a). The handbook adds that effects "can be both beneficial and detrimental, and may be direct, indirect, or cumulative." Beneficial effects are those that would enhance or restore the Project Area environment. For example, a designated travel network can provide sustainable travel routes for a variety of opportunities and desired experiences that would help reduce user inclination to travel off-route and create new disturbance and impacts to the Project Area's natural and cultural resources.

The analysis that follows—unless otherwise noted—focuses on those scoping issues and concerns associated with potential effects on relevant Project Area resources and resource uses. Analyzing these effects provides a useful comparison between each alternative travel network's capability for addressing the documented issues and concerns. The BLM's National Environmental Policy Act handbook states that the BLM "must consider and analyze three categories of effects for any BLM proposal and its alternatives: direct, indirect, and cumulative (40 CFR 1508.25(c))" (BLM 2008a), so throughout the analysis effects are discussed in the context of:

- Direct effects: Caused by alternative (same time and place).
- Indirect effects: Caused by alternative but later in time or further in distance but still reasonably foreseeable.
- Cumulative effects: The Council on Environmental Quality National Environmental Policy Act regulations (40 CFR 1508.7) defines a cumulative effect as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from

individually minor but collectively significant actions taking place over a period of time" (GPO 2012).

Note: Cumulative effects analysis can be found at the end of the Issue sections in this Chapter.

3.1.3 General Assumptions

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

- Increasing numbers of recreation users will continue to visit the Project Area for the recreation opportunities and experiences available in the area.
- Reducing OHV network mileage within the Project Area is not anticipated to decrease OHV use overall. Year-round OHV and non-motorized recreation is expected to increase in and around the Project Area independent of the travel route network alternative selected for the Travel Management Plan.
- The construction of new routes is not in the scope of this project; however, the possibility of future addition of new routes is part of the operation and management of the overall travel network (see Implementation Guide). As part of ongoing travel management associated with this Travel and Recreation Area Management Plan, route designations may be added or changed in the future to respond to growing public demand for access, rights-of-ways, or concerns of damage to resources (e.g., an existing route that is needed to access a trailhead is causing unacceptable erosion). Any new or changed designations will be subject to an appropriate level of site-specific environmental analysis in accordance with the National Environmental Policy Act and Transportation and Travel Management-related decisions in the 2010 RMP.
- Concentration of use is generally not anticipated as an issue for archaeology, wildlife, and most other resources. Routes proposed for OHV-Closed designations in the alternative networks are very lightly used, and therefore there would be no appreciable concentration of use on the remaining open routes. However, concentration of use is an issue regarding OHV travel over an existing buried petroleum pipeline (see Sections 3.4.1 and 3.5.1).
- For Alternatives B-D, the designation of a comprehensive route network that accounts for all evaluated routes is anticipated to provide enhanced predictability and clarity for users along with a variety of OHV opportunities and experiences that could help reduce user inclination to travel off OHV-Open and OHV-Limited routes (GAO 2009).
- In addition to providing access for OHV users, a well-planned and managed comprehensive designated network is also anticipated to provide primary long-term sustainable access for resource management and authorized use- purposes.
- Detrimental effects would be reduced by applying the best management practices and standard operating procedures listed in Chapter 3.5., Maintenance and Engineering, of the Implementation Guide for operation and maintenance of the designated route network.
- OHV-Open and OHV-Limited designations that include "with management" include some type of additional management (e.g., sign installation, monitoring, maintenance, etc.), but do not necessarily result in additional limitations on user type, season of use, or mode of travel.

- The implementation discussed in this document and detailed in the Implementation Guide is subject to available funding and resources. For the purposes of this analysis, it is assumed that funding and resources would be available for implementation.
- Routes that are designated OHV-Closed would not become part of the OHV travel network. They would be decommissioned and allowed to reclaim naturally or be actively reclaimed (e.g., through scarification and seeding), unless they are to remain available for administrative or authorized uses (e.g., access to authorized range facilities or communication sites).
- For the purposes of this Environmental Assessment, it is assumed that implementation of a designated route network, including management, maintenance, and appropriate signing, would help minimize illegal off-route OHV use and that most OHV users would act responsibly and legally on all designated routes.
- As part of motorized use of designated routes, some incidental uses would occur in conjunction with OHV-Open or OHV-Limited travel route designations. Such uses include parking along an existing route, pulling off the route to allow another vehicle to pass, and using short existing access spurs leading to dispersed campsites. Such uses commonly occur in conjunction with route use and are allowed as long as they do not result in permanent disturbance and resource damage.

3.1.4 Effects Analysis Methodology

General Effects Analysis

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

- See the Interdisciplinary Team checklist in Appendix E for determination and rationale for individual resource/use topics. In some cases, because of interrelated issues, multiple resource/use items are analyzed in the same section (e.g., Soils/Watersheds; Vegetation; Invasive, Non-Native Species; Water Quality; Floodplains; and Wetlands and Riparian Zones are considered together in Section 3.2.1).
- GIS data and data collected during route evaluation form the basis for disclosing alternative route networks' potential effects on resource/use issues. Quantitative data in tables, derived from GIS and route evaluation data mining, indicate how many miles or numbers of routes of a particular designation under each alternative have potential to affect resources/uses. These tables are used to disclose and compare effects of the action alternatives (B, C, and D) to the No Action Alternative (A). In many cases, the potential for effects is noted by comparing percentages or miles of routes of a designation with the total miles or numbers of routes associated with a particular resource. Travel routes or route miles are considered as potentially impacting a resource when they cross over it (e.g., species habitat polygons), are within a defined proximity distance of it (e.g., within ½ mile of a habitat polygon), or are otherwise noted as being associated with habitat in route reports. Proximity distances were applied based on the professional knowledge of BLM resource specialists unless otherwise stated.
- Mileages, percentages, acreages, and other quantities used in this analysis are approximate projections for comparison and analytical purposes only; they do not always reflect exact

measurements or precise calculations. Table mileages and percentages may not total equally in some instances due to rounding.

- Effects analysis is based on a combination of the best available data and resource staff knowledge of the Project Area (based on observation, management, and analysis of conditions and resources in the area and other similar areas).
- For some resource topics, more specific methodologies were used to determine effects. These methodologies are described in their respective resource topic sections.
- Cumulative effects analysis is presented at the end of each Issue section in this chapter.

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

Cumulative Effects Analysis

In this chapter, cumulative effects analysis for the Project Area's proposed alternative travel networks is based on the best available data and information, and in some cases where quantitative data is not available, analysis is primarily qualitative in nature. A table at the end of each of the four issues sections presents the plans, actions, or events that make up the cumulative impact scenario for each resource or use topic relevant to the issues.

3.1.5 Additional Management

During route evaluation, additional measures were considered and documented where appropriate for routes with the designations of "OHV-Open with management" or "OHV-Limited with management." Measures include such actions as gate installation, road prism stabilization or erosion control measures, and monitoring for cultural sites or recreational uses. Details on monitoring, design features, and mitigation may be found in the Implementation Guide. Mitigation measures would help reduce the detrimental effects of the alternative travel networks on many of the Project Area's natural and cultural resources, and monitoring would serve to track the effectiveness of mitigation measures.

3.2 ISSUE 1: POTENTIAL IMPACTS ON THE PROJECT AREA'S NATURAL AND HUMAN ENVIRONMENT

3.2.1 Soils, Vegetation, and Watersheds

How would allowing for continued Off Highway Vehicle use on existing travel routes impact soils, native vegetation, and watershed resources in the Project Area?

The Project Area's native vegetation types exist in a few different ecoregions as discussed below in Affected Environment. Soil disturbance and erosion can create an environment that is conducive

to the introduction and spread of noxious weeds and invasive species. Soil disturbance and erosion can also impact watershed health. Because of this interrelationship, these resource topics are presented together in this section.

Affected Environment

Soils

Soils serve an important role in the Project Area, as many resources and uses depend on soil health. A goal in the 2010 RMP is to manage uses to minimize and mitigate disturbances to soils and loss of soil sediments from erosion; and to maintain soil stability to protect soil ecological health and long-term productivity. Soil types in the Project Area, 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 erodible soils. Additionally, the Project Area'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. 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. In addition to soil crusts, desert pavements are also important in protecting area soils from erosion. The U.S. Department of Agriculture defines desert pavement as "a natural, residual concentration or layer of wind-polished, closely packed gravel, boulders, and other rock fragments mantling a desert surface. It forms where wind action and sheetwash have removed all smaller particles or where rock fragments have migrated upward through sediments to the surface" (USDA 2015). Desert pavement is important in protecting the finer-grained underlying material from further erosion.

The Project Area predominantly consists of soils in the Arizo-Riverwash complex and the Typic Comborthids-Nolam association, with Bluepoint loamy fine sand and other soil types covering less area. The Arizo-Riverwash complex is on valley floors and small alluvial fans associated with arroyos and drainageways. Arizo soils are unstable because of the location along arroyos; water erosion potential is slight, but wind erosion potential is high. Riverwash consists of loose sand, pebbles, cobbles, and stones in channels and on bars and is subject to periods of flooding. The Typic Camborthids-Nolam association consists of bajadas and fan terraces. With Typic Camborthids soils, water runoff is rapid and water erosion potential is high; wind erosion potential is moderate. With Nolam soils, water erosion potential is moderate and wind erosion potential is slight because of presence of desert pavement (Johnson 1988). Overall, 6 routes within the Project Area are in areas with highly erosive soils and 115 routes are in areas with moderately erosive soils.

Vegetation

The Project Area is located in three ecoregions: Chihuahuan Desert Grasslands, Chihuahuan Basins and Playas, and the Rio Grande Floodplain. Ecoregions are "areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources; they are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components" (Griffith et al. 2006).

Chihuahuan Basins and Playas include alluvial fans, internally drained basins, and river valleys below 4,500 feet in elevation. These areas are some of the most arid habitats in the state. The basin floors have saline or alkaline soils and areas of salt flats, dunes, and windblown sand. Typical shrubs and grasses include creosotebush (*Larrea tridentata*), tarbush (*Flourensia cernua*), fourwing saltbush (*Atriplex canescens*), acacias, gypsum grama (*Bouteloua breviseta*), and alkali sacaton (*Sporobolus airoides*). These areas also commonly have horse crippler (*Echinocactus texensis*) and other cacti. (Griffith et al. 2006)

Chihuahuan Desert Grasslands occur on piedmonts, foothills, and lowlands between 3.600 feet and 5600 feet in elevation and can grow in soil types ranging from clayey to rocky. Although dominated by grasses, the natural vegetation in this ecoregion type can include shrubs or sub-shrubs. Common grasses may include black grama grass (*Bouteloua eriopoda*), bush muhly (*Muhlenbergia porteri*), and fluffgrass (*Dasyochloa puchella*); and common shrubs and sub-shrubs may include longleaf jointfir (*Ephedra trifurca*), Torrey's yucca (*Yucca treculeana*). pricklyleaf dogweed (*Thymophylla acerosa*), and woody crinklemat (*Tiquilia canescens*). (Unnasch, et al. 2017)

A small portion on the west side of the Project Area is in the Rio Grande Floodplains ecoregion. Historically, the Rio Grande had gallery forests of cottonwood and willow with understories of coyote willow, New Mexico olive, false indigo, and seepwillow. Over the years, irrigation and drainage canals, levees and jetty jacks, and upstream dams altered river flows and narrowed and straightened the stream channel. Because of this, riparian woodlands; shrublands; and wetland meadows, ponds, and marshes have been reduced and invasive salt-cedar and Russian olive have expanded. Some narrow bands of cropland, orchards, vineyards, and small farms can now be found in portions of the ecoregion. (Griffith et al. 2006)

Table 3.1: Acres and Miles of Evaluated Routes by Ecoregion

Resource	Ecoregion Acres on BLM	Miles of Evaluated Routes within Ecoregion
Chihuahuan Basins and Playas	4,198	62.1
Chihuahuan Desert Grasslands	6,138	74.8
Rio Grande Floodplain	178	1.0

The presence of invasive species can be used as an indicator of unhealthy ecosystems as their presence is often related to disturbances and loss of native species in those systems. Invasive salt-cedar has been identified within the Project Area. Invasive species such as salt-cedar can present a problem along river corridors and in riparian areas as well in large areas of uplands and rangelands. Surface-disturbing activities have the potential to introduce or spread invasive species. Travel routes can serve as corridors where invasive species can be introduced or spread throughout connecting routes. For more information on invasive weeds in the Socorro Field Office's jurisdiction, see page 3-38 of BLM 2008b. Within the Project Area, 5 evaluated routes are in areas of current weed infestations.

Watersheds

Management goals in the 2010 RMP include maintaining or improving overall watershed health by maximizing infiltration for groundwater recharge and maintaining or improving surface water quality in watersheds. The Project Area boundary is less than 1 mile from the Rio Grande River.

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). They are defined as areas of land directly influenced by permanent (surface or subsurface) water. They have visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks with perennial water flow are typical riparian areas. They include wetlands and those portions of floodplains and valley bottoms that support riparian vegetation (Meehan 1991). Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil (BLM 1991). However, it is important to note that an ephemeral stream is one that flows only in direct response to precipitation and whose channel is at all times above the water table. Thus, intermittent or ephemeral streams which do not currently exhibit riparian characteristics may in fact be connected to a water table and could potentially develop riparian attributes with management changes.

Riparian areas are scarce in the Project Area. However, these small but unique areas constitute important, productive, and diverse ecosystems. Riparian areas provide many benefits, 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—occurring on streambanks and floodplains, at springs, seeps, potholes, wet meadows, sloughs, marshes, swamps, and bogs—are all important resources for aquatic organisms, wildlife, grazing, and recreation. 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 aesthetic attributes. However, riparian ecosystems are fragile resources that are among the first indicators of impacts from disturbance.

Overall, 3 routes within the Project Area are in or proximate to (within ¼ mile of) riparian areas or springs.

Environmental Effects Analysis

Effects on soils, vegetation, and watershed health from travel and recreation activities such as camping, exploring, OHV use, equestrian use, etc. are often adverse and are closely interrelated as adverse effects on one of these resources can have a subsequent effect on the other (e.g., soil impacts can result in vegetation impacts and vice versa). OHV-related direct effects on soils can include compaction and rutting while indirect effects include displacement and soil loss (i.e., erosion during runoff periods or high precipitation events).

Recreation and travel-related direct effects on vegetation include trampling or crushing of vegetation as well as loss. Dust from concentrated OHV use can cover nearby vegetation and result in reduced plant vigor and/or plant mortality. Travel network alternatives that close more miles to OHV travel would provide higher levels of protection to area vegetation from the reduction of OHV use and associated activities. Travel routes can also lead to the introduction and spread of invasive plants as vehicle tires and undercarriages can carry plant seeds and serve as vectors. Resulting weed infestations can out-compete native vegetation for available nutrients and disrupt

proper ecosystem functions. However, certain types of travel route designations (e.g., "Closed" or "Limited"), by eliminating or limiting OHV (i.e., public) travel, can limit or reduce the spread of invasive and noxious plants. Travel routes also provide access for monitoring and treatment of existing areas of invasive species and weeds.

Travel routes can serve as a conduit for sediment transport (indirect) into intermittent or perennial drainages and riparian areas during runoff events. Surface disturbances from motorized and non-motorized travel can also remove soil-stabilizing agents, such as vegetative cover, soil crusts, and woody debris. Loss of one or more of these agents increases potential erosion and sediment transport into water bodies and riparian areas, contributing to water quality degradation. Poorly located roads and trails in highly erosive soil and steep slope areas that are proximate to, leading to, or crossing drainages will result in higher amounts of sediment travel and deposition in water bodies and riparian areas during storms and runoff events. Indicators are rills and gullies leading to and from travel routes and draining into existing perennial or intermittent streams or riparian areas, and declining riparian zone vegetation health, diversity, density and vigor. Impacts to floodplains primarily consist of loss of vegetation and geomorphic changes to bank angle, bank stability, increasing channel width, increasing width/depth ratios, and in some cases creating artificial flow channels at or near road/stream intersections. Floodplain connectivity may be impaired due to increased erosion and channel downcutting resulting from accelerated flood velocities linked to loss of vegetation or soil compaction.

Implementation activities that could affect soils, vegetation, and watershed health include sign and information kiosk installation; vault toilet installation; shade structure installation; fee area and campground development; road, trail and parking area maintenance or improvements; route reclamation (including ripping the ground and planting seed, grading/recontouring); and fencing or barrier installation. Ground disturbance, loss of vegetation, and weed and invasive plant growth from new disturbance (e.g., sign installation) would be localized and temporary, as the application of best management practices in these areas such as seeding and planting would accelerate stabilization and reclamation. If implementation is proposed that falls outside of previously disturbed areas, additional site-specific NEPA would be required before the activity could occur.

Indicators of potential impacts on soil health and stability include miles of routes in erodible soils, as shown below in Figure 3.1 and Figure 3.2. Indicators of potential impacts to the Project Area's overall vegetation and rangeland health include miles of evaluated routes in each ecoregion and in in areas of invasive plants, as shown below in Figure 3.3 – Figure 3.6. Indicators of potential impacts on the Project Area's water resources include the number of routes in or crossing riparian areas or springs as shown below in Figure 3.7.

Figure 3.1: Number of Evaluated Routes in Areas with Highly Erosive Soils

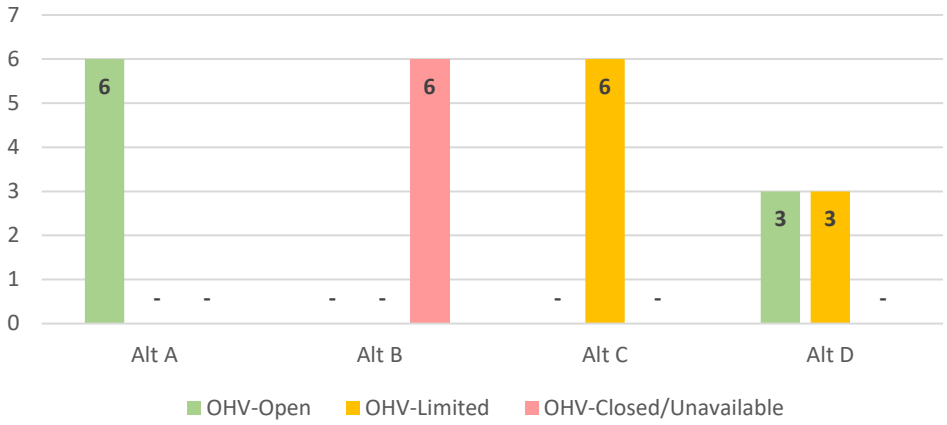


Figure 3.2: Number of Evaluated Routes in Areas with Moderately Erosive Soils

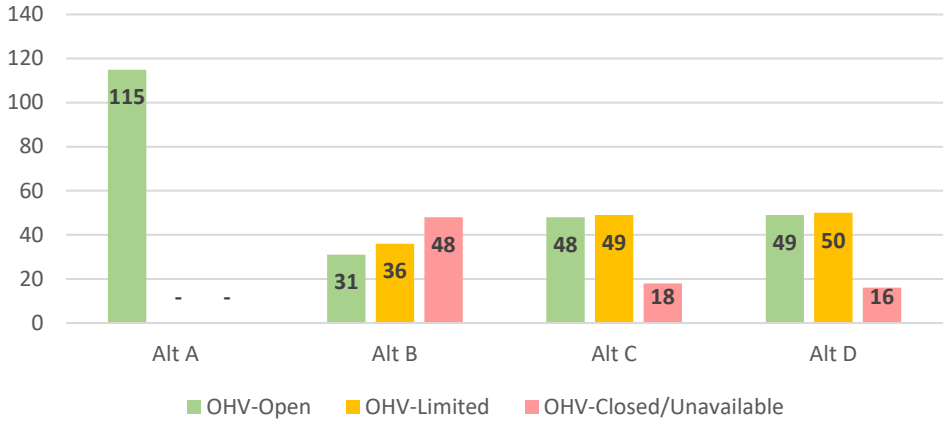


Figure 3.3: Miles of Evaluated Routes in Chihuahuan Basins and Playas Ecoregion

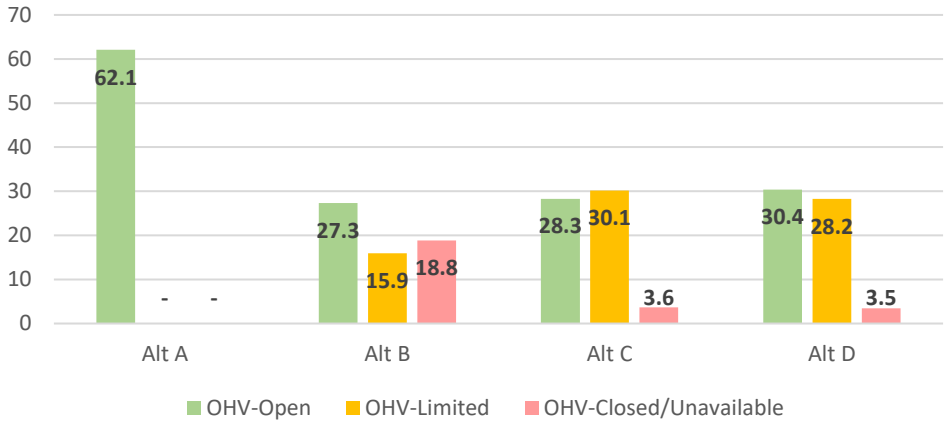


Figure 3.4: Miles of Evaluated Routes in Chihuahuan Desert Grasslands Ecoregion

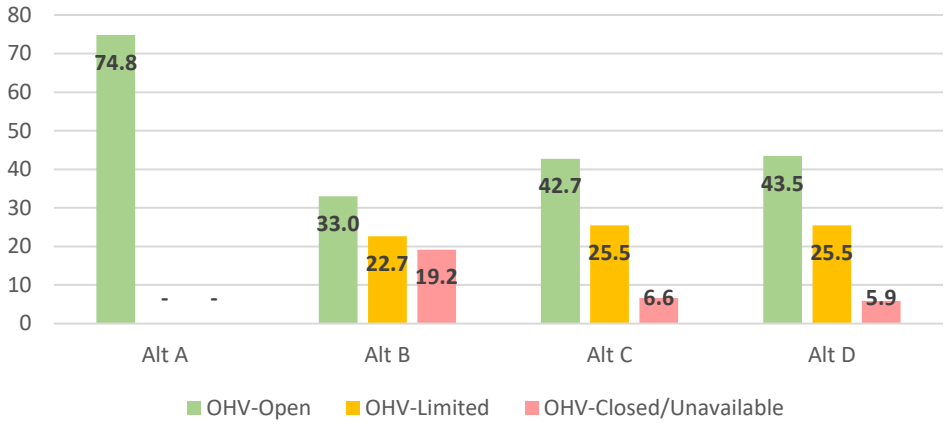


Figure 3.5: Miles of Evaluated Routes in Rio Grande Floodplain Ecoregion

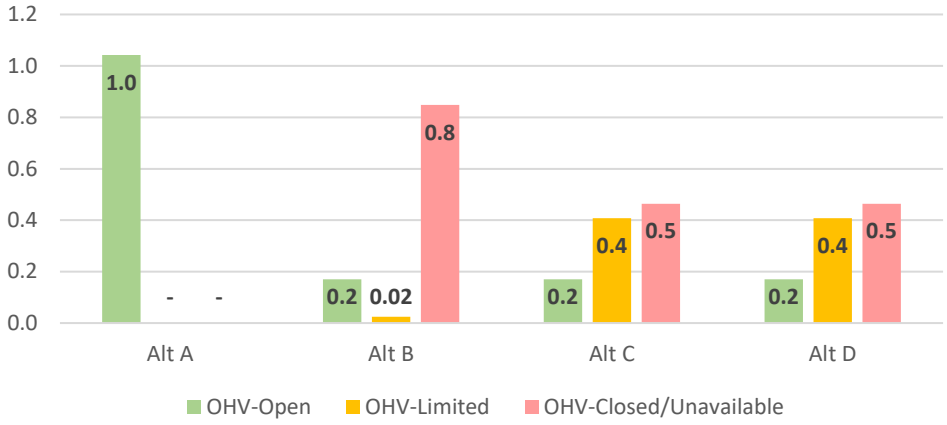


Figure 3.6: Number of Evaluated Routes in Areas of Invasive Vegetation

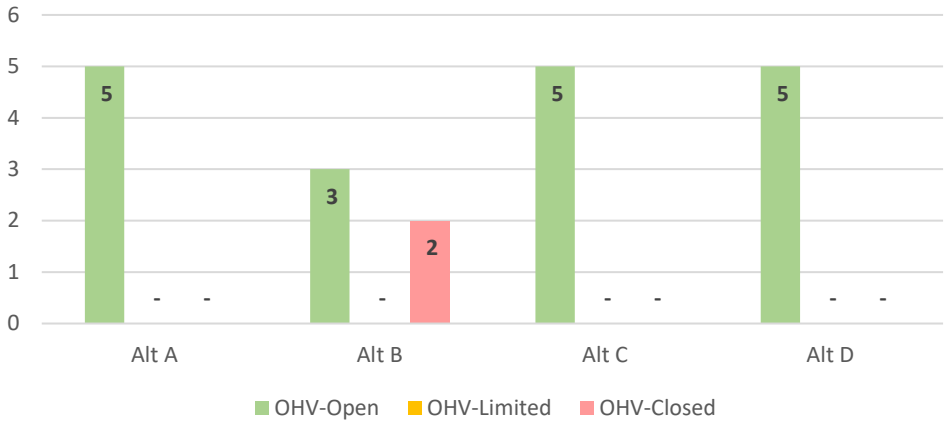
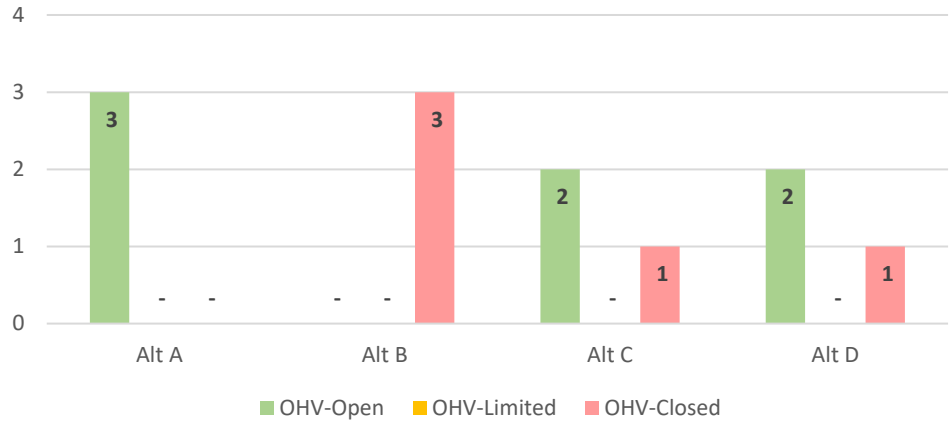


Figure 3.7: Number of Evaluated Routes in or Crossing Riparian Areas or Springs



Alternative A (No Action)

All 6 routes in highly erosive soils and all 115 routes in moderately erosive soils are currently managed as available for OHV use (regardless of vehicle width, etc.). All the route miles across the three area ecoregions and all routes within areas of invasive vegetation are currently managed as open to OHV use. And all 3 routes crossing riparian areas or springs are currently available for OHV use as well. Potential impacts to soils on routes that receive OHV use are rutting and displacement on routes or route segments where OHVs travel at higher speeds, and spin tires at higher rpms to avoid losing traction. In areas of severe rutting or potholing, braiding is likely to occur where vehicles travel to circumvent the ruts, exposing more soil to effects of wind and water erosion. Given the number of existing OHV travel routes in erodible soils, areas of invasive species, and riparian areas open to all vehicles, there is a relatively high potential for ongoing route proliferation and associated impacts to soils, vegetation, and watershed health.

Alternative B (Enhanced Resource Protection Emphasis)

Alternative B would close all 6 routes in highly erosive soils, and all of these routes would be earmarked for decommissioning and reclamation. Of the 115 routes in moderately erosive soils, Alternative B would designate 67 for OHV use (OHV-Open or OHV-Limited), a 42% reduction from Alternative A; of the routes designated for OHV use, 36 would be limited by vehicle type or width, providing more diverse OHV opportunities (i.e., single-track trails) that would likely help reduce route widening or user inclination to travel off-route and create new soil disturbance. Of the OHV-Closed routes in moderately erosive soils, 2 would be designated for non-motorized use, 9 would be designated for authorized use only, and the rest would be earmarked for decommissioning and reclamation. Of the 138.0 miles of evaluated routes in the Project Area overall, Alternative B would designate 99.1 miles for OHV use, a 28% reduction compared to Alternative A; this includes a 30% reduction in the Chihuahuan Basins and Playas ecoregion, a 26% reduction in the Chihuahuan Desert Grasslands ecoregion, and an 81% (0.8-mile) reduction in the Rio Grande Floodplain ecoregion. Of the 38.9 miles that would be closed to public OHV use throughout the Project Area under this alternative, 0.3 miles would be reserved for non-motorized use, 7.9 miles would be designated for authorized use only, and the remainder would be decommissioned and earmarked for reclamation. In areas of invasive species, Alternative B would designate 3 routes as OHV-Open, a 40% (2-route) reduction compared to Alternative A. In riparian/spring areas, Alternative B would close all 3 routes to OHV use.

Under Alternative B, development and installation of visitor services amenities such as parking areas, vault toilets, and campsites would be considered on a case-by-case basis, would include formal engineered design, and be subjected to an appropriate level of environmental review and documentation. Ground disturbance, loss of vegetation, and weed and invasive plant growth from new disturbance would be localized and temporary, as the application of best management practices (e.g., seeding and planting) would accelerate stabilization. A limited number of Special Recreation Permits could be issued on a case-by-case basis under this alternative, potentially increasing OHV and recreation use in the Project Area.

Under Alternative B, the same types of effects from OHV and recreation use noted above on soils, vegetation, and watershed health would continue to occur on those routes designated OHV-Open and at those sites for which visitor service amenities are approved. Routes designated OHV-Limited would likely help reduce route widening or user inclination to travel off-route and create new soil disturbance. Overall, this alternative would have the lowest potential of any of the alternatives for OHV-related impacts to soils, vegetation, and watershed health.

Alternative C (Blended Protection/Use Emphasis)

Alternative C would designate all 6 routes in highly erosive soils as OHV-Limited, limited by vehicle type or width, resulting in more diverse OHV opportunities (i.e., single-track trails) that would likely help reduce route widening or user inclination to travel off-route and create new soil disturbance. In areas of moderately erosive soils, Alternative C would designate 97 routes for OHV use and close the rest. Of the routes designated for OHV use, 49 would be limited by vehicle type or width; of the 18 OHV-Closed routes, 3 would be designated for non-motorized use, 6 would be designated for authorized use only, and the rest would be decommissioned and earmarked for reclamation. In the Project Area overall, Alternative C would designate 127.2 miles for OHV use, an 8% reduction compared to Alternative A; this includes a 6% reduction in the Chihuahuan Basins and Playas ecoregion, a 9% reduction in the Chihuahuan Desert Grasslands ecoregion, and a 45% (0.5-mile) reduction in the Rio Grande Floodplain ecoregion. Of the 10.7 overall miles that would be closed to public OHV use under this alternative, 2.2 miles would be reserved for non-motorized use, 5.4 miles would be designated for authorized use only, and the remainder would be decommissioned and earmarked for reclamation. In areas of invasive species, Alternative C would designate all 5 routes as OHV-Open, the same as Alternative A. In riparian/spring areas, Alternative C would designate 2 routes as OHV-Open, a 1-route reduction from Alternative A.

Alternative C would provide for a higher level of development and installation of visitor services amenities such as parking areas, vault toilets, and campsites as compared to Alternative B. Such development would include formal engineered design and an appropriate level of environmental review and documentation. Ground disturbance, loss of vegetation, and weed and invasive plant growth from new disturbance would be localized and temporary, as the application of best management practices in these areas such as seeding and planting would accelerate stabilization. Like Alternative B, a limited number of Special Recreation Permits could be issued under this alternative, potentially increasing OHV and recreation use in the Project Area.

Under Alternative C, the same types of effects from OHV use noted above on soils, vegetation, and watershed health would continue to occur on those routes designated OHV-Open. Routes designated OHV-Limited would likely help reduce route widening or user inclination to travel off-route and create new soil disturbance. Overall, this alternative's potential for OHV- and recreation-

related impacts to soils, vegetation, and watershed health would be lower than Alternatives A and D but higher than Alternative B.

Alternative D (Multiple Use Emphasis)

Alternative D would designate all 6 routes in highly erosive soils for OHV use. Three of these would be designated OHV-Limited, limited by vehicle type or width, resulting in more diverse OHV opportunities (i.e., single-track trails) that would likely help reduce route widening or user inclination to travel off-route and create new soil disturbance. In areas of moderately erosive soils, Alternative D would designate 99 routes for OHV use and close the rest; of the routes designated for OHV use, 50 would be limited by vehicle type or width; of the 16 OHV-Closed routes, 3 would be designated for non-motorized use, 5 would be designated for authorized use only, and the rest would be decommissioned and earmarked for reclamation. In the Project Area overall, Alternative D would designate 128.1 miles for OHV use, a 7% reduction compared to Alternative A; this includes a 6% reduction in the Chihuahuan Basins and Playas ecoregion, an 8% reduction in the Chihuahuan Desert Grasslands ecoregion, and a 45% (0.5-mile) reduction in the Rio Grande Floodplain ecoregion. Of the 9.8 overall miles that would be closed to public OHV use under this alternative, 2.2 miles would be reserved for non-motorized use, 4.6 miles would be designated for authorized use only, and the remainder would be decommissioned and earmarked for reclamation. In areas of invasive species, Alternative D would designate all 5 routes as OHV-Open, the same as Alternative A. In riparian/spring areas, Alternative D would designate 2 as OHV-Open, a 1-route reduction from Alternative A.

Alternative D would provide for the highest level of development and installation of visitor services amenities such as parking areas, shade structures, vault toilets, and campsites. As compared to the other action alternatives. Development would include formal engineered design and an appropriate level of environmental review and documentation. Ground disturbance, loss of vegetation, and weed and invasive plant growth from new disturbance would be localized and temporary, as the application of best management practices in these areas such as seeding and planting would accelerate stabilization. An unlimited number of Special Recreation Permits could be issued under this alternative, potentially increasing OHV and recreation use in the Project Area.

Under Alternative D, the same types of effects from OHV use noted above on soils, vegetation, and watershed health would continue to occur on those routes designated OHV-Open. Routes designated OHV-Limited would likely help reduce route widening or user inclination to travel off-route and create new soil disturbance. Overall, this alternative's potential for OHV- and recreation-related impacts to soils, vegetation, and watershed health would be lower than Alternative A but higher than the other action alternatives.

3.2.2 Wildlife: Special Status Species

How would the proposed travel route designation and recreation area management plan alternatives impact special status wildlife species and their habitat within the Project Area?

Affected Environment

The BLM ran a U.S. Fish and Wildlife Service (USFWS) IPaC (Information for Planning and Consultation) report that identified 14 threatened or endangered species and 7 migratory birds for the Project Area. These species are generated by county, so they may or may not actually occur in

the Project Area. Based on BLM and USFWS knowledge, no threatened or endangered species have been documented in the Project Area. Three species do occur adjacent to the Project Area: Southwestern willow flycatcher, yellow-billed cuckoo, and Rio Grande silvery minnow.

Southwestern willow flycatcher (*Empidonax traillii*) is a small neotropical migratory bird that exclusively nests in dense tree and shrub riparian habitats. It was listed as endangered on February 27, 1995 (60 FR 10694). The historical range of the species included Arizona, California, Colorado, New Mexico, Texas, and Utah. The current range is similar but the quantity of suitable habitat within that range has been greatly reduced. Although often considered to use only cottonwood-willow associations, it is known to nest in various exotic species in the southwest, such as tamarisk and Russian olive. In general, its distribution follows its riparian habitat: relatively small, isolated, widely dispersed locales. On October 19, 2005, 120,824 acres of critical habitat were formally designated across Arizona, New Mexico, California, Nevada, and Utah (70 FR 60886 61009), including along the Rio Grande River corridor to the west of the Project Area.

Yellow-billed cuckoo (*Coccyzus americanus*) was listed as threatened on October 3, 2014 (79 FR 59991 60038). It is a riparian-obligate species found intermittently throughout the western United States that nests in low to moderate elevation deciduous riparian woodlands (Halterman et al. 2016). Much of the yellow-billed cuckoo riparian habitat has been converted to farmland and housing, leading to population declines. Critical habitat was formally proposed on August 15, 2014 (79 FR 48547 48652) and revised on February 27, 2020 (85 FR 11458 11594). It includes 493,665 acres in Arizona, California, Colorado, Idaho, New Mexico, Texas, and Utah, including to the west of the Project Area. The cuckoo was listed due to loss of riparian habitat from agricultural use, water use, road development and urban development. Ongoing threats include habitat destruction and degradation from the invasion of tamarisk, which is exacerbated by livestock use of riparian areas, water withdrawals, and human development (Halterman et al. 2016).

Rio Grande silvery minnow (*Hybognathus amarus*) was listed as endangered on July 20, 1994 (59 FR 36988 36995). Critical habitat was designated on February 19, 2003 (68 FR 8088 8135), including the segment of the Rio Grande River west of the Project Area. It was historically one of the most abundant and widespread fishes in the Rio Grande Basin. Its decline has been attributed to modification of the flow regime and channel drying as a result of physical modifications to the River. The species occupies a variety of habitats in low-gradient, large streams with shifting sand or silty bottoms, which is generally associated with a meandering river that includes sidebars, oxbows, and backwaters.

Environmental Effects Analysis

Both Southwestern willow flycatcher and yellow-billed cuckoo inhabit dense riparian tree and shrub habitats associated with rivers and wetlands. The Project Area consists entirely of uplands; no river or habitat associated with the river is present. At its nearest point, the project area is ¾ of a mile from the Rio Grande and ¼ of a mile from dense river vegetation such as salt cedar and Russian olive. The Johnson Hill Travel Management Plan analyzes existing routes—no new routes are proposed. The Project Area is adjacent to the community of Pueblito. Bosquecito Road, a well-traveled county road, divides the project area from the residential area and the river. Use of the county road and the off-road routes is currently occurring and will happen no more or less with the approval of the Travel Management Plan. Therefore, the current state would be a baseline for future management decisions. Due to existing disturbance and distance from the river and species

habitat, a No Effect determination has been made for Southwestern willow flycatcher and yellow-billed cuckoo.

A model was run to measure sediment output on drainages downstream from the Project Area. Sediment was found to be low because silt was less than 20 percent and sand was dominant. Channels in the area are rocky, have good sinuosity, and are somewhat vegetated. Therefore, travel from OHV use is not causing excessive sediment into the Rio Grande which would be detrimental to fish species. A No Effect determination has been made for the Rio Grande silvery minnow.

3.2.3 Wildlife Habitat: General Wildlife and Migratory Birds

How would the proposed travel route designation and recreation area management plan alternatives impact general wildlife and migratory birds and their habitat within the Project Area?

Affected Environment

The Project Area supports various big game and other general wildlife species, including migratory birds. Project Area route density along with habitat fragmentation could slightly vary depending on which alternative is selected. Not all wildlife, wildlife habitat, and potential effects on these resources from the alternatives are discussed below; rather, only those that are most likely to be affected and were identified as issues in scoping. These include Gambel's quail, mule deer, and migratory birds. The entire Project Area provides habitat potential for these wildlife species.

Gambel's quail (*Callipepla gambelii*) is a "ground-hugging desert dweller" of the Southwest, with a range that includes east-central California, southern Nevada, southern Utah, western Colorado, and northwestern New Mexico south to northeastern Baja California, Sonora, coastal Sinaloa, northern Chihuahua, and western Texas. Gambel's quail inhabit brushy desert habitats and are predominantly associated with desert grassland, scrubland, and riparian habitats. They usually live near water, in river valleys or near streams. They nest on the ground under the cover of small trees, shrubs, grass tufts, etc. The entire Project Area offers habitat potential for Gambel's quail. (BLM 2008b, NSE 2021)

Mule deer (*Odocoileus hemionus*) is a native species that is found throughout the Project Area and the state of New Mexico and is adaptable to a wide variety of habitat types. Mule deer 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. Habitat is the most important factor for mule deer populations; ideal habitat provides both browse and cover. Mule deer feed on forbs, grasses, and shrubs throughout the spring and summer months and primarily on shrubs during the fall and winter. Though mule deer in New Mexico are most common within coniferous forest and mixed coniferous woodlands and riparian areas, they are also found in various scrubland and grassland habitats characteristic of the Project Area. (BLM 2008b, NMSU 2014)

Migratory birds, including nesting raptors, use the Project Area for foraging, roosting, and nesting. Many migratory birds depend on riparian areas (for more on riparian resources, see Section 3.2.1), so riparian vegetation is particularly valuable, both during migration and for nesting. The riparian corridor of the Rio Grande Valley, just to the west of the Project Area, serves as an important flyway and stopover area for migratory bird species (BLM 2008b). Nesting habitat for migratory birds includes tree limbs, ground sites, and rock outcrops. Raptors are widely accepted to be indicator species of environmental health because of their position at the top of food

chains. Romin and Muck state that "Each raptor nest, its offspring, and supporting habitats are considered important to the long-term viability of raptor populations and are vulnerable to disturbance by many human activities" (2002). The list below was generated from the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) System (USFWS 2021) and is based on geographic information system (GIS) data for Project Area boundaries. It lists Migratory Bird Treaty Act species present or potentially present in the area that are of particular concern because they are on the Birds of Conservation Concern list or warrant special attention in the Project Area.

Table 3.2: Migratory Birds of Particular Concern

Common Name	Scientific Name
Cassin's Sparrow	*Aimophila cassinii*
Chestnut-collared	*Longspur Calcarius ornatus*
Evening Grosbeak	*Coccothraustes vespertinus*
Ferruginous Hawk	*Buteo regalis*
Grace's Warbler	*Dendroica graciae*
Pinyon Jay	*Gymnorhinus cyanocephalus*
Virginia's Warbler	*Vermivora virginiae*

Environmental Effects Analysis

The nature and type of impacts on big game and other general wildlife and their habitats from recreation and OHV uses can include habitat avoidance and abandonment, interference of daily movement and foraging, increased physical stress that can result in decreased health and parturition, and increased vehicle encounters 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 recreation and travel-related surface disturbances from motorized and non-motorized vehicle travel (NMDGF 2005). Such use can result in:

- Increased soil erosion and direct loss of important foraging, breeding, and security cover 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
- Division of large landscapes into smaller patches; conversion of interior habitat to edge habitat (NMDGF 2005)
- Increased noise disturbance (Ouren et al. 2007)

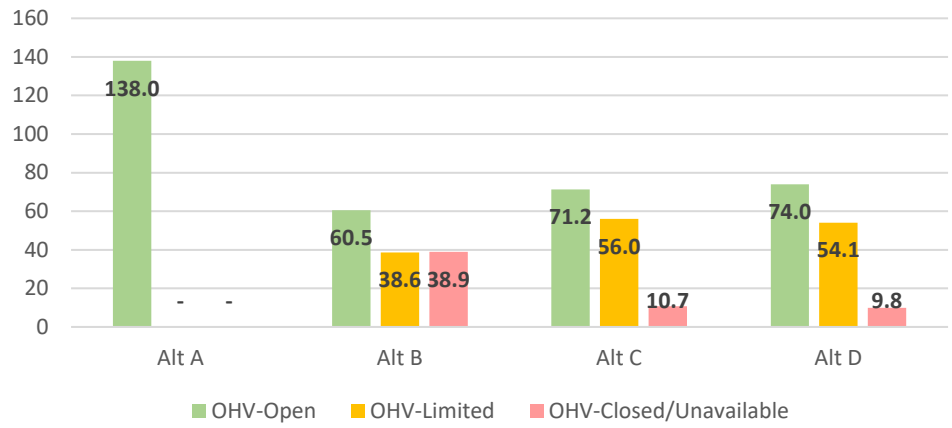
The potential for direct and indirect impacts on wildlife from recreation and OHV use in the Project Area can be estimated by comparing projected use, and, in the case of OHV use, miles or number or routes in or near wildlife habitats. Conversely, designated travel routes and recreation facility

improvements can also benefit resource management by providing access for vegetation monitoring, wildlife monitoring, wildlife habitat improvement projects, interpretive and environmental education projects, hunting and legal game retrieval, invasive species treatment, and wildland fire suppression. Hunting and game retrieval access serves to support New Mexico Department of Game and Fish (NMDGF) management efforts where hunting is used as a management tool to control populations of big game species.

Proposed recreation-related enhancements and management that could affect wildlife and their habitats include installing new information and interpretive kiosks and signs, vault toilets, preparing new maps and brochures, road, trail, and parking area maintenance or improvements, route decommissioning and reclamation (including ripping the ground and planting seed, grading/recontouring), and installing fencing or barriers. Ground disturbance and loss of habitat from implementation activities (e.g., kiosk installation) would be localized and temporary, as seeding or planting of disturbed areas could effectively accelerate reclamation and help to reestablish habitat.

The wildlife analysis below focuses on the wildlife species listed above, but disclosed impacts would apply to other wildlife species that inhabit the Project Area as well. Because the entire Project Area contains some level of potential wildlife habitat, Figure 3.8 shows total miles of routes by major designation for each alternative.

Figure 3.8: Miles of Routes in General Wildlife and Migratory Bird Habitat



Alternative A (No Action)

Under Alternative A, all 138.0 miles of evaluated routes are open to OHV use. Given that all miles of routes are currently open to OHV use, Alternative A provides substantial access for management purposes but also has the highest potential for adverse OHV use-related impacts to wildlife such as disruption, habitat avoidance, interference of movement, injury or mortality, habitat loss, and habitat fragmentation.

Alternative B (Enhanced Resource Protection Emphasis)

In general wildlife and migratory bird habitat, Alternative B would designate 99.1 miles of evaluated routes for OHV use (OHV-Open or OHV-Limited), a 28% reduction compared to Alternative A. Of the routes closed to OHV use under this alternative, 0.3 miles would be designated for non-motorized use and 7.9 miles would be designated for authorized use only (e.g.,

livestock grazing permittees). The other 30.6 miles would be decommissioned and earmarked for reclamation, eventually reducing habitat fragmentation. Effects noted above on general wildlife and migratory birds would continue to occur from those routes designated OHV-Open or OHV-Limited under this alternative.

Under Alternative B, development and installation of visitor services amenities such as parking areas, vault toilets, and campsites would be considered on a case-by-case basis, include formal engineered design, and be subjected to an appropriate level of environmental review and documentation. These developments could result in additional ground disturbance, loss of vegetation, and habitat fragmentation. A limited number of Special Recreation Permits would be issued on a case-by-case basis under this alternative, potentially increasing OHV and recreation use in the Project Area.

Overall, the reductions in miles designated for OHV use under Alternative B would result in the lowest potential of any of the alternatives for adverse impacts to general wildlife and migratory birds while still providing adequate administrative access for management purposes.

Alternative C (Blended Protection/Use Emphasis)

In general wildlife and migratory bird habitat, Alternative C would designate 127.2 miles of evaluated routes for OHV use (OHV-Open or OHV-Limited), an 8% reduction compared to Alternative A. Of the routes closed to OHV use under this alternative, 2.2 miles would be designated for non-motorized use and 5.4 miles would be designated for authorized use only (e.g., livestock grazing permittees). The other 3.2 miles would be decommissioned and earmarked for reclamation, over time resulting in a reduction in habitat fragmentation. Effects noted above on general wildlife and migratory birds would continue to occur from those routes designated OHV-Open or OHV-Limited under this alternative.

Alternative C would provide for a higher level of development and installation of visitor services amenities such as parking areas, vault toilets, and campsites as compared to Alternative B. These developments would include formal engineered design and an appropriate level of environmental review and documentation. They could result in additional ground disturbance, loss of vegetation, and habitat fragmentation. A limited number of Special Recreation Permits would be issued under this alternative, potentially increasing OHV and recreation use in the Project Area.

Overall, the reductions in miles designated for OHV use under Alternative C would result in lower potential for adverse impacts to general wildlife and migratory birds than Alternatives A and D but higher potential than Alternative B.

Alternative D (Multiple Use Emphasis)

In general wildlife and migratory bird habitat, Alternative D would designate 128.1 miles for OHV use (OHV-Open or OHV-Limited), a 7% reduction compared to Alternative A. Of the routes closed to OHV use under this alternative, 2.2 miles would be designated for non-motorized use and 4.6 miles would be designated for authorized use only (e.g., livestock grazing permittees). The other 3.0 miles would be decommissioned and earmarked for reclamation, eventually reducing habitat fragmentation. Effects noted above on general wildlife and migratory birds would continue to occur from those routes designated OHV-Open or OHV-Limited under this alternative.

Alternative D would provide for the highest level of development and installation of visitor services amenities such as parking areas, shade structures, vault toilets, and campsites as compared

to the other action alternatives. These developments would include formal engineered design and an appropriate level of environmental review and documentation. They could result in additional ground disturbance, loss of vegetation, and habitat fragmentation. An unlimited number of Special Recreation Permits would be issued under this alternative, potentially increasing OHV and recreation use in the Project Area.

Overall, the reductions in miles designated for OHV use under Alternative D would result in lower potential for adverse impacts to general wildlife and migratory birds than Alternative A but higher potential than the other action alternatives.

3.2.4 Visual Resources

How would the proposed route designation and recreation area management alternatives impact visual resources within the Project Area?

Affected Environment

The Project Area's diverse topography includes deeply dissected canyons, high sandstone and limestone bluffs, terraces, and escarpments. Higher elevations offer scenic views of the Rio Grande Valley to the west.

The quality of visual resources is *measured* with visual resource inventory classes. These classes are assigned through an inventory process and serve as the basis for considering visual values. As noted in the BLM's visual resource inventory manual, "Inventory classes are informational in nature and provide the basis for considering visual values in the Resource Management Planning 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. Class I contains the highest visual quality and Class IV the lowest visual quality.

Visual resources in the Project Area are *managed* in accordance with the 2010 RMP. Visual resource management is a process the BLM uses to manage scenic values to reduce visual impacts of development or other surface-disturbing activities on public lands. There are four visual resource classes: I, II, III, and IV. Class I is assigned to areas where management decisions have been made to maintain natural landscapes, and Class IV is assigned to areas where decisions have been made to provide for activities that involve major landscape character modification. Visual resource management classes are assigned through Resource Management Plans, in this case the 2010 Socorro RMP, and are used as a basis for management (BLM 1986).

The miles of evaluated routes by Visual Resource Inventory Class in the Project Area are as follows:

Table 3.3: Miles of Evaluated Routes by Visual Resource Inventory (VRI) Class

VRI Class	Acres on BLM	Miles of Evaluated Routes within VRI Class
VRI Class II	8,786	115.8
VRI Class III	1,715	22.2

Table 3.4: Miles of Evaluated Routes by Visual Resource Management (VRM) Class

VRM Class	Acres on BLM	Miles of Evaluated Routes within VRM Class
VRM Class II	3,856	44.2
VRM Class III	4,401	55.1
VRM Class IV	2,257	38.7

Environmental Effects Analysis

Existing travel routes and OHV use can contribute to damage and disruption to the natural appearance of landscapes by providing opportunities for route proliferation (i.e., user-created routes extending off existing routes). Other travel-related surface disturbances such as roadside camping can lead to expansion of invasive species and noxious weeds and subsequently higher potential for disruptive wildfire events and substantial visual resource degradation. Routes also impact visual resources by creating contrasting lines where they do not follow natural landscape contours. User-created routes typically do not follow ground contours and can extend up slopes, leading to rilling, erosion, and contrasting lines. Changes in color and form from road cuts and fills create visible impacts. However, the formal establishment of a route network that includes operation and management components (such as those provided in the action alternatives) can minimize route proliferation and future degradation of visual resources. Under all action alternatives, the application of specified operation and management tools provided in the Implementation Guide—such as 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 route designation decision for each travel route, it is assumed there will be follow-up action on the ground. For permanently closed routes, it can be assumed that actions would include the placement of closure signs, reclamation, or installation of barricades. For routes designated for OHV use, maintenance actions may include the use of heavy equipment for grading and drainage maintenance or hand tools for directional signing. The effects of these actions on visual resources are expected to be minor and short-term but are included in this analysis. Overall, the route designations will result in some routes being closed, thereby eventually reducing the overall footprint of the route network. More site-specific analysis of maintenance or management actions may be needed if such actions could affect high-quality visual landscapes.

Proposed recreation site and facilities developments such as staging and parking areas in the Recreation Management Plan alternatives would be consistent with the existing Visual Resource Management Classes. Best management practices, including application of the Standard Environmental Color Chart and visual contrast rating forms would be used in all alternatives to safeguard the Project Area scenic quality and values. The greatest threat to scenic quality in the Project Area in general is route proliferation and other recreation-related disturbances such as camping, campfires, etc. that could result in damage or degradation of the areas native vegetative cover and create unnatural contrast in line, shape, or color.

Indicators of potential OHV and recreation-related effects to visual resources include the miles of OHV routes open, limited or closed as shown below in Figure 3.9 and Figure 3.10, below, and the proposed extent of recreation development as presented in the Recreation Area Management Plan Alternatives as shown in Table 2.2 in Chapter 2. Analysis does not include Class I because no miles of evaluated routes are within areas inventoried or managed as Class I. Analysis also does

not include Class III and IV because they allow for changes in form, line, and color and would not provide for a useful comparison between alternatives.

Figure 3.9: Miles of Evaluated Routes in Visual Resource Inventory Class II

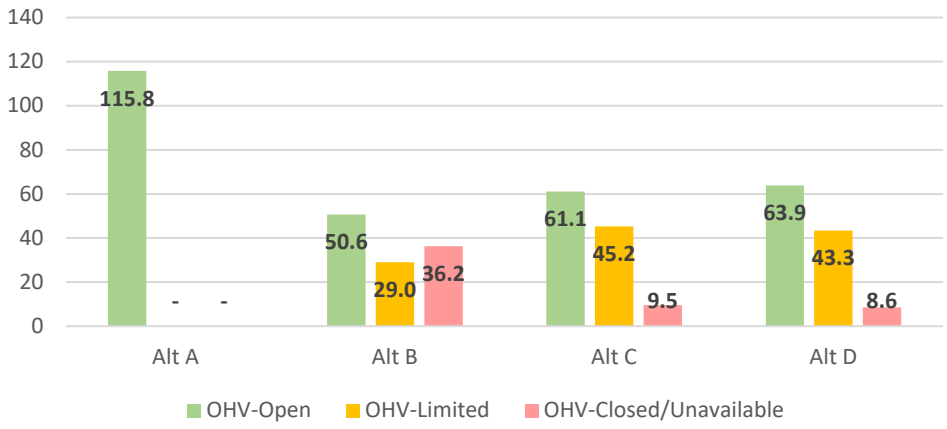
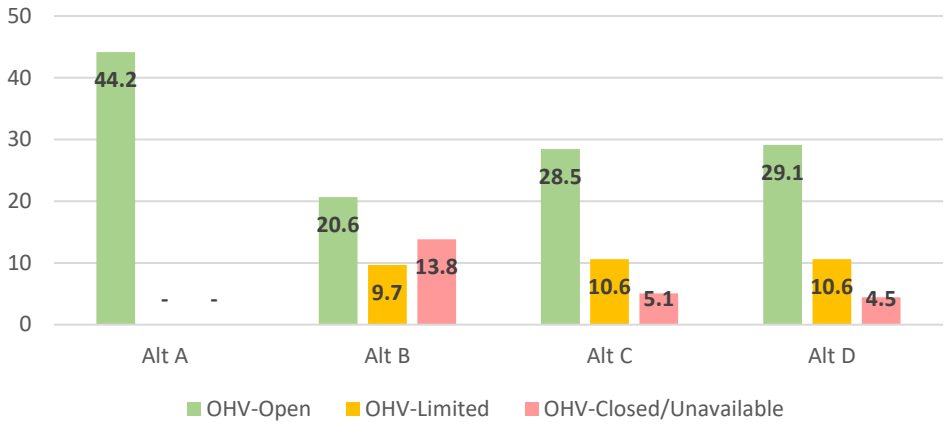


Figure 3.10: Miles of Evaluated Routes in Visual Resource Management Class II



Alternative A (No Action)

Of the total evaluated route miles in the Project Area, 84% are in Visual Resource Inventory Class II and 32% are in Visual Resource Management Class II. Under Alternative A, all of these evaluated route miles would remain open to OHV use and the effects described above would continue to occur. Consequently, Alternative A is expected to have moderate potential for adverse effects from off-route OHV travel (e.g., creating new routes, trampling and damage to vegetation, weed spread, fire scars from human-caused wildland fire ignition, etc.) and continued long-term impacts to visual elements of line, form, and color proportional to the use of the routes.

Alternative B (Enhanced Resource Protection Emphasis)

In Visual Resource Inventory Class II areas, Alternative B would designate 79.6 miles for OHV use (OHV-Open or OHV-Limited), a 31% reduction compared to Alternative A. In Visual Resource Management Class II areas, this alternative would designate 30.3 miles for OHV use, a 31% reduction from Alternative A. The reductions in miles of routes in these areas, most of which would be decommissioned and earmarked for reclamation—including 29.2 miles in Visual

Resource Inventory Class II and 10.3 miles in Visual Resource Management Class II—would help to improve visual quality over time once these routes are totally reclaimed. The same types of impacts noted above to the area's visual resources would continue to occur on those routes designated OHV-Open or OHV-Limited.

Under Alternative B, development and installation of visitor services amenities such as parking areas, vault toilets, and campsites would be considered on a case-by-case basis, include formal engineered design, and be subjected to an appropriate level of environmental review and documentation.. These developments could impact the area's visual resources although proposed recreation site and facilities developments such as staging and parking areas in the Recreation Area Management Plan alternatives would be consistent with the existing Visual Resource Management Classes.

Overall, this alternative's potential for recreation and OHV use-related impacts to the area's visual resources would be the lowest of any alternative.

Alternative C (Blended Protection/Use Emphasis)

In Visual Resource Inventory Class II areas, Alternative C would designate 106.3 miles for OHV use, an 8% reduction compared to Alternative A. In Visual Resource Management Class II areas, this alternative would designate 39.1 miles for OHV use, a 12% reduction from Alternative A. Of the routes that would be closed in Visual Resource Inventory Class II, 3.1 miles would be decommissioned and earmarked for reclamation; and of the routes that would be closed in Visual Resource Management Class II, 1.3 miles would be decommissioned and earmarked for reclamation, eventually improving visual quality once these routes are totally reclaimed. The same types of impacts noted above to the area's visual resources would continue to occur on those routes designated OHV-Open or OHV-Limited.

Alternative C would provide for a higher level of development and installation of visitor services amenities such as parking areas, vault toilets, and campsites as compared to Alternative B. These developments would include formal engineered design and an appropriate level of environmental review and documentation. They could impact the area's visual resources although, like Alternative B, proposed recreation site and facilities developments such as staging and parking areas in the Recreation Area Management Plan alternatives would be consistent with the existing Visual Resource Management Classes.

Overall, Alternative C's potential for recreation and OHV use-related impacts to the area's visual resources would be lower than Alternatives A and D but higher than Alternative B.

Alternative D (Multiple Use Emphasis)

In Visual Resource Inventory Class II areas, Alternative D would designate 107.2 miles for OHV use, a 7% reduction compared to Alternative A. In Visual Resource Management Class II areas, this alternative would designate 39.7 miles for OHV use, a 10% reduction from Alternative A. Of the routes that would be closed in Visual Resource Inventory Class II, 3.0 miles would be earmarked for reclamation, and of the routes that would be closed in Visual Resource Management Class II, 1.3 miles would be decommissioned and earmarked for reclamation, eventually improving visual quality once these routes are totally reclaimed. The same types of impacts noted above to the area's visual resources would continue to occur on those routes designated OHV-Open or OHV-Limited.

Alternative D would provide for the highest level of development and installation of visitor services amenities such as parking areas, shade structures, vault toilets, and campsites as compared to the other action alternatives. These developments would include formal engineered design and an appropriate level of environmental review and documentation. They could impact the area's visual resources, although, like Alternatives B and C, proposed recreation site and facilities developments such as staging and parking areas in the Recreation Area Management Plan alternatives would be consistent with the existing Visual Resource Management Classes.

Overall, Alternative D's potential for recreation and OHV use-related impacts to the area's visual resources would be lower than Alternative A but higher than the other action alternatives.

3.2.5 Cultural Resources

How would the proposed route designation and recreation area management alternatives impact cultural resources within the project area?

Affected Environment

Cultural resources is a broad term including anything from isolated artifacts to complex cultural sites; cultural resources may or may not be considered Historic Properties as defined in the National Historic Preservation Act of 1966. BLM Manual 8100 – Foundations for Managing Cultural Resources, defines cultural resources as "those fragile and nonrenewable remains of human activity, occupation, or endeavor, including districts, sites, structures, buildings, objects, historical documents, artifacts, ruins, works of art, architecture, natural features, folkways, customs, legends, and oral history that were of importance in human events. These cultural resources may consist of (1) physical remains, (2) areas where significant human events occurred—even though evidence of the event no longer remains, (3) the environment immediately surrounding the actual resource, and (4) oral history or ethnographic accounts of lifeways and customs" (BLM 2004a).

The Johnson Hill Project Area covers 10,514 BLM acres. Within this area, 7,376 acres have had previous cultural survey, which makes up 70% of the Project Area. Within this area 40 sites have been found adjacent to or intersected by travel routes. There are 21 routes, 17% of the evaluated network, in or proximate to (within ¼ mile of) eligible cultural sites; 7 routes, 6% of the network, in or proximate to unevaluated sites; and 2 routes in or proximate to not eligible sites.

Environmental Effects Analysis

Cultural resources can be affected by OHV use. The direct and indirect impacts on cultural resources from recreation and OHV use can be gauged by examining the number and use of travel routes in proximity to known cultural sites. OHV use and recreation such as hiking, exploring, etc. can cause surface disturbances and accelerated erosion which in turn can expose sites to damage, theft, and vandalism. Limiting travel to designated routes, providing amenities such as parking areas and targeted OHV activities, directing and controlling use through signing and fencing while specifying a variety of modes of travel and user-types (e.g., single-track or non-motorized) is more likely to reduce off-route use and protect cultural resources within the Project Area.

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, and the reasons users select the route for travel.

Implementation activities that could directly affect cultural resources include installation or construction of improvements and amenities such as kiosks, fencing, parking areas, campsites, etc. Maintenance associated with routes includes activities such as surface and ditch grading, drainage structure installation or replacement (construction of lead-off ditches, etc.), ripping and seeding of closed routes, and installation of signs and 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.

As Figure 3.11 – Figure 3.13 demonstrate, there is little difference in regard to potential impacts to cultural resources between Alternatives B, C, and D.

Figure 3.11: Number of Evaluated Routes in or Proximate to Eligible Cultural Resources

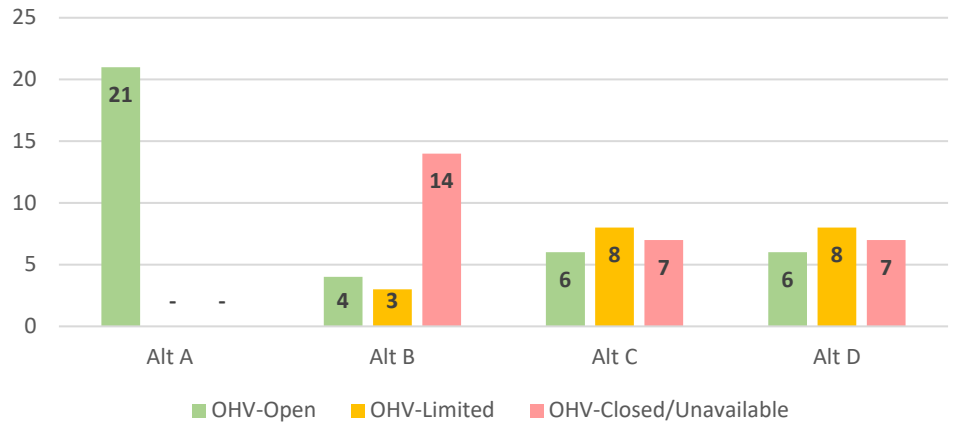


Figure 3.12: Number of Evaluated Routes in or Proximate to Unevaluated Cultural Resources

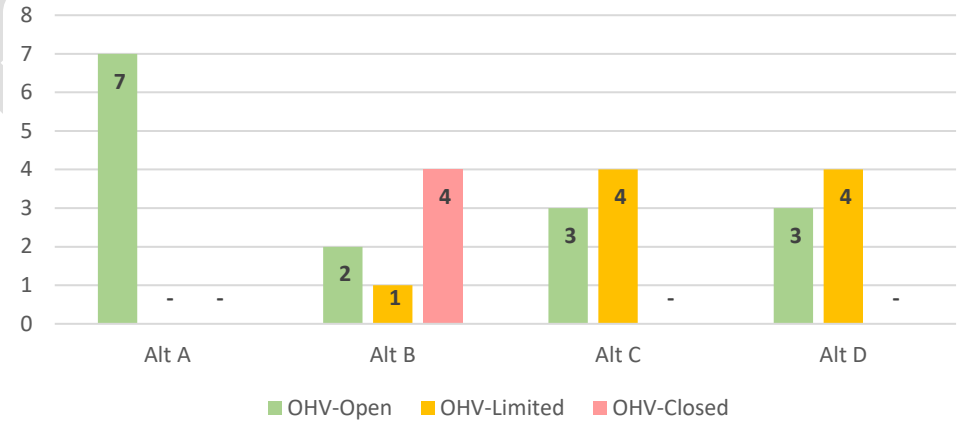
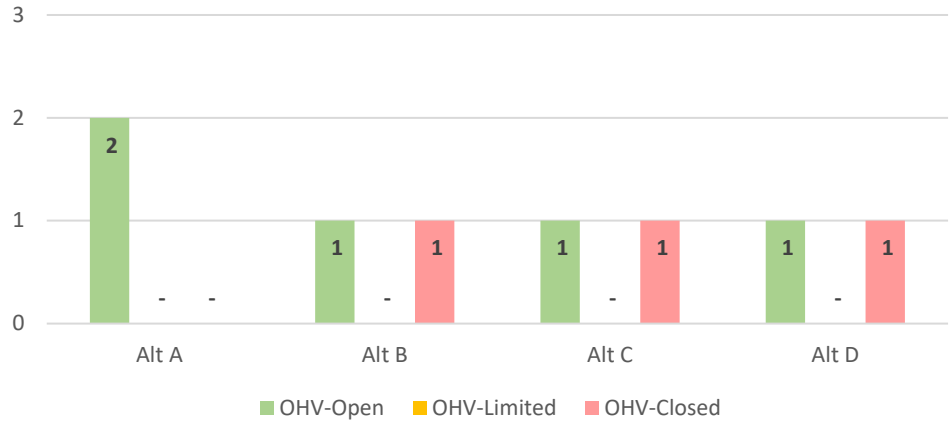


Figure 3.13: Number of Evaluated Routes in or Proximate to Not Eligible Cultural Resources



Alternative A (No Action)

Under Alternative A, all routes proximate to (within ¼ mile of) National Register-eligible sites, unevaluated sites, and not eligible sites would remain available for OHV use. Impacts to cultural resources from ongoing OHV use (i.e., direct damage from trampling, theft, and vandalism; erosion and exposure of sites from travel-related disturbances that leaves sites more susceptible to loss and damage; access that is beneficial for interpretive or educational opportunities) would reflect continuation of current management.

Alternative B (Enhanced Resource Protection Emphasis)

Of the evaluated routes proximate to eligible sites within the Project Area, Alternative B would designate 7 for OHV use (OHV-Open or OHV-Limited), a 67% reduction compared to Alternative A. Of the routes proximate to unevaluated sites, 3 would be designated for OHV use, a reduction of 57% compared to Alternative A. One of the two routes proximate to not eligible sites would be designated for OHV use, a reduction of one route from Alternative A. Under Alternative B, the same types of effects on cultural resources from OHV use noted above would continue to occur on those routes designated for OHV use. Overall, given decreases in routes designated for OHV use, this alternative would have the least potential of any of the alternatives for recreation and OHV-related impacts to cultural resources within the Project Area.

Alternative C (Blended Protection/Use Emphasis)

Of the evaluated routes proximate to eligible sites within the Project Area, Alternative C would designate 14 for OHV use, a 33% reduction compared to Alternative A; additionally, 6 of these routes would be limited to single-track width. All 7 routes proximate to unevaluated sites would be designated for OHV use, the same as Alternative A; 4 of the 7, however, would be limited to single-track. One of the two routes proximate to not eligible sites would be designated for OHV use, a reduction of one route from Alternative A. Under Alternative C, the same types of effects on cultural resources from OHV use noted above would continue to occur on those routes designated for OHV use. Overall, given decreases in routes designated OHV-Open and an increase in routes limited to single-track width, Alternative C would have lower potential than Alternative A but higher potential than Alternative B for recreation and OHV-related impacts to cultural resources within the Project Area.

Alternative D (Multiple Use Emphasis)

Of the evaluated routes proximate to eligible sites within the Project Area, Alternative D would designate 14 for OHV use, a 33% reduction compared to Alternative A; additionally, 6 of these routes would be limited to single-track width. All 7 routes proximate to unevaluated sites would be designated for OHV use, the same as Alternative A; 4 of the 7, however, would be limited to single-track. One of the two routes proximate to not eligible sites would be designated for OHV use, a reduction of one route from Alternative A. Under Alternative D, the same types of effects on cultural resources from OHV use noted above would continue to occur on those routes designated for OHV use. Overall, given decreases in routes designated OHV-Open and an increase in routes limited to single-track width, Alternative D would have lower potential than Alternative A but higher potential than Alternatives B and C for recreation and OHV-related impacts to cultural resources within the Project Area.

3.2.6 Paleontology

How would the proposed route designation and recreation area management alternatives impact paleontological resources within the project area?

Affected Environment

In the Potential Fossil Yield Classification System, geologic units are assigned a class based on the relative abundance of paleontological resources and their sensitivity to adverse impacts. This classification is applied to the geologic formation because occurrences of paleontological resources are known to be correlated with geological formations. Potential Fossil Yield Classes 1 and 2 formations are not likely to contain recognizable paleontological resources, or they have not yet been well-documented in the formation. Potential Fossil Yield Classes 1 and 2 are not discussed further in this environmental analysis because their probability of containing fossil resources is low to non-existent. Potential Fossil Yield Classes 3, 4, and 5 formations have medium, high, or very high likelihood of paleontological resources. During route evaluations, the BLM team considered the Potential Fossil Yield class of formations in conjunction with known fossil localities.

Table 3.5: Acres of BLM Land and Miles of Evaluated Routes in Potential Fossil Yield Classes

Potential Fossil Yield Class (PFYC)	Acres on BLM	Miles of Evaluated Routes
PFYC Class 1	7	0.1
PFYC Class 2	3,207	51.2
PFYC Class 3	2,043	20.1
PFYC Class 4	5,256	66.6
PFYC Class 5	0	0.0

Environmental Effects Analysis

Use of OHV routes in the Project Area, including incidental use such as passing, parking, and staging, may result in crushing or damage to paleontological resources by vehicle tires on the roads, illegal collection, or vandalism. A final designated travel network would provide management (such as monitoring and mitigation) for OHV route-related use that could adversely

affect these paleontological resources. Route designations and recreation management alternatives that limit or restrict OHV and recreation use can reduce the volume or frequency of use, thereby minimizing effects to paleontological resources.

Implementation activities that could directly affect paleontological resources include installation or construction of improvements and amenities such as kiosks, fencing, parking areas, campsites, etc. Maintenance associated with routes includes activities such as surface and ditch grading, drainage structure installation or replacement (construction of lead-off ditches, etc.), ripping and seeding of closed routes, installation of signs and 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.

The Potential Fossil Yield Class is created from available geologic maps and assigns a class value to each geological unit, representing the potential abundance and significance of paleontological resources that occur in that geological unit. The miles present in the Potential Fossil Yield Class indicate the potential effects each alternative route network may have on paleontological resources.

Figure 3.14: Miles of Evaluated Routes in Paleontological Fossil Yield Class 3 (Moderate)

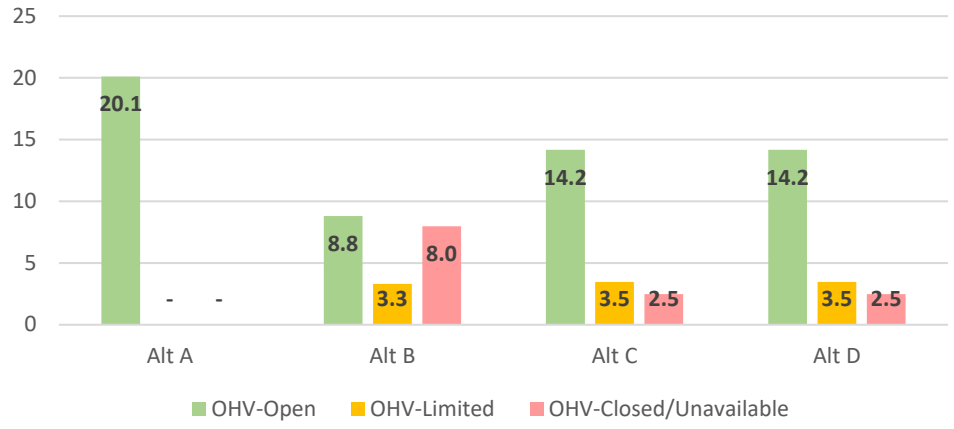
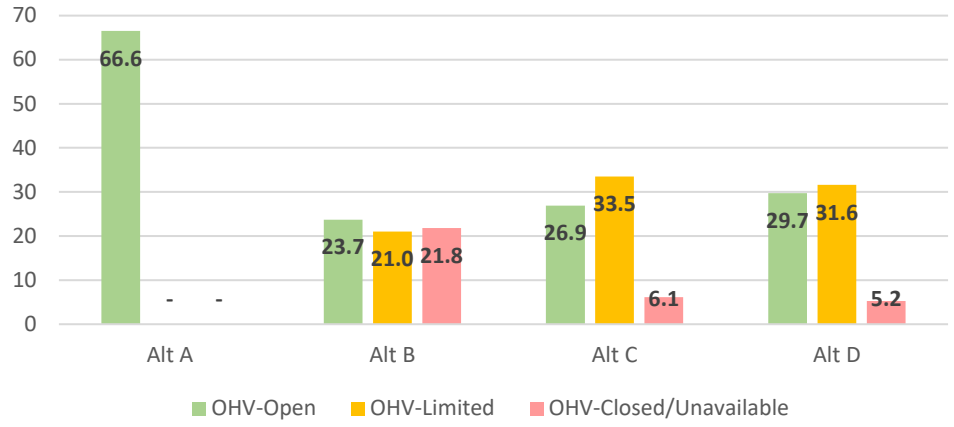


Figure 3.15: Miles of Evaluated Routes in Paleontological Fossil Yield Class 4 (High)



Alternative A (No Action)

Under Alternative A, all of the 86.7 miles of evaluated routes in moderate or high Potential Fossil Yield Class areas would remain open to OHV use. The effects described above from vehicle use and maintenance of the routes would continue to occur on these routes. Impacts to the Project Area's paleontological resources (i.e., crushing or damage, illegal collection, vandalism, etc.) would reflect a continuation of current management.

Alternative B (Enhanced Resource Protection Emphasis)

Alternative B would designate 56.8 miles of evaluated routes in moderate or high Potential Fossil Yield Class areas for OHV use (OHV-Open or OHV-Limited), a 34% reduction compared to Alternative A. The effects described above from vehicle use and maintenance of the routes would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, Alternative B would have the lowest potential of any alternative for recreation and OHV use-related impacts to paleontological resources within the Project Area.

Alternative C (Blended Protection/Use Emphasis)

Alternative C would designate 78.1 miles of evaluated routes in moderate or high Potential Fossil Yield Class areas for OHV use, a 10% reduction compared to Alternative A. The effects described above from vehicle use and maintenance of the routes would continue to occur on 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 recreation and OHV use-related impacts to paleontological resources within the Project Area.

Alternative D (Multiple Use Emphasis)

Alternative D would designate 79.0 miles of evaluated routes in moderate or high Potential Fossil Yield Class areas for OHV use, a 9% reduction compared to Alternative A. The effects described above from vehicle use and maintenance of the routes would continue to occur on those routes designated OHV-Open or OHV-Limited. Overall, Alternative D would have lower potential than Alternative A but higher potential than the other action alternatives for recreation and OHV use-related impacts to paleontological resources within the Project Area.

3.2.7 Cumulative Effects for Issue 1

The cumulative impact analysis area used to analyze cumulative impacts for several of the resource topics analyzed in Section 3.2 under Issue 1 consists of the entire Project Area. These topics and other Issue 1 resource topics for which the cumulative impact analysis area is contained within, or extends beyond the Project Area, are presented below in Table 3.6.

Table 3.6: Cumulative Impact Analysis Area and Past, Present, or Reasonably Foreseeable Actions, Plans, or Projects for Issue 1

Resource	Cumulative Impact Analysis Area
Vegetation Cultural Resources Paleontology	The entire Project Area.
Soils/Watersheds	The Project Area and watershed downstream to the Rio Grande River.
General Wildlife Migratory Birds	Any predicted range for species within the Project Area, including habitat areas in and adjacent to the area or used by Gambel's quail, mule deer, and migratory birds. This scope accommodates general wildlife species

	movements, encompasses the home ranges of migratory birds in the Project Area, and provides a good picture of movement behavior and populations.
Visual Resource Management	The Project Area and lands within its viewshed. Visual Resources could be impacted by the alternatives throughout the area and adjoining viewsheds.
Past, present, or reasonably foreseeable actions, plans, or projects affecting resources analyzed under Issue 1	
1918-Present	Migratory Bird Treaty Act
1973-Present	Endangered Species Act
1978	New Mexico Noxious Weed Management Act
2008-Present	Birds of Conservation Concern effort
2010	2010 Socorro RMP
2016-Present	Partners in Flight Plan
2019-Present	New Mexico State Wildlife Action Plan
Ongoing/Anticipated	• Commercial recreation permits • Grazing permits • Mining claims • Range improvements • Rights-of-Ways, including the unbuilt SunZia Transmission Line Right-of Way • Vegetation treatments within the Project Area • Development/installation of visitor service amenities (e.g., parking areas, entrance kiosk, campsites, vault toilets, etc.)

All of the actions, plans, and projects in Table 3.6 contribute to impacts on the listed resources. Several, such as the management, conservation, and recovery/restoration plans, provide for beneficial protections to the listed resources and habitats. Development projects and actions, including those that are recreation-based, have had short-term surface-disturbing incremental impacts during development; however, once completed with stabilization measures in place, these projects have helped to better manage and mitigate user impacts to the Project Area. To varying levels, each action alternative proposes development and installation of visitor service amenities that would likely require new surface disturbance; if implementation is proposed that falls outside of previously disturbed areas, additional site-specific NEPA would be required before the activity could occur. All the action alternatives propose improved management and operation of an OHV travel network. Alternative B has the highest potential to reduce cumulative impacts to these resources in the cumulative impact analysis area through route closures and implementation measures that would provide structured management and operation of the travel route system. Alternatives C and D, with fewer route closures but the same route system management and operation as Alternative B, would result in correspondingly lower potential to reduce cumulative impacts than Alternative B, while Alternative A would not reduce cumulative impacts to these resources within the cumulative impact analysis area.

3.3 ISSUE 2: POTENTIAL IMPACTS TO RECREATION USER OPPORTUNITIES AND EXPERIENCES

3.3.1 Recreation

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

Affected Environment

Regional, national, and international visitors seek out the Socorro Field Office and the Johnson Hill area in particular because of the abundance of recreation opportunities and settings. Visitation use in the area is gathered monthly using traffic counters. From 2012–2020 an average of 53,205 visits were documented through the Quebradas Backcountry Byway; the byway bisects and provides access to the Johnson Hill Project Area, so this number is a combination of visitors to the Johnson Hill area and visitors using the byway. Some of the typical recreational activities within the Project Area include, but are not limited to, OHV use, hiking, horseback riding, mountain biking, hunting, camping, and wildlife observation. Recreation use in the area is expected to continue to increase in the future.

Motorized and non-motorized recreation on established routes is a key component of Project Area recreation overall. Although the BLM manual 1626 and H-8342 handbook direct that travel management plans be comprehensive (i.e., consider access needs for all uses, including authorized and administrative), recreation has been the primary driver of, and has the biggest effects on, travel and transportation management. Motorized recreation use on BLM public lands has grown exponentially since the 1970s and 1980s when Presidents Nixon and Carter recognized the need to designate travel routes and accordingly issued Executive Orders 11644 (1972) and 11989 (1977) to manage off-road vehicle use on public lands.

A Special Recreation Management Area (SRMA) is an area where the existing or proposed recreation opportunities and recreation setting characteristics are recognized and managed for their unique value, importance, and/or distinctiveness. The 2010 RMP designated Johnson Hill (called Gordy's Hill in the RMP) as an SRMA to be managed for recreation use, including OHV use, races, and group events. Recreation use within the SRMA is extensively OHV-based and has been increasing for years. With its many roads and trails traversing diverse topography, including deeply dissected canyons, high sandstone and limestone bluffs, terraces, and escarpments, the SRMA offers a variety of OHV recreation opportunities for all experience levels. Higher elevations within the SRMA offer scenic views of the Rio Grande Valley to the west. The SRMA is bisected by the BLM-managed Quebradas Backcountry Byway SRMA, a national designation. There are currently no developed recreation sites within the SRMA.

There are five types of uses for which Special Recreation Permits may be authorized: commercial use, competitive use, vending, special area use, and organized group activity and event use (43 CFR II § 2930 et seq.). There are currently 6 Special Recreation Permits issued by the Socorro Field Office for activities such as hill climbs and motocross within the SRMA. The largest event is the Socorro 100, a popular motorcycle/all-terrain vehicle competition that draws hundreds of participants and spectators each fall. The first competitions began in 1989, after the BLM was approached by the New Mexico Desert Racing Association to locate a suitable track or course for its proposed motorized competition. Once the track was laid out and potential impacts analyzed

and documented in an environmental review, the BLM issued a Special Recreation Permit for the event and continues to issue a permit for it each year.

Environmental Effects Analysis

It is highly likely that recreation visitor numbers in the Project Area will continue to increase. Direct effects on recreation include reductions or gains in *access* for desired recreation opportunities and experiences and in encounters or conflicts with other users seeking different experiences (e.g., equestrian users on open OHV routes encountering dirt bike users). Indirect impacts or effects include the actual gain or loss of recreation user *opportunities and experiences* afforded by the public lands. Travel route networks that close and rehabilitate more routes to year-round OHV use would provide for higher quality recreation experiences for non-motorized users than networks that designate more routes as open to OHV use; conversely, travel route networks that designate more routes as open to OHV use would provide readily available access to the Project Area's public lands for motorized recreation activities.

Implementation actions may affect recreation access and experiences. Road maintenance that involves ground-disturbing activities may temporarily block access to recreation opportunities. However, maintenance actions would likely also enhance access and safety for recreation experiences. Decommissioning and reclamation of closed roads could affect access to some recreation opportunities. Sign installation and maintenance would not adversely affect access and would help users navigate to destinations more easily. Installation and development of visitor service facilities and amenities (e.g., parking areas, vault toilets, etc.) would likely have positive effects on recreation experiences. If implementation is proposed that falls outside of previously disturbed areas, additional site-specific NEPA would be required before the activity could occur.

Because nearly all routes within the entire Project Area provide recreation access and opportunities for activities such as vehicle exploring, dirt biking, and hunting, indicators of effects on recreation include the miles of routes available throughout the Project Area under each alternative as shown below in Table 3.7, and the opportunities, amenities, and services available as displayed in the Recreation Area Management Plan Alternatives as shown in Table 2.2 in Chapter 2.

Table 3.7: Miles of Evaluated Routes within the Project Area

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change in Miles	Miles	Change in Miles	Miles	Change in Miles
All Routes (132.6 miles; 100% of existing miles)	Open to all use (OHV-Open)	138.0	60.5	-77.5	71.2	-66.8	74.0	-64.0
	Limited to high-clearance 4WD vehicle use (OHV-Limited)	0.0	1.7	+1.7	2.2	+2.2	1.7	+1.7
	Limited to UTV use (OHV-Limited)	0.0	9.8	+9.8	12.0	+12.0	12.1	+12.1
	Limited to motorized single-track use (OHV-Limited)	0.0	27.1	+27.1	41.8	+41.8	40.3	+40.3
	Limited to non-motorized use (OHV-Closed)	0.0	0.3	+0.3	2.2	+2.2	2.2	+2.2
	Limited to authorized users (OHV-Closed)	0.0	7.7	+7.7	5.4	+5.4	4.6	+4.6
	Closed/Unavailable (OHV-Closed)	0.0	30.6	+30.6	3.2	+3.2	3.0	+3.0

Alternative A (No Action)

Under Alternative A, all 138.0 miles of evaluated routes would remain open for OHV use. Since activities and opportunities throughout most of the Project Area are tied to access, Alternative A has minor effects on users, and benefits most OHV users because it has the most miles of routes available for OHV use. Some effects that a continuation of current management would have include conflicts between users (e.g., between motorized and non-motorized users, or between recreation and authorized users, etc.); lack of staging and parking areas; lack of developed campsites; lack of vault toilets; and a lack of services or activities provided through issuance of Special Recreation Permits, such as competitive events, commercial guided trips, vehicle demonstration rides, organized groups, etc. This alternative has the most potential for route-finding confusion—and therefore a less pleasant user experience—and route proliferation. It also has an overall lack of route designation diversity and comprehensive travel management. It does not separate users, prevent user conflicts, or provide management to promote opportunities in the Project Area.

Alternative B (Enhanced Resource Protection Emphasis)

Alternative B would designate 99.1 miles of evaluated routes for OHV use (OHV-Open or OHV-Limited, a 28% reduction compared to Alternative A. Of the 38.6 miles that would be designated OHV-Limited, 1.7 miles would be limited to high-clearance 4WD vehicles, 9.8 miles to UTV width, and 27.1 miles to single-track. The closures in this alternative would result in less overall access for recreation activities and less opportunity for motorized recreation compared to Alternative A; however, users would still have access to these activities throughout most of the Project Area. Alternative B would also still provide substantial access while limiting conflicts of use, route-finding confusion, and route proliferation. Some limited Special Recreation Permits would be issued under Alternative B, and additional services and amenities would be developed

on a case-by-case basis with close specialist review, enhancing user experiences and opportunities for those activities noted above. Overall, Alternative B has less potential than Alternative A for ongoing adverse effects on recreation user opportunities and experiences while increasing the potential for improved visitor services and amenities.

Alternative C (Blended Protection/Use Emphasis)

Alternative C would designate 127.2 miles of evaluated routes for OHV use (OHV-Open or OHV-Limited, an 8% reduction compared to Alternative A. Of the 56.0 miles that would be designated OHV-Limited, 2.2 miles would be limited to high-clearance 4WD vehicles, 12.0 miles to UTV width, and 41.8 miles to single-track. The closures in this alternative would result in less overall access for recreation activities and less opportunity for motorized recreation compared to Alternative A; however, users would still have access to these activities throughout most of the Project Area. Alternative C would also still provide substantial access while limiting conflicts of use, route-finding confusion, and route proliferation. A limited number of Special Recreation Permits would be issued under Alternative C (and events and resource conditions closely monitored), and additional services and amenities would be developed, enhancing user experiences and opportunities for those activities noted above. Overall, Alternative C has less potential than Alternative A for ongoing adverse effects on recreation user opportunities and experiences while increasing the potential for improved visitor services and amenities.

Alternative D (Multiple Use Emphasis)

Alternative D would designate 128.1 miles of evaluated routes for OHV use (OHV-Open or OHV-Limited, a 7% reduction compared to Alternative A. Of the 54.1 miles that would be designated OHV-Limited, 1.7 miles would be limited to high-clearance 4WD vehicles, 12.1 miles to UTV width, and 40.3 miles to single-track. The closures in this alternative would result in less overall access for recreation activities and less opportunity for motorized recreation compared to Alternative A; however, users would still have access to these activities throughout most of the Project Area. Alternative D would also still provide substantial access while limiting conflicts of use, route-finding confusion, and route proliferation. Alternative D would not limit the number of Special Recreation Permits issued, though as numbers increase, more areas for operation may be provided; and additional services and amenities would be developed, enhancing user experiences and opportunities for those activities noted above. Overall, Alternative D has less potential than Alternative A for ongoing adverse effects on recreation user opportunities and experiences while increasing the potential for improved visitor services and amenities.

3.3.2 Cumulative Effects for Issue 2

The cumulative impact analysis area used to analyze cumulative impacts for the resource use topic of Issue 2 is the entire Project Area.

Table 3.8: Cumulative Impact Analysis Area and Past, Present, or Reasonably Foreseeable Actions, Plans, or Projects for Issue 2

2010	2010 Socorro RMP
2019-Present	New Mexico State Wildlife Action Plan
Ongoing/Anticipated	• Commercial recreation permits • Grazing permits • Mining claims • Range improvements

	• Rights-of-Ways, including the unbuilt SunZia Transmission Line Right-of-Way • Vegetation treatments within the Project Area • Development/installation of visitor service amenities (e.g., parking areas, entrance kiosk, campsites, vault toilets, etc.)

Direct and indirect effects to recreation include direct increase or reductions in access, and conflicts between recreation users or between recreation and authorized users that can result in reduced quality of recreation opportunities or experiences. Alternatives B-D would reduce user conflicts to various extents by closing some routes in the Project Area and limiting some routes to administrative or authorized use only, providing for higher-quality recreation experiences for nonmotorized users, in effect resulting in some level of incremental reduction in recreation user conflicts throughout the cumulative effects analysis area when added to the past, present, and reasonably foreseeable actions, plans, and projects noted above. To varying levels, each action alternative proposes development and installation of visitor service amenities that would enhance recreation user experience within the Project Area. Alternatives B-D would also implement structured management and operation of the route system (e.g., mapping and signing), providing for enhanced network user navigation and effectively reducing confusion, potential OHV-related impacts to the adjoining Wilderness Study Area, and instances of user conflicts. The Alternative A route network would not provide for user navigation, reduce user conflicts, crowding, and route confusion within the Project Area; and, given the annual increases in recreation use noted in Section 3.3.1, above, would incrementally add to user conflicts within the cumulative impact analysis area.

3.4 ISSUE 3: POTENTIAL IMPACTS TO PUBLIC AND PERMITTED USER SAFETY

3.4.1 Geology/Mineral Resources and Wastes, Hazardous or Solid

How would the travel route and recreation area management alternatives impact public and permitted user safety given the Project Area's sites of abandoned mines and hazardous waste?

Affected Environment

A number of routes were identified by the BLM interdisciplinary team as public safety concerns during route evaluation sessions. These routes were included in the travel network analysis of the alternatives below. Routes were identified as public safety concerns for the following reasons:

- Lead to abandoned or active mine sites
- Lead to areas with the possibility of hazardous waste

Abandoned Mine Lands have been identified in the Project Area. The BLM Interdisciplinary Team identified 5 evaluated routes that lead to Abandoned Mine Land sites. Also, the Magellan petroleum pipeline is located within the Project Area. Use of routes crossing the pipeline have the potential to damage the pipeline, which could result in safety issues from hazardous materials. Magellan has an emergency plan. A total of 4 evaluated routes lead to or cross the Magellan pipeline. Finally, past monitoring has identified solid waste in the area, primarily household waste.

Environmental Effects Analysis

Impacts on public health and safety from each alternative travel network and recreation management plan alternative are directly related to OHV access. Closure of open motorized routes or routes that are accessible by 4WD vehicles, motor bikes, all-terrain vehicles (ATVs), or utility terrain vehicles (UTVs) would generally benefit public health and safety. Those networks that close and decommission more access would provide higher benefits to public health and safety. However, concentration of use is an issue regarding OHV travel over an existing buried petroleum pipeline

Figure 3.16: Number of Evaluated Routes Leading to AMLs

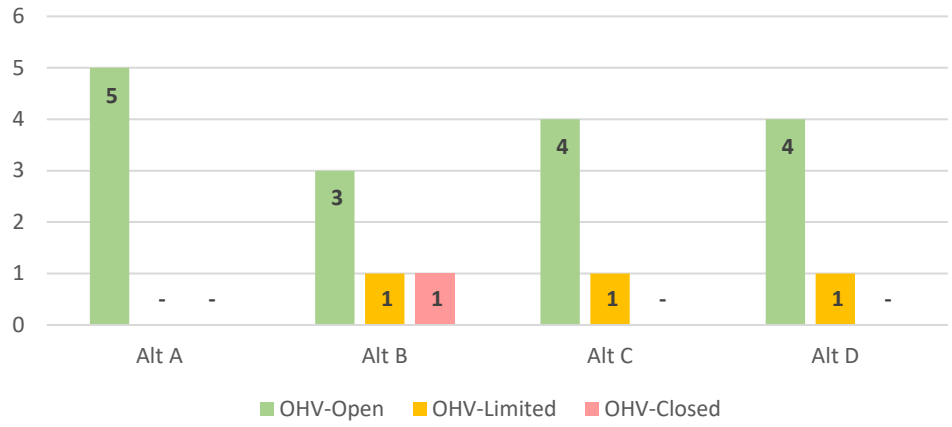


Figure 3.17: Number of Evaluated Routes Crossing Magellan Pipeline

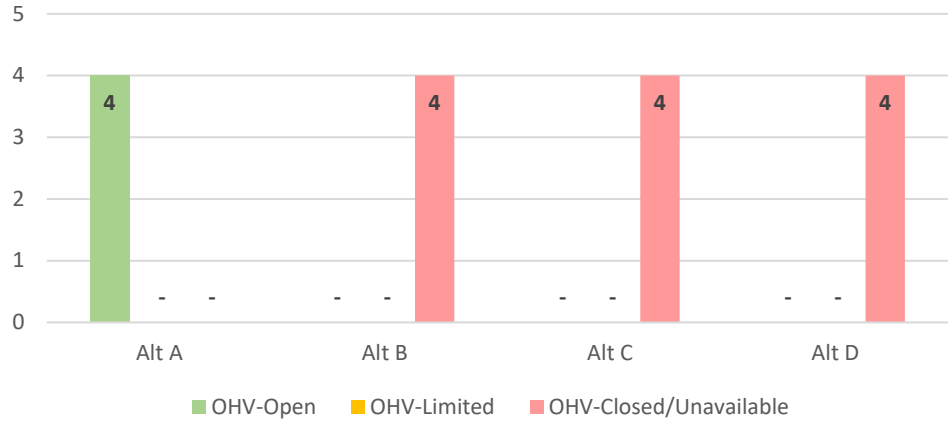
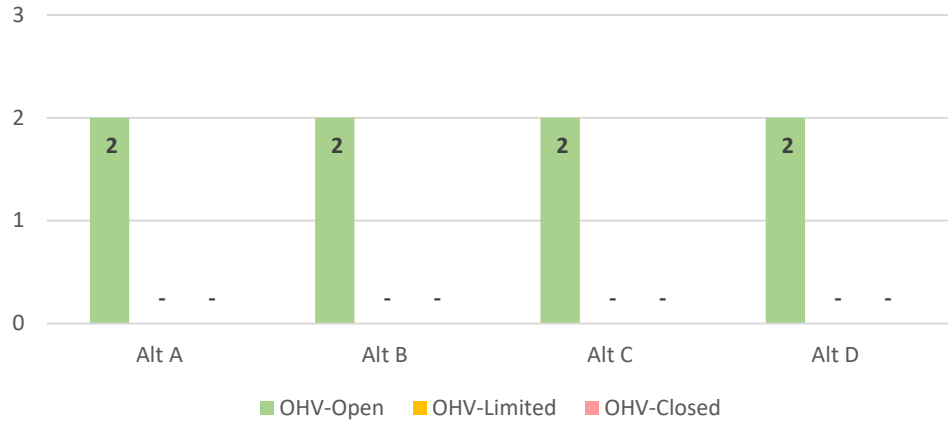


Figure 3.18: Number of Evaluated Routes with Illegal Dumping Issues



Alternative A (No Action)

Under Alternative A, all 5 routes leading to Abandoned Mine Lands, all 4 routes crossing Magellan Pipeline, and both routes associated with waste/dumping issues would remain open to OHV use. Given the number of routes that pose concerns, Alternative A has ongoing potential for adverse impacts to public health and safety.

Alternative B (Enhanced Resource Protection Emphasis)

Alternative B would designate 4 routes leading to Abandoned Mine Lands for OHV use, a 1-route decrease from Alternative A. Alternative B would close to OHV use all 4 routes crossing Magellan Pipeline; all 4 of these routes would remain available for authorized use only (i.e., closed to public OHV use). And Alternative B would designate both routes associated with illegal dumping for OHV use, no change from current management. Overall, Alternative B would have the lowest potential of any alternative for adverse effects to human health and safety from OHV and recreation use.

Alternative C (Blended Protection/Use Emphasis)

Alternative C would designate all 5 routes leading to Abandoned Mine Lands for OHV use, the same as Alternative A. Alternative C would close to OHV use all 4 routes crossing Magellan Pipeline; like Alternative B, all 4 of these routes would remain available for authorized use only. And Alternative C would designate both routes associated with illegal dumping for OHV use, representing no change from current management. Overall, Alternative C would have lower potential than Alternative A and similar potential to the other action alternatives for adverse effects to human health and safety from OHV and recreation use.

Alternative D (Multiple Use Emphasis)

Alternative D would designate all 5 routes leading to Abandoned Mine Lands for OHV use, the same as Alternative A. Alternative D would close to OHV use all 4 routes crossing Magellan Pipeline; like Alternatives B and C, all 4 of these routes would remain available for authorized use only. And Alternative D would designate both routes associated with illegal dumping for OHV use, representing no change from current management. Overall, Alternative D would have lower potential than Alternative A and similar potential to the other action alternatives for adverse effects to human health and safety from OHV and recreation use.

3.4.2 Cumulative Effects for Issue 3

The cumulative impact analysis area used to analyze cumulative impacts for the resource use topic of Issue 3 is the entire Project Area.

Table 3.9: Cumulative Impact Analysis Area and Past, Present, or Reasonably Foreseeable Actions, Plans, or Projects for Issue 3

2010	2010 Socorro RMP
Ongoing/Anticipated	• Commercial recreation permits • Mining claims • Rights-of-Ways, including the unbuilt SunZia Transmission Line Right-of-Way • Development/installation of visitor service amenities (e.g., parking areas, entrance kiosk, campsites, vault toilets, etc.)

Direct and indirect effects to public health and safety include direct increase or decrease in potential public access to Abandoned Mine Lands or hazardous waste locations. Alternatives B-D would reduce potential exposure to Abandoned Mine Lands and hazardous waste locations by closing some routes in the Project Area and limiting some routes to administrative or authorized use only, providing for some level of incremental increase to public health and safety throughout the cumulative effects analysis area when added to the past, present, and reasonably foreseeable actions, plans, and projects noted above. To varying levels, each action alternative proposes development and installation of visitor service amenities such as vault toilets and trash dumpsters that would improve public safety within the Project Area. Alternatives B-D would also implement structured management and operation of the route system (e.g., signing, mapping), providing for enhanced network user navigation and effectively reducing confusion and instances of user conflicts. The Alternative A route network would not provide for the development of visitor service amenities, enhance user navigation, or reduce user conflicts, crowding, and route confusion within the Project Area; and, given the annual increases in recreation use noted in Section 3.3.1, above, would incrementally add to issues with public health and safety within the cumulative impact analysis area.

3.5 ISSUE 4: POTENTIAL IMPACTS TO AUTHORIZED USERS

How would travel and recreation use be managed in a manner to minimize or reduce potential recreation user conflicts with other authorized users?

3.5.1 Lands/Realty/Rights-of-Ways and Geology/Mineral Resources

Affected Environment

Note: Authorized access for Right-of-Way holders and mineral development operations in the Project Area is not changed by any OHV designations resulting from this project.

Within the Project Area, Magellan has a Right-of-Way authorization for a petroleum pipeline. Magellan also has a Right-of-Way authorization for erosion control that will require mitigation measures. A total of 8 evaluated routes cross the Magellan Right-of-Way. SunZia Transmission has an un-built Right-of-Way authorization for two 500-kV transmission lines in the Project Area. A total of 6 evaluated routes cross the SunZia Right-of-Way.

Grazing authorizations and associated access is covered below in Section 3.5.2. Special Recreation Permit authorizations are covered in Section 3.3.1.

Environmental Effects Analysis

Route designation decisions would not preclude access for mineral lease or permit holders and other authorized users. A given alternative will not result in the loss, preservation, or gain of access to mineral development leases or sites. Even roads that are designated OHV-Closed would still be available for authorized and landowner use. For discussion of livestock grazing permittee access, see Section 3.5.2. Potential effects of alternative OHV access on mineral development activities or Right-of-Way holders therefore include perpetuation or reduction of conflicts such as vandalism, disruption, or trespass from recreation users. Mineral development sites often contain equipment or chemicals that are hazardous if not handled properly, or facilities with OSHA-regulated access. Restricting OHV access to these sites would benefit the operator by reducing liability and benefit the recreating public by removing access to those hazards. In addition, heavy OHV traffic could conflict with mineral site development traffic, which may involve semi-trucks, heavy equipment transportation, or large amounts of crew traffic. Concentration of use is an issue regarding OHV travel over an existing buried petroleum pipeline

Route closures or limitations may be imposed along the SunZia transmission line Right-of-Way during construction and subsequent reclamation activities. Any route designation changes that may be necessary as a result of those activities would be subject to appropriate NEPA processes.

Travel Management Plan implementation actions that may also affect mineral development include road maintenance (surface and ditch grading and drainage structure replacement or installation, etc.), and sign placement (digging post holes). Route maintenance may temporarily block access to mineral sites. However, maintenance actions would likely also enhance access to these sites. Routes that exist for authorized mineral uses would not be reclaimed even if designated OHV-Closed so long as the route is needed for mineral development use. Instead, sign installation would direct recreationists to their destinations and educate them on allowable uses for a particular route. If implementation is proposed that falls outside of previously disturbed areas, additional site-specific NEPA would be required before the activity could occur.

Figure 3.19: Number of Evaluated Routes Crossing the Magellan Pipeline Right-of-Way

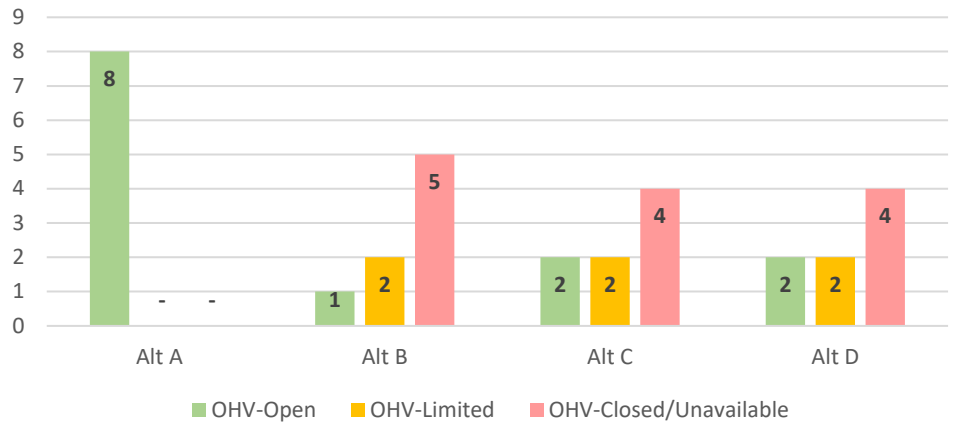
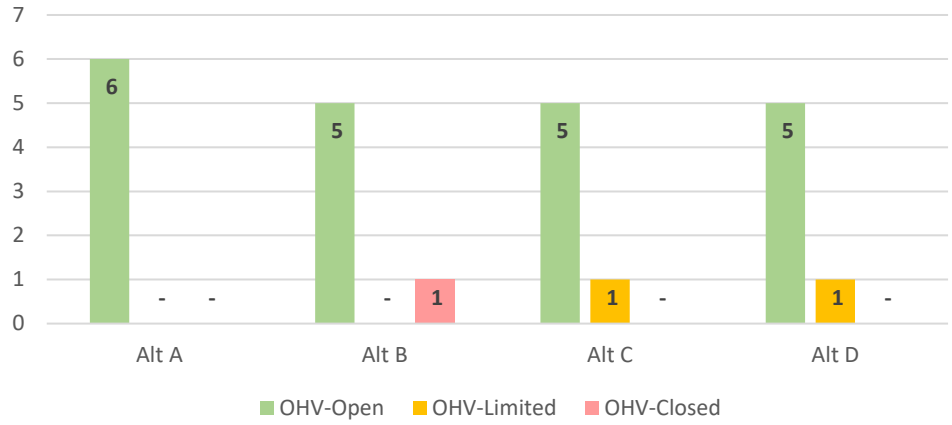


Figure 3.20: Number of Evaluated Routes Crossing the Unbuilt SunZia Transmission Line Right-of-Way



Alternative A (No Action)

Under Alternative A, all 8 routes crossing the Magellan Pipeline Right-of-Way and all 6 routes crossing the unbuilt SunZia Right-of-Way would remain available for public OHV use. Given that all these routes would remain available to OHV use, Alternative A would have a low to moderate effect on mineral development activities or Right-of-Way holders such as conflicts (vandalism, disruption, or trespass from recreation users) or liability issues, reflecting a continuation of current management

Alternative B (Enhanced Resource Protection Emphasis)

Alternative B would designate 3 routes crossing the Magellan Pipeline Right-of-Way for public OHV use (OHV-Open or OHV-Limited), a 5-route reduction from Alternative A. Of the routes crossing the SunZia transmission line Right-of-Way, Alternative B would designate 5 for public OHV use, a 1-route reduction from Alternative A. All routes closed to OHV use would remain available for authorized users. Overall, Alternative B would have the lowest potential of any alternative for the conflicts or liability issues noted above to mineral development activities.

Alternative C (Blended Protection/Use Emphasis)

Alternative C would designate 4 routes crossing the Magellan Pipeline Right-of-Way for public OHV use (OHV-Open or OHV-Limited), a 4-route reduction from Alternative A. Of the routes crossing the SunZia transmission line Right-of-Way, Alternative C would designate all 6 for public OHV use. All routes closed to OHV use would remain available for authorized users. Overall, Alternative C would have lower potential than Alternatives A and D but higher potential than Alternative B for conflicts and liability issues noted above to mineral development activities.

Alternative D (Multiple Use Emphasis)

Alternative D would designate 4 routes crossing the Magellan Pipeline Right-of-Way for public OHV use (OHV-Open or OHV-Limited), a 4-route reduction from Alternative A. Of the routes crossing the SunZia transmission line Right-of-Way, Alternative D would designate all 6 for public OHV use. All routes closed to OHV use would remain available for authorized users. Overall, Alternative D would have lower potential than Alternative A and the same potential as Alternative C for the conflicts and liability issues noted above to mineral development activities.

3.5.2 Livestock Grazing

Affected Environment

Note: Authorized access for grazing operations in the Project Area is not changed by any OHV designations resulting from this project.

Livestock permittees have operated within the Project Area for decades. There are three grazing allotments within the area: Las Lomas, Pueblito Community, and Four Hills. Many travel network routes provide access to range improvement projects and facilities like functioning troughs, pipelines, water tanks, fencelines, and spring developments. These routes support and are essential to the management of livestock in grazing allotments. Table 3.10 shows the number of evaluated routes accessing range improvements and facilities.

Table 3.10: Number of Evaluated Routes Accessing Range Improvements

Range Improvement	# Routes
Allotment Fence	18
Tank/Trough/Drinker	15
Pipeline	13
Cattleguard	3
Corral	3
Gate	3
Developed Spring	2
Exclosure Fence	2
Pasture Fence	1
Windmill/Well	1

Environmental Effects Analysis

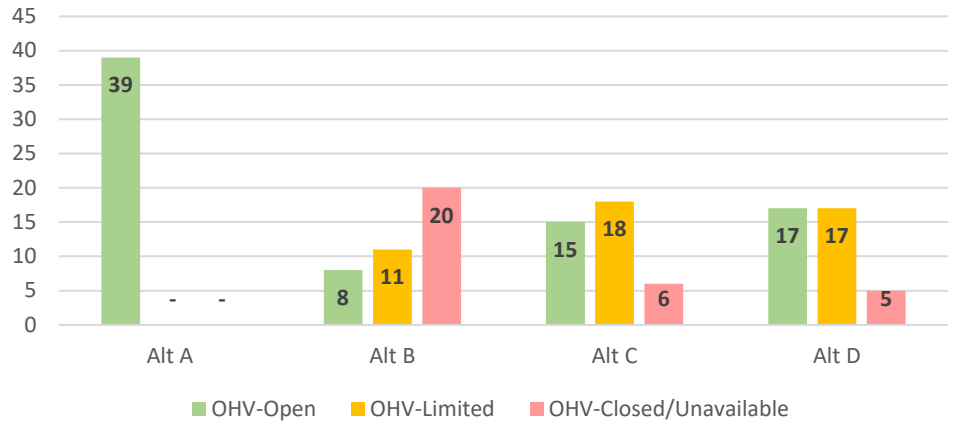
All the alternatives could result in conflicts between recreation users and livestock operators such as vandalism to facilities, open gates, OHV collisions with grazing animals, and disturbance and displacement of grazing animals from OHV and recreation use. OHV traffic can directly interfere with cattle truck or water truck access to the allotments or livestock (blocking routes or access gates for instance). OHV use of routes can also indirectly contribute to proliferation of invasive species and noxious weeds in rangelands via transportation of weed seeds on OHV undercarriages and tires. These invasive species and weeds can outcompete native vegetation for available nutrients and impair forage quality for grazing, and some of these weeds are toxic to livestock. For details on the alternatives' impacts on invasive and noxious weeds, see Section 3.2.1. Other potential indirect effects include lost time and revenue associated with repairs or replacement of vandalized range improvements or facilities, displacement of livestock from opened gates and subsequent retrieval, livestock mortality, etc. Closing or limiting OHV use on a particular route can minimize or eliminate conflicts between the grazing permittee and OHV users by removing or reducing the OHV use on the route. Closure of a route to OHV use would not necessarily close the route to authorized use, such as permittee access to a range facility, because the grazing permits authorize the permittee access in many cases.

Implementation activities that could affect livestock grazing include route maintenance (surface and ditch grading and drainage structure replacement or installation, etc.); road, trail, and parking

area maintenance or development; ripping and seeding closed routes; and sign, kiosk, barrier, and vault toilet installations. Active reclamation of closed routes can accelerate reclamation and help to reestablish forage for livestock but can also limit a permittee's ability to access straying or displaced livestock. Routes that have a primary purpose and need for authorized uses, such as access to livestock facilities, would not be reclaimed. In such a case, sign installation would direct recreation users to their destinations and inform users of allowable uses for a particular route. If implementation is proposed that falls outside of previously disturbed areas, additional site-specific NEPA would be required before the activity could occur.

Figure 3.21, below, informs the effects analysis by presenting the number of evaluated routes providing primary access to range improvements such as fences, gates, corrals, troughs, pipelines, etc. These evaluated routes are an indicator of the continuation or reduction of effects the alternatives may have on both range improvements and livestock itself, which may often be concentrated at or near certain improvements (e.g., water troughs).

Figure 3.21: Number of Evaluated Routes Providing Primary Access to Range Improvement Locations



Alternative A (No Action)

Under Alternative A, all 39 routes providing primary access to range improvement locations would remain available for public OHV use. Impacts to livestock grazing operations from ongoing OHV use such as conflicts between recreation users and livestock operators (e.g., vandalism to facilities, open gates, OHV collisions with grazing animals, disturbance and displacement of grazing animals), and spread of invasive species and noxious weeds, would reflect a continuation of current management. The effects described above from public OHV use (conflicts of use between recreation users and grazing permittees) would continue to occur relative to the number of routes in the Project Area.

Alternative B (Enhanced Resource Protection Emphasis)

Alternative B would designate 19 routes accessing range improvements for OHV use, a 51% reduction compared to Alternative A. Of the 20 routes that would be closed to public OHV use under this alternative, 8 would remain available for authorized use and the rest would be earmarked for reclamation; however, authorized access for grazing operations in the Project Area would continue regardless of OHV designations since grazing permits include authorized access. Overall, Alternative B would have the lowest potential of any alternative for the effects noted above to livestock grazing operations.

Alternative C (Blended Protection/Use Emphasis)

Alternative C would designate 33 routes accessing range improvements for OHV use, a 15% reduction compared to Alternative A. Of the 6 routes that would be closed to public OHV use under this alternative, 5 would remain available for authorized use and 1 would be earmarked for reclamation; however, authorized access for grazing operations in the Project Area would continue regardless of OHV designations since grazing permits include authorized access. Overall, Alternative C would have lower potential than Alternatives A and D but higher potential than Alternative B for the effects noted above to livestock grazing operations.

Alternative D (Multiple Use Emphasis)

Alternative D would designate 34 routes accessing range improvements for OHV use, a 13% reduction compared to Alternative A. Of the 5 routes that would be closed to public OHV use under this alternative, 4 would remain available for authorized use and 1 would be earmarked for reclamation; however, authorized access for grazing operations in the Project Area would continue regardless of OHV designations since grazing permits include authorized access. Overall, Alternative D would have lower potential than Alternative A but higher potential than the other action alternatives for the effects noted above to livestock grazing operations.

3.5.3 Cumulative Effects for Issue 4

The cumulative impact analysis area used to analyze cumulative impacts for the resource use topics of Issue 4 is the entire Project Area.

Table 3.11: Cumulative Impact Analysis Area and Past, Present, or Reasonably Foreseeable Actions, Plans, or Projects for Issue 4

1978	New Mexico Noxious Weed Management Act
2010	2010 Socorro RMP
Ongoing/Anticipated	• Grazing permits • Range improvements • Vegetation treatments within the Project Area • Commercial recreation permits • Mining claims • Rights-of-Ways, including the unbuilt SunZia Transmission Line Right-of-Way • Development/installation of visitor service amenities (e.g., parking areas, entrance kiosk, campsites, vault toilets, etc.)

Direct and indirect effects to recreation include direct increase or reductions in conflicts such as vandalism, disruption, or trespass that can result in increased disruption of grazing or mineral development operations, or increased liability and expenditures of time and money on the part of permittees and Right-of-Way holders. Alternatives B-D would reduce user conflicts to various extents by closing some routes in the Project Area and limiting some routes to administrative or authorized use only, in effect resulting in some level of incremental reduction in user conflicts throughout the cumulative effects analysis area when added to the past, present, and reasonably foreseeable actions, plans, and projects noted above. Alternatives B-D would also implement structured management and operation of the route system (e.g., signing and mapping), providing for enhanced network user navigation and effectively reducing confusion and instances of user conflicts. The Alternative A route network would not provide for user navigation, reduce user conflicts, crowding, and route confusion within the Project Area; and, given the annual increases

in recreation use noted in Section 3.3.1, above, would incrementally add to user conflicts within the cumulative impact analysis area.

4 CONSULTATION AND COORDINATION

4.1 PUBLIC REVIEW

Public scoping occurred from November 8, 2021 – December 17, 2021, 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 and Recreation Management Plans and assessing potential impacts to natural resources. The BLM reached out to several OHV user groups known to have an interest in the Johnson Hill SRMA. Comments received from user groups were in support of the plans and additional routes were identified for inclusion. BLM inventoried these additional routes, and they are incorporated into this EA analysis.

For more details see the BLM NEPA ePlanning page at: https://eplanning.blm.gov/eplanning-ui/project/2012247/510

4.2 CONSULTATION

4.2.1 Endangered Species Act Section 7

Via interagency coordination with the USFWS and based on the existing disturbance of routes and the Project Area's distance from Threatened and Endangered species habitat, the BLM has concluded that a "No Effect" determination is appropriate for Southwestern willow flycatcher (*Empidonax traillii extimus*), yellow-billed cuckoo (*Coccyzus americanus*), and Rio Grande silvery minnow (*Hybognathus amarus*). Because of this No Effect determination, no further consultation with UWFWS is required. Other Threatened and Endangered species do not occur in or adjacent to the Project Area and will not be addressed in this EA.

4.2.2 Tribal Consultation

Tribal consultation for the BLM is guided by a variety of laws, Executive Orders and Memoranda, as well as case law. Laws include the National Historic Preservation Act of 1966 and subsequent amendments (National Historic Preservation Act; Public Law [PL] 89-665, 15 October 1966), the Archaeological Resources Protection Act of 1979 (PL 96-95, 16 United States Code [USC] 470aa-mm, 31 October 1979), the American Indian Religious Freedom Act of 1978 (PL 95-341, USC 1996 and 1996a, 11 August 1978), NEPA (PL 91-190, 42 USC 4321-4347, 1 January 1970), the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; PL 101-601, 16 November 1990), and the Federal Land Policy and Management Act of 1976 (FLPMA; PL 94-579, 21 October 1976). Executive Orders and Memoranda include a 1994 Memorandum on Government-to-Government Relations with Native American Tribal Governments (59 Federal Register 85, 4 May 1994), Executive Order 13007 on Accommodation of Sacred Sites (61 Federal Register 104, 29 May 1996), and Executive Order 12898 on Environmental Justice (59 Federal Register 32, 16 February 1994). The BLM is committed to tribal consultation and has initiated consultation at the government-to-government level for the proposed Travel and Recreation Management Plans. Tribal consultation is a separate process from public scoping, due to the unique relationship between the U.S. Government and federally recognized Tribes. The primary methods of tribal consultation include letters providing information materials about the Johnson Hill Travel

and Recreation Management Plans, telephone calls, and face-to-face meetings, if requested. The BLM initiated tribal consultation with a letter dated November 2, 2021 to tribal leaders of the following Tribes:

- Comanche Nation
- Fort Sill Apache Tribe
- Hopi Tribe
- Kiowa Tribe
- Mescalero Apache Tribe
- Navajo Nation
- Pueblo of Acoma
- Pueblo of Isleta
- Pueblo of Laguna
- Pueblo of Zuni
- White Mountain Apache Tribe

The letters from the BLM provided a description of the proposed action, location, locational maps, and the NEPA schedule, specifically regarding the dates the EA would be available online for comment.

Email correspondence from the Pueblo of Acoma, dated December 01, 2021, requested a virtual meeting and onsite visit. An email response from BLM was sent back on March 08, 2022 to make arrangements but received no response from the Tribe. A formal letter was sent on May 04, 2022 offering to schedule a virtual meeting and in-person site visit. To date no response has been received by the BLM from the Pueblo of Acoma to meet virtually or in person.

Note: As of the release of this Draft EA, consultation efforts are ongoing.

4.2.3 State Historic Preservation Office and Tribal Historic Preservation Office Consultation

Note: As of the release of this Draft EA, consultation efforts are ongoing.

5 LIST OF PREPARERS

5.1.1 Bureau of Land Management

Name	Title
Virginia Alguire	Realty Specialist, Project Lead
Zebb Andrews	Wildlife Biologist
Denny Apachito	Outdoor Recreation Planner, Project lead
Matt Atencio	Assistant Field Manger, Renewable Resources
Michael Comiskey	Outdoor Recreation Planner
Jeff Fassett	Weeds, Roads, Range Improvement
Katie Hill	Archaeologist
Mark Matthews	Field Manager
Michael Mora	Rangeland Management Specialist
Beth Rosales	Natural Resource Specialist
Jeremy Zimmerman	GIS Specialist

5.1.2 Interdisciplinary Team Involvement

BLM resource and resource use disciplines represented on the Interdisciplinary Team during route evaluation included cultural resources, soils, water quality, riparian and wetlands, geology and minerals, paleontology, GIS, hydrology, natural resources, outdoor recreation planning, public health and safety, minerals, native vegetation and rangeland management, noxious weeds and invasive species, lands and realty, and environmental planning and NEPA.

5.1.3 Advanced Resource Solutions, Inc. (ARS)

The following contractor staff also assisted with developing the Travel and Recreation Management Plans and Environmental Assessment.

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

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APPENDIX B. ABBREVIATIONS AND ACRONYMS

2WD	Two-wheel drive
4WD	Four-wheel drive
ARS	Advanced Resource Solutions, Inc.
ATV	All-terrain vehicle
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
DOI	U.S. Department of the Interior
FLPMA	Federal Land Policy and Management Act
GIS	Geographic information system
GPO	U.S. Government Publishing Office
GPS	Global positioning system
NEPA	National Environmental Policy Act
NMDGF	New Mexico Department of Game and Fish
NSE	NatureServe Explorer
OHV	Off-highway vehicle or off-road vehicle
RMP	Resource management plan
ROW	Right-of-way
SRMA	Special Recreation Management Area
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
UTV	Utility terrain vehicle
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WSA	Wilderness Study Area

APPENDIX C. ADDITIONAL TABLES

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

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
All Miles (138.0 miles; 100% of evaluated network)	OHV-Open	138.0	60.5	-77.5	71.2	-66.8	74.0	-64.0
	OHV-Limited	-	38.6	+38.6	56.0	+56.0	54.1	+54.1
	OHV-Closed/Unavailable	-	38.9	+38.9	10.7	+10.7	9.8	+9.8

Table C.2: Number of Evaluated Routes in Areas with Highly and Moderately Erosive Soils

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Erosive soil - High potential / saline soils (6 routes; 4.5% of evaluated network)	OHV-Open	6	-	-6	-	-6	3	-3
	OHV-Limited	-	-	-	6	+6	3	+3
	OHV-Closed/Unavailable	-	6	+6	-	-	-	-
Erosive soil - Moderate potential (115 routes; 86.5% of evaluated network)	OHV-Open	115	31	-84	48	-67	49	-66
	OHV-Limited	-	36	+36	49	+49	50	+50
	OHV-Closed/Unavailable	-	48	+48	18	+18	16	+16

Table C.3: Miles of Evaluated Routes in Project Area Ecoregions

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Chihuahuan Basins and Playas (62.1 miles; 45% of evaluated network)	OHV-Open	62.1	27.3	-34.8	28.3	-33.8	30.4	-31.7
	OHV-Limited	-	15.9	+15.9	30.1	+30.1	28.2	+28.2
	OHV-Closed/Unavailable	-	18.8	+18.8	3.6	+3.6	3.5	+3.5
Chihuahuan Desert Grasslands (74.9 miles; 54.2% of evaluated network)	OHV-Open	74.8	33.0	-41.9	42.7	-32.1	43.5	-31.4
	OHV-Limited	-	22.7	+22.7	25.5	+25.5	25.5	+25.5
	OHV-Closed/Unavailable	-	19.2	+19.2	6.6	+6.6	5.9	+5.9
Rio Grande Floodplain (1.0 miles; 0.8% of evaluated network)	OHV-Open	1.0	0.2	-0.9	0.2	-0.9	0.2	-0.9
	OHV-Limited	-	0.0	+0.0	0.4	+0.4	0.4	+0.4
	OHV-Closed/Unavailable	-	0.8	+0.8	0.5	+0.5	0.5	+0.5

Table C.4: Number of Evaluated Routes in Areas of Invasive Vegetation

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Invasive vegetation (salt cedar) (5 routes; 3.8% of evaluated network)	OHV-Open	5	3	-2	5	-	5	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed/Unavailable	-	2	+2	-	-	-	-

Table C.5: Number of Evaluated Routes in Riparian Areas

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Riparian/Spring (3 routes; 2.3% of evaluated network)	OHV-Open	3	-	-3	2	-1	2	-1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed/Unavailable	-	3	+3	1	+1	1	+1

Table C.6: Miles of Evaluated Routes in Visual Resource Inventory Classes

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Visual Resource Inventory Class II (115.8 miles; 83.9% of evaluated network)	OHV-Open	115.8	50.6	-65.2	61.1	-54.7	63.9	-51.9
	OHV-Limited	-	29.0	+29.0	45.2	+45.2	43.3	+43.3
	OHV-Closed/Unavailable	-	36.2	+36.2	9.5	+9.5	8.6	+8.6
Visual Resource Inventory Class III (22.2 miles; 16.1% of evaluated network)	OHV-Open	22.2	9.9	-12.3	10.1	-12.0	10.1	-12.0
	OHV-Limited	-	9.6	+9.6	10.8	+10.8	10.8	+10.8
	OHV-Closed/Unavailable	-	2.7	+2.7	1.2	+1.2	1.2	+1.2

Table C.7: Miles of Evaluated Routes in Visual Resource Management Classes

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
Visual Resource Management Class 2 (44.2 miles; 32% of evaluated network)	OHV-Open	44.2	20.6	-23.5	28.5	-15.7	29.1	-15.1
	OHV-Limited	-	9.7	+9.7	10.6	+10.6	10.6	+10.6
	OHV-Closed/Unavailable	-	13.8	+13.8	5.1	+5.1	4.5	+4.5
Visual Resource Management Class 3 (55.1 miles; 40% of evaluated network)	OHV-Open	55.1	21.1	-34.1	23.9	-31.2	24.0	-31.1
	OHV-Limited	-	23.5	+23.5	28.2	+28.2	28.2	+28.2
	OHV-Closed/Unavailable	-	10.6	+10.6	3.0	+3.0	2.9	+2.9
Visual Resource Management Class 4 (38.7 miles; 28% of evaluated network)	OHV-Open	38.7	18.8	-19.9	18.8	-19.8	20.9	-17.8
	OHV-Limited	-	5.4	+5.4	17.2	+17.2	15.3	+15.3
	OHV-Closed/Unavailable	-	14.5	+14.5	2.6	+2.6	2.4	+2.4

Table C.8: Number of Evaluated Routes in or Proximate to Cultural Resources

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Eligible Cultural Resource (21 routes; 15.8% of evaluated network)	OHV-Open	21	4	-17	6	-15	6	-15
	OHV-Limited	-	3	+3	8	+8	8	+8
	OHV-Closed/Unavailable	-	14	+14	7	+7	7	+7
Not Eligible Cultural Resource (2 routes; 1.5% of evaluated network)	OHV-Open	2	1	-1	1	-1	1	-1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed/Unavailable	-	1	+1	1	+1	1	+1
Unevaluated Cultural Resource (7 routes; 5.3% of evaluated network)	OHV-Open	7	2	-5	3	-4	3	-4
	OHV-Limited	-	1	+1	4	+4	4	+4
	OHV-Closed/Unavailable	-	4	+4	-	-	-	-

Table C.9: Miles of Evaluated Routes in Paleontological Fossil Yield Classes

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Miles	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)	Miles	Change from Alt A (miles)
PFYC Class 1 (0.1 miles; 0.1% of evaluated network)	OHV-Open	0.1	-	-0.1	-	-0.1	-	-0.1
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed/Unavailable	-	0.1	+0.1	0.1	+0.1	0.1	+0.1
PFYC Class 2 (51.2 miles; 37.1% of evaluated network)	OHV-Open	51.2	27.9	-23.3	30.1	-21.1	30.1	-21.1
	OHV-Limited	-	14.3	+14.3	19.0	+19.0	19.0	+19.0
	OHV-Closed/Unavailable	-	9.0	+9.0	2.1	+2.1	2.1	+2.1
PFYC Class 3 (20.1 miles; 14.6% of evaluated network)	OHV-Open	20.1	8.8	-11.3	14.2	-5.9	14.2	-5.9
	OHV-Limited	-	3.3	+3.3	3.5	+3.5	3.5	+3.5
	OHV-Closed/Unavailable	-	8.0	+8.0	2.5	+2.5	2.5	+2.5
PFYC Class 4 (66.6 miles; 48.2% of evaluated network)	OHV-Open	66.6	23.7	-42.8	26.9	-39.6	29.7	-36.8
	OHV-Limited	-	21.0	+21.0	33.5	+33.5	31.6	+31.6
	OHV-Closed/Unavailable	-	21.8	+21.8	6.1	+6.1	5.2	+5.2

Table C.10: Number of Evaluated Routes Associated with Health and Safety Concerns

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
AML Sites (5 routes; 3.8% of evaluated network)	OHV-Open	5	3	-2	4	-1	4	-1
	OHV-Limited	-	1	+1	1	+1	1	+1
	OHV-Closed/Unavailable	-	1	+1	-	-	-	-

Table C.11: Number of Evaluated Routes Crossing Magellan Pipeline

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Magellan Pipeline (4 routes; 3% of evaluated network)	OHV-Open	4	-	-4	-	-4	-	-4
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed/Unavailable	-	4	+4	4	+4	4	+4

Table C.12: Number of Evaluated Routes Associated with Human Waste/Dumping

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Illegal Dumping (2 routes; 1.5% of evaluated network)	OHV-Open	2	2	-	2	-	2	-
	OHV-Limited	-	-	-	-	-	-	-
	OHV-Closed/Unavailable	-	-	-	-	-	-	-

Table C.13: Number of Evaluated Routes Crossing Rights-of-Ways

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Magellan Pipeline (8 routes; 6% of evaluated network)	OHV-Open	8	1	-7	2	-6	2	-6
	OHV-Limited	-	2	+2	2	+2	2	+2
	OHV-Closed/Unavailable	-	5	+5	4	+4	4	+4
Sun Zia Transmission Lines (6 routes; 4.5% of evaluated network)	OHV-Open	6	5	-1	5	-1	5	-1
	OHV-Limited	-	-	-	1	+1	1	+1
	OHV-Closed/Unavailable	-	1	+1	-	-	-	-

Table C.14: Number of Evaluated Routes Providing Primary Access to Range Improvement Locations

		Alt. A	Alt. B		Alt. C		Alt. D	
	Designation	Routes	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)	Routes	Change from Alt A (routes)
Range Improvements (39 routes; 29.3% of evaluated network)	OHV-Open	39	8	-31	15	-24	17	-22
	OHV-Limited	-	11	+11	18	+18	17	+17
	OHV-Closed/Unavailable	-	20	+20	6	+6	5	+5

APPENDIX D. ADDITIONAL POLICIES, STATUTES, AND GUIDANCE

In addition to the 2010 RMP, authorities and policies guiding this TMP effort include, but are not limited to, the following:

- Presidential Executive Orders 11644 and 11989, which require federal land management agencies to "establish policies and provide for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands" (Order 11644) and "whenever he [agency head] determines that the use of off-road vehicles will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands, immediately close such areas or trails to the type of off-road vehicle causing such effects…" (Order 11989).
- 43 CFR Part 8340: Off-Road Vehicles including 43 CFR 8342.1, Designation Criteria, Subparts 8340-8342.3, which states:
    - The authorized officer shall designate all public lands as either open, limited, or closed to off-road vehicles. All designations shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands; and in accordance with the following criteria:
        - (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
        - (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
        - (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
        - (d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.
- BLM's Travel and Transportation Management Manual, MS-1626
- The BLM's 2001 National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands
- 43 CFR 8364.1: Closures and Restrictions
- BLM's 2008 National Environmental Policy Act Handbook (H-1790-1)
- BLM's 2012 Travel and Transportation Handbook (H-8342)
- BLM's 2014 Planning for Recreation and Visitor Services (H-8320-1)
- BLM's 2009 Manual 1703, Hazard Management and Resource Restoration

- Federal Land Policy and Management Act
- Omnibus Public Lands Act of 2009 (PL 111-11)
- National Historic Preservation Act, as amended (54 U.S.C. 100101)
- The Historic Sites Act (54 U.S.C. 100101)
- The Archaeological Resources Protection Act of 1979, as amended (16 USC 470a, 470cc, and 470ee)
- Healthy Forest Restoration Act of 2003 (PL 108-148)
- EO 11988, as amended, 1977
- Mining and Mineral Policy Act of 1970 (30 USC 21a)
- General Mining Law of 1872 (30 USC 21)
- Surface Mining Control and Reclamation Act of 1977 (30 USC 1201)
- Mineral Leasing Act of 1920 (30 USC 181)
- Federal Noxious Weed Control Act of 1974, as amended (7 USC 2814)
- Noxious Weed Control Act of 2004 (PL 108-412)
- Carlson-Foley Act of 1968 (PL 90-583)
- EO 13112
- Recreation and Public Purposes Act of 1926 (43 USC 869 et seq)
- Taylor Grazing Act of 1934 (43 USC 315), as amended by the Act of 1937 (43 USC 1181d)
- Public Rangelands Improvement Act of 1978 (43 USC 1901-1908)
- Migratory Bird Treaty Act of 1918, as amended (16 USC 703 et seq.)
- EO 13186
- American Indian Religious Freedom Act of 1978 (42 USC 1996)
- The Native American Graves Protection and Repatriation Act of 1990 (26 USC 3001)
- National Trails System Act of 1968 (16 USC 1241-1249)
- Soil and Water Resources Conservation Act of 1977. (16 USC 2001)
- Clean Water Act (33 USC 1251)
- Safe Drinking Water Act (42 USC 3001)
- Resource Conservation and Recovery Act of 1976 (43 USC 6901)
- Comprehensive Environmental Response, Compensation, and Liability Act ((CERCLA 120(h)) and 40 CFR (Code of Federal Regulations) PART 373
- EO 11990 1977
- The Sikes Act of 1974, as amended (16 USC 1271 et seq.)

APPENDIX E. INTERDISCIPLINARY TEAM CHECKLIST

Resource Assessment Key:

NP **Not Present**. This resource ***is not*** present in the area impacted by the proposed or alternative actions.

NA **Not Affected**. This resource ***is*** present, but is either not affected or the effects cannot be meaningfully analyzed for any of the alternatives.

PI **Potential Impact**. This resource ***is*** present, and either the proposed action or at least one of the alternatives may impact the resource. It is the purpose of this NEPA document to assess the severity of the impact on this resource.

Resource, Authority, RMP Conformance	Assess-ment	Rationale	Signature	Date
Air Quality • *The Clean Air Act of 1990 as amended (42 USC 7401 et seq.)* ***2010 RMP pg 9***	NA	Developing administrative management plans is not expected to have significant effects on the existing air quality. Limiting or closing travel on routes would not affect air quality enough to warrant analysis.		
ACECs (Areas of Critical Environmental Concern) • *FLPMA 202(c)(3)* ***2010 RMP pg 13, Cht. 3, Appendix K***	NP	No ACEC's were identified in the SRMA or adjacent to the Project Area.		
Caves and Karst • *Federal Cave Resources Protection Act of 1988 (16 USC 4301)* ***2010 RMP pgs 13, Cht. 3, Appendix L***	NA	Although there is a high potential for caves & karsts in the project area, development of management plans would not include any new surface disturbing activities and therefore caves and karsts are not expected to be affected. Best management practices will be included in the management plans for this resource.		
Cultural Resources • *National Historic Preservation Act, as amended (54 U.S.C. 100101)* • *The Historic Sites Act (54 U.S.C. 100101)* • *The Archaeological Resources Protection Act of 1979, as amended (16 USC 470a, 470cc, and 470ee)* ***2010 RMP pgs 10-13, 110-111***	PI	Cultural resources are present in the SRMA. Effects of the routes and the route designations on the resource would require analysis and likely mitigation through limiting routes to administrative use or closing altogether.		
Environmental Justice • *EO 12898, 1994.*	NA	The Proposed Action would not significantly alter the current land use, therefore EJ is not anticipated to be disproportionately affected.		
Fire and Fuels • *Healthy Forest Restoration Act of 2003 (PL 108-148* ***2010 RMP pgs 16, 27, 47-48, 117, 195***	NA	Vegetation in the SRMA is comprised of scattered grasses, mixed forbes and shrubs. Juniper trees can be seen sparsely throughout the project area. Best management practices to stay on trails and use spark arresters with possible signage to indicate fire extremity levels could be installed. There are no anticipated short or long term effects to fire and fuels.		

Resource, Authority, RMP Conformance	Assess-ment	Rationale	Signature	Date
Floodplains • *EO 11988, as amended, 1977.*	PI	The project boundary is less than 1 mile to the Rio Grande. Analysis of the effects if any to the floodplain should be assessed.		
Forests and Woodlands • *Healthy Forests Restoration Act of 2003 (PL 108-148)* ***2010 RMP pgs 13-17, Appendix N***	NP	No known forested or woodland areas are within the project boundary.		
Geology/Mineral Resources • *Mining and Mineral Policy Act of 1970 (30 USC 21a)* • *General Mining Law of 1872 (30 USC 21)* • *Surface Mining Control and Reclamation Act of 1977 (30 USC 1201)* • *Mineral Leasing Act of 1920 (30 USC 181)* ***2010 RMP pgs 21-22, Map 3, 100, 112, Appendix I***	PI	Abandoned Mine Lands (AMLs) have been identified in the project area. Where routes intersect or lead to AMLs route evaluations will need to assess the level of hazard associated with the AMLs and whether or not to restrict or limit those routes. There is also an area identified for public mineral permit use of rock.		
Invasive, non-native species • *Federal Noxious Weed Control Act of 1974, as amended (7 USC 2814)* • *Noxious Weed Control Act of 2004 (PL 108-412)* • *Carlson-Foley Act of 1968 (PL 90-583)* • *EO 13112* ***2010 RMP pgs 25, 115, 207***	PI	Best management practices and weed management should be incorporated into the management plans for the SRMA. Salt Cedar was identified within the project boundary.		
Lands/Realty/Right-of-Way (ROW) • *Recreation and Public Purposes Act of 1926 (43 USC 869 et seq)* • *FLPMA* ***2010 RMP pgs 17-20, Map 2, 111, Appendix F***	PI	Magellan Pipeline's petroleum pipeline is within the project boundary and management limitations may need to be implemented on routes that cross or parallel the pipeline and they also have a ROW for erosion control that will need mitigation measures. Joint maintenance occurs with Socorro County on some of the access roads. SunZia Transmission has an un-built ROW for two 500-kV transmission lines in the project area.		

Resource, Authority, RMP Conformance	Assess-ment	Rationale	Signature	Date
Livestock Grazing • *Taylor Grazing Act of 1934 (43 USC 315), as amended by the Act of 1937 (43 USC 1181d)* • *Public Rangelands Improvement Act of 1978 (43 USC 1901-1908)* ***2010 RMP pgs 26, 100, 113, Appendix H***	PI	The following grazing allotments occur within the project area: Las Lomas (01329), Pueblito Community (01318), & Four Hills (01259). Route evaluations are required to protect improvements such as water lines, drinkers, fences, etc.		
Migratory Birds • *Migratory Bird Treaty Act of 1918, as amended (16 USC 703 et seq.)* • *EO 13186* ***2010 RMP pgs 48-51, 107-109, Appendix L***	PI	Loss of habitat, habitat fragmentation, noise, mortality, etc.		
Native American Religious Concerns • *American Indian Religious Freedom Act of 1978 (42 USC 1996)* • *The Native American Graves Protection and Repatriation Act of 1990 (26 USC 3001)* ***2010 RMP pgs 11-13, 110***	PI	Scoping letters will go out to get tribal feedback. These sites are traditional cultural properties and may or may not exist in the project area. Consultation may be requested during the scoping process.		
Paleontology • *Omnibus Public Lands Act of 2009 (PL 111-11)* ***2010 RMP pgs 25, Appendix M***	PI	Several mid to high PYFC classes occur within the project area. PYFC monitoring should be incorporated into the management plans.		
Recreation • *National Trails System Act of 1968 (16 USC 1241-1249)* • *FLPMA* ***2010 RMP pgs 29-30, 58-59, Appendix E***	PI	The SRMA is a special recreation management area and the analysis and implementation of plans for travel and management would have direct effects on the recreational uses of the area. Target practicing and other recreational activities may or may not be compatible with OHV use.		
Renewable Energy Production • *Energy Policy Act of 2005 (PL 109-58)* ***2010 RMP pgs 31-32, 103***	NP	There are currently no designated leasing areas within the project. No renewable energy development areas were identified in the RMP. No applications have currently been received. Any renewable applications would go through a separate NEPA analysis on a case-by-case basis.		

Resource, Authority, RMP Conformance	Assess-ment	Rationale	Signature	Date
Soils/Watershed • *Soil and Water Resources Conservation Act of 1977. (16 USC 2001)* • *Clean Water Act (33 USC 1251)* • *Safe Drinking Water Act (42 USC 3001)* ***2010 RMP pgs 32-34, 114, 116***	PI	Effects of OHV activities on soils and watershed function include soil compaction, diminished water infiltration, diminished presence and impaired function of soil stabilizers (biotic and abiotic crusts, desert pavement), and accelerated erosion rates.		

T&E/Special Status Species (Plants and Animals) • *Endangered Species Act of 1973, as amended (16 USC 1531)* • *Plant Protection Act of 2000 (PL 106-224)* ***2010 RMP pgs 41, 50,115, 116, Appendix L***	NA	Do any exist in the project area? An, IPAC USFWS (Information for Planning and Consultation) report was ran, inputting the shapefile for the Johnson Hill Travel Management Plan. The report identified 14 Endangered Species and 7 Migratory Birds for the area. These species are generated by county, so they may or may not actually occur in the project area. No threatened or endangered species occur in the project area. Three occur adjacent to the project area and will be addressed. The species to be addressed for the project are Southwestern Willow Flycatcher, Yellow-billed Cuckoo, and Rio Grande Silvery Minnow. Both Southwest Willow Flycatcher and Yellow-billed Cuckoo inhabit dense riparian tree and shrub habitats associated with rivers and wetlands. The project area consists entirely of uplands. No river or habitat associated with the river is present. The project area is ¾ of a mile from the Rio Grande and ¼ of a mile from dense river vegetation such as salt cedar and Russian olive at its nearest point. The Johnson Hill Travel Management Plan analyzes existing routes. No new routes are proposed in the project. The project area is adjacent to the community of Pueblito. Bosquecito Road, a well-traveled county road divides the project area from the residential area and the river. Use of the county road and the off-road routes are currently occurring and will happen no more or less with the approval of the travel management plan. Therefore, the current state would be a baseline for future management decisions. Due to existing disturbance and distance from the river and species habitat, a No Effect determination has been made for Southwest Willow Flycatcher and the Yellow Billed Cuckoo. A model to measure sediment output was ran on drainages downstream from the project area. Sediment was found to be low because silt was less than 20 percent and sand was dominant. Channels in the area are rocky, have good sinuosity, and are somewhat vegetated. Therefore, travel from off road use is not causing excessive sediment into the Rio Grande which would be detrimental to fish species. A No Effect determination has been made for Resource Requires Analysis the Rio Grande Silvery Minnow.		

Resource, Authority, RMP Conformance	Assess-ment	Rationale	Signature	Date
Vegetation • *FLPMA* ***2010 RMP***	PI	Direct impacts of OHV activities on vegetation include reduced vegetation cover and growth rates, and increased potential for non-native grasses and pioneering species to become established, thus altering vegetation communities.		
Visual Resources • *FLPMA* • *NEPA* ***2010 RMP pgs 42-43, Map 6, 107, 115, 119***	PI	VRM Classes are II, III & IV and should be identified and addressed in the SRMA management plan.		
Wastes, Hazardous or Solid • *Resource Conservation and Recovery Act of 1976 (43 USC 6901)* • Comprehensive Environmental Response, Compensation, and Liability Act ((CERCLA 120(h)) and 40 CFR (Code of Federal Regulations) PART 373 • *BLM Manual Section 1703, Hazardous Materials Management* • ***2010 RMP pg 17***	PI	The Magellan petroleum pipeline is located within the management area and Magellan has an emergency plan. Routes and route designations would need to take the potential for damaging the pipeline resulting in hazmat into consideration for analysis and whether or not to restrict to Administrative use. Past monitoring has identified solid waste in the area, primarily household waste. This monitoring would be a component of the SRMA management plan.		
Water Quality • *Safe Drinking Water Act, as amended (43 USC 300f et seq., 42 USC 201).* • *Clean Water Act of 1987 (33 USC 1251 et seq.)* ***2010 RMP pgs 32, 116***	PI	Soil properties and vegetation cover may be altered by OHV use; in turn, surface patterns of precipitation runoff (amount, velocity) may be altered, resulting in accelerated rates of erosion and sedimentation and elevated levels of turbidity in affected watersheds.		
Wetlands and Riparian Zones • *EO 11990 1977* ***2010 RMP pgs 33, 41, 103-105, 148***	PI	Effects of OHV activities on soils and watershed function include soil compaction, diminished water infiltration, diminished presence and impaired function of soil stabilizers (biotic and abiotic crusts, desert pavement), and accelerated erosion rates. The project boundary is less than 1 mile from the Rio Grande.		
Wilderness (and WSAs) • *Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.)* • *Wilderness Act of 1964 (16 USC 1131 et seq.)* ***2010 RMP pgs34-35, 45, Map 4, 171-174, Maps J1-J12, 189***	PI	The project area boundary is adjacent to the Presilla WSA and the Veranito WSA. Route evaluations may need to include closures and/or signage to discourage travel into the WSAs.		

Resource, Authority, RMP Conformance	Assess-ment	Rationale	Signature	Date
General Wildlife & Wildlife Habitat • *The Sikes Act of 1974, as amended (16 USC 1271 et seq.)* ***2010 RMP pgs 48-49, 107, 116, Appendix L***	PI	Creating roads and trails (of any kind) diminishes habitat connectivity, increases the proportion of edge to interior habitat, and decreases patch size of habitats. Roads, including OHV routes, represent a principal factor contributing to habitat fragmentation at various scales. Loss of habitat, habitat fragmentation, noise, mortality, etc.		

APPENDIX F. ROUTE REPORTS

Following completion of the travel route inventory and adjustments to existing BLM geographic information system (GIS) data, a BLM Interdisciplinary Team met for several week-long planning sessions to systematically review and evaluate each of the inventoried travel routes. During route evaluation, the BLM Interdisciplinary Team used the ARS Route Evaluation software and GIS to systematically review, discuss, and document each route's location, physical characteristics, current management, operation and maintenance, authorized and permitted uses, public uses, associated biomes, all known natural and cultural resources, proximity to resources of concern, specially designated areas, and resource issues. Each intensive evaluation session included ongoing interactive Interdisciplinary Team 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 Interdisciplinary Team also considered and addressed the 43 CFR 8342.1 Designation Criteria, selecting applicable rationale demonstrating how the route would minimize impacts for each of the route's preliminary alternative designations. The process resulted in extremely thorough data capture, produced a preliminary range of reasonable designation alternatives for each route based on the alternative themes, and created a complete record of the process as documented in the route reports.

The full collection of route reports is available on the BLM's ePlanning site. Route reports provide a record of the BLM Interdisciplinary Team evaluation of each route identified during the route inventory. The header of each page of a route report displays the number that was used to identify the route during evaluation (e.g., JH0002). The number placed on published maps and used on route signs may not be the same. Each route report includes three sections: "General Background," "Evaluation Information," and "Designation Alternatives."

General Background

The first part of the "General Background" section of a route report shows the route's evaluation session date (e.g., 12/7/2020), the name of the session's contracted facilitator (in this case, planners working for BLM's contractor), and the BLM resource specialists (biologists, archaeologists, recreation planners, etc.) responsible for evaluation of the route. The second part of the "General Background" section provides physical information about the route such as length, width, use, jurisdictions over which it passes, and origin (if known). Other information may also be included along with citizen comments and proposals, as applicable. In the "Citizen Comments and Proposals" subsection, "Author" refers to the citizen who made a proposal, and "Designation" refers to what designation a citizen proposed. If there are no citizen comments or proposals, "None" will be included in the subsection to apply to all headings in it.

Facilitator(s): Cam Gale; Dennis Gale **Initial Evaluation Date:** 12/7/2020

Evaluators:
Jeremy Zimmerman, GIS Specialist
Zebb Andrews, Wildlife Biologist
Jeff Fassett, Weeds, Roads, Range Improvements
Michael Comiskey, Outdoor Recreation Planner
Matt Atencio, Asst. FO Manager, Renewable Resources, COR
Lann Moore, Fuels Specialist
Beth Rosales, Natural Resource Specialist
Virginia Alguire, Realty Specialist
Katie Hill, Archaeologist
Michael Mora, Rangeland Management Specialist
Denny Apachito, Outdoor Recreation Planner
Mark Matthews, Field Office Manager, Acting District Manager
Michael Merritt, Archaeologist

Area:	Johnson Hill			
Length: 1.59 mi.	**Width:** Dual Track	**Class:**	Primitive Roads	**Use Level:** Low
Route Type(s):	Spur; Loop; Braided			
Surface:	None identified	**Maintained:**	None identified	
Origin:	None identified	**Constructed:**	None identified	
Jurisdictions:	BLM			

Additional Information: None.

General Evaluation Questions

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

Evaluation Information

Introduction

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

Commercial, Administrative, Property, and Economics

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

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

Evaluation Information

Commercial, Administrative, Property and Economics

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

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

Type	Description
Range Facilities	Active Allotment (Pueblito Community)

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

Type	Description
None identified	

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

Type	Description
None identified	

Public Uses

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

- Primary = Main mode or activity on the route
- Secondary = Other common modes and activities
- Infreq = Infrequent (uncommon modes or activities)

Recreational Uses

The following items help to identify the purpose and need of this route. This route:
- provides public travel access to the listed recreation sites using the listed travel modes, and/or
- provides for recreational activity and experience opportunities in the area, and/or
- provides important route network connectivity for recreational access between two or more other routes.

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

Type	Description
Activities	Bicycling
	Hiking
	Hunting
	Vehicle Exploring
Modes of Transportation	By Foot
	Motorcycle
	UTV
	ATV
	Stock 4 Wheel Drive

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

Type	Description
Activities	Equestrian

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

Type	Description
Activities	Backpacking
	Birding
	Camping
	Firewood Gathering
	Geocaching
	Photography
	Recreation Therapy
	Rockhounding
	Shooting
	Sightseeing
	Wildlife Watching

Special Resource Concerns

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

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

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

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

Resource and Use Issues

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

Resource Type	Description
Biomes	In 621 - Arizo-Riverwash complex
	In 650 - Typic Camborthids-Nolam association
	In 620 - Bluepoint loamy fine sand
Managed Species	In Gambel's Quail habitat
	In Mule deer habitat
VRM/RSC	In VRM Class IV - Major Modification
Special Management Areas	In SRMA - Special Recreation Management Area
	In National Scenic Byway (Starts in Quebradas Backcountry Byway)
Water Resources	In Desert wash
Misc. Resources	In Erosive soil - High potential / saline soils
	In PFYC Class 4 - High

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

Designation Alternatives

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

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

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 Interdisciplinary Team assessed the manner in which each potential route designation within the Project Area is consistent with 43 CFR 8342.1.

Potential Alternative Route Designations

Alternative A (Current Management, No Action Alternative)

Area Designation:
Limited

Route Designation:
Undesignated

This route was not addressed in previous planning or NEPA processes.

Alternative B

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

OHV Public: Designation per 43 CFR § 8342.1: Closed

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

How Designation Addresses Criteria Above: Closing this route would minimize impacts to wildlife habitat by eliminating motorized uses (reducing the potential for harassment of wildlife) and removing the route footprint (reducing habitat fragmentation.) Closing this route would contribute to retaining or restoring vegetation and soil cover by eliminating motorized use and reducing the route footprint, thereby minimizing the potential for future soil erosion and vegetation damage.

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

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

Closure Method:

Alternative C

Comprehensive Designation:
LIMITED W/ MANAGEMENT

Comprehensive Designation Type:
Limited to transportation type.

Specific designations by user type:

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

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

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

OHV Public: **Designation per 43 CFR § 8342.1: Limited** - The public may use this route by single track vehicles (including motorcycles and all non-motorized modes), year-round.

Designation Criteria Addressed and Relevant to Route Issues:

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

How Designation Addresses Criteria Above: By limiting vehicle width to single track, the potential for conflicts between OHV users of different vehicle types would be minimized. Due to the lower traffic volume and speeds expected on this route, allowing its continued use would contribute to minimizing the overall route network's potential for contributing to soil erosion, habitat disruption, vegetative damage and impacts to cultural resources. Continued use of this route with the added application of specific management prescriptions, would minimize potential impacts to documented resources.

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

- 43 CFR § 8342.1 (d)

Potential Management Actions:

Monitoring: Other - Wildlife habitat

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

Alternative D

Comprehensive Designation:
OPEN

Specific designations by user type:

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

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

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

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

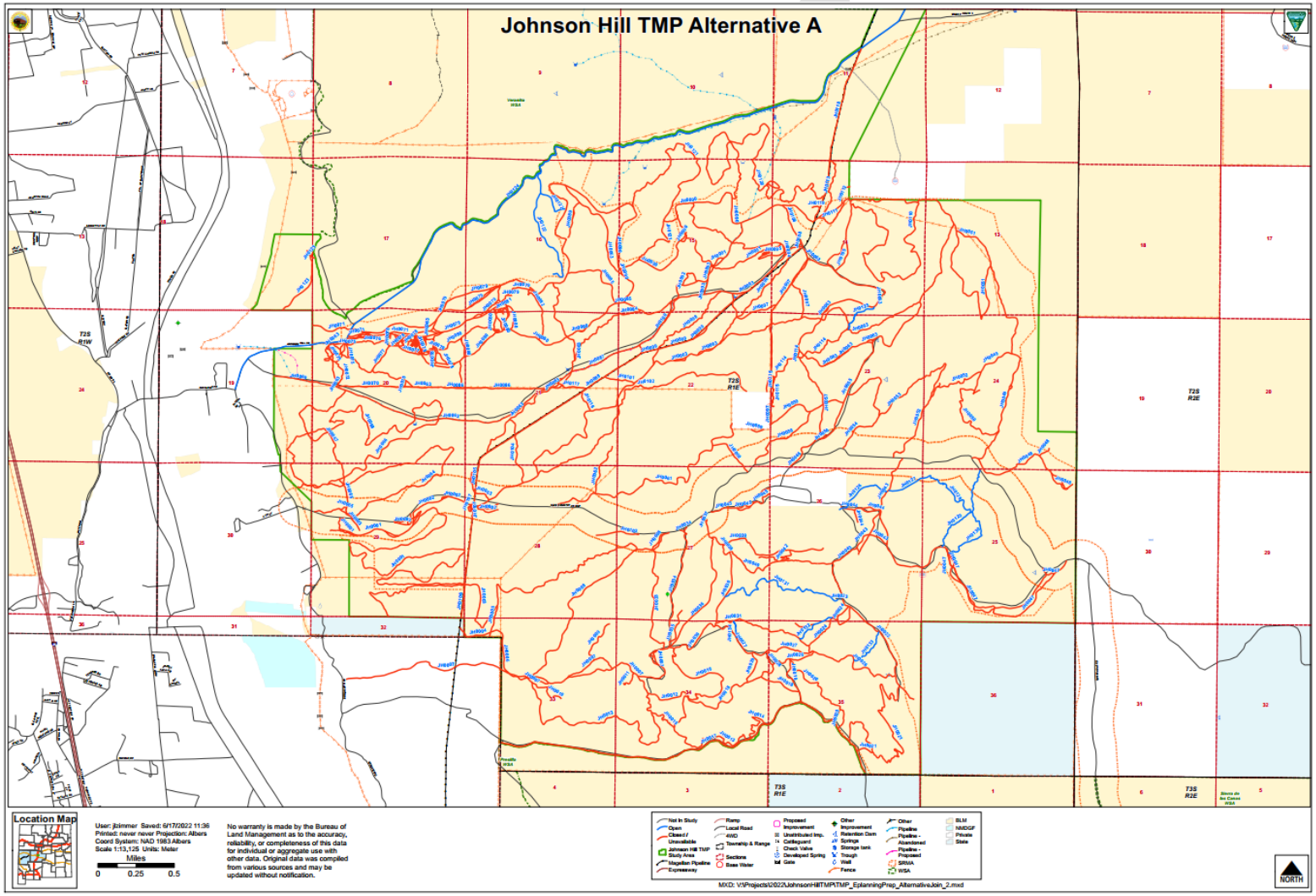
Designation Criteria Addressed and Relevant to Route Issues:
• 43 CFR § 8342.1 (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
• 43 CFR § 8342.1 (b) Areas and trails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

How Designation Addresses Criteria Above: Allowing continued use of this route would minimize the potential for impacts to documented resources by providing specific recreation activity and experience opportunities that reduce or eliminate the inclination for users to travel off-route. Due to the low traffic volume and speeds expected on this route, allowing its continued use would contribute to minimizing the route's potential for habitat damage, wildlife harassment, and disruption to movement patterns. Due to the lower traffic volume and speeds expected on this route, allowing its continued use would contribute to minimizing the overall route network's potential for contributing to soil erosion, habitat disruption and/or vegetative damage.

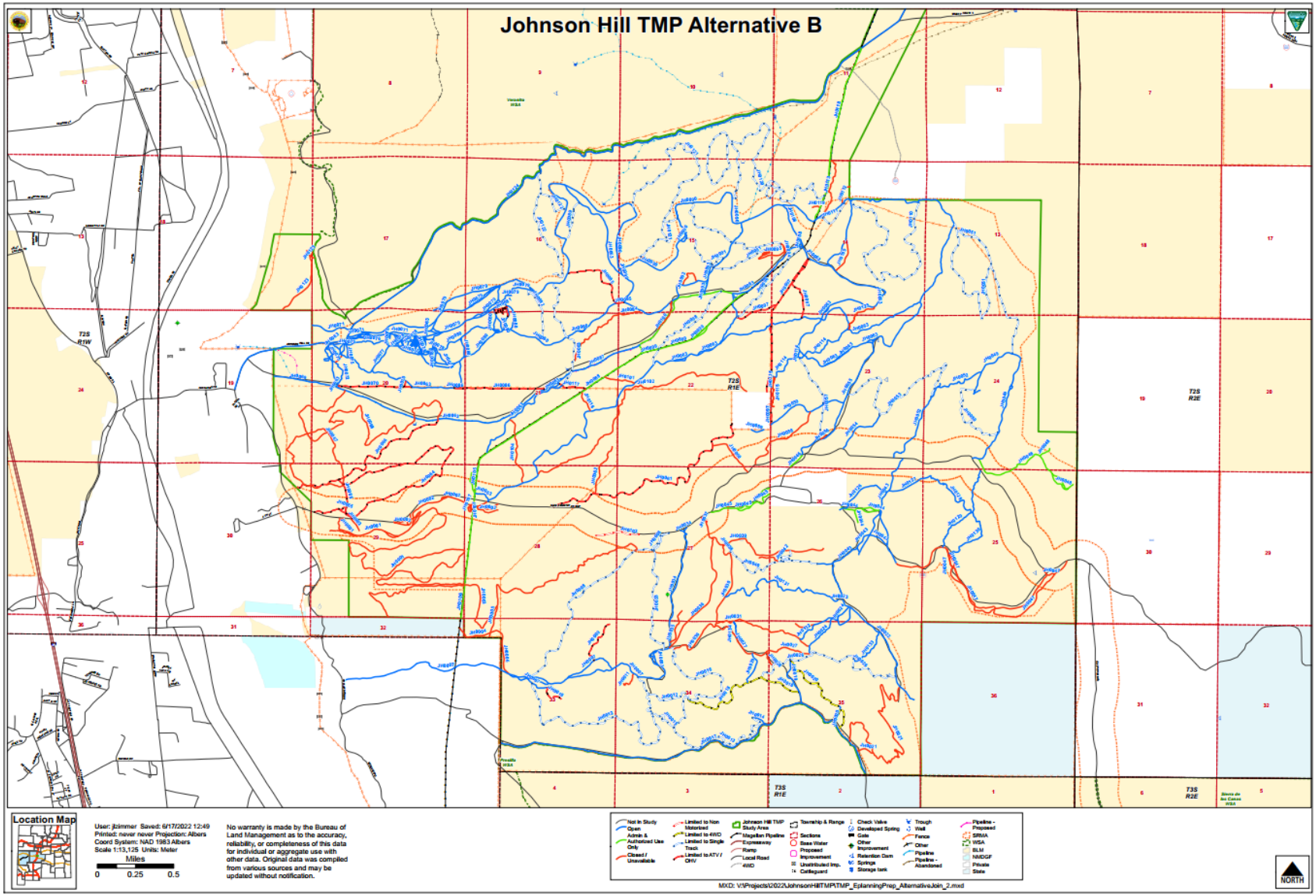
Designation Criteria Addressed but Not Relevant to Route Issues:
(no known conflicts among users or no known resource concerns to minimize for)
• 43 CFR § 8342.1 (c)
• 43 CFR § 8342.1 (d)

APPENDIX G. ALTERNATIVE ROUTE NETWORK MAPS

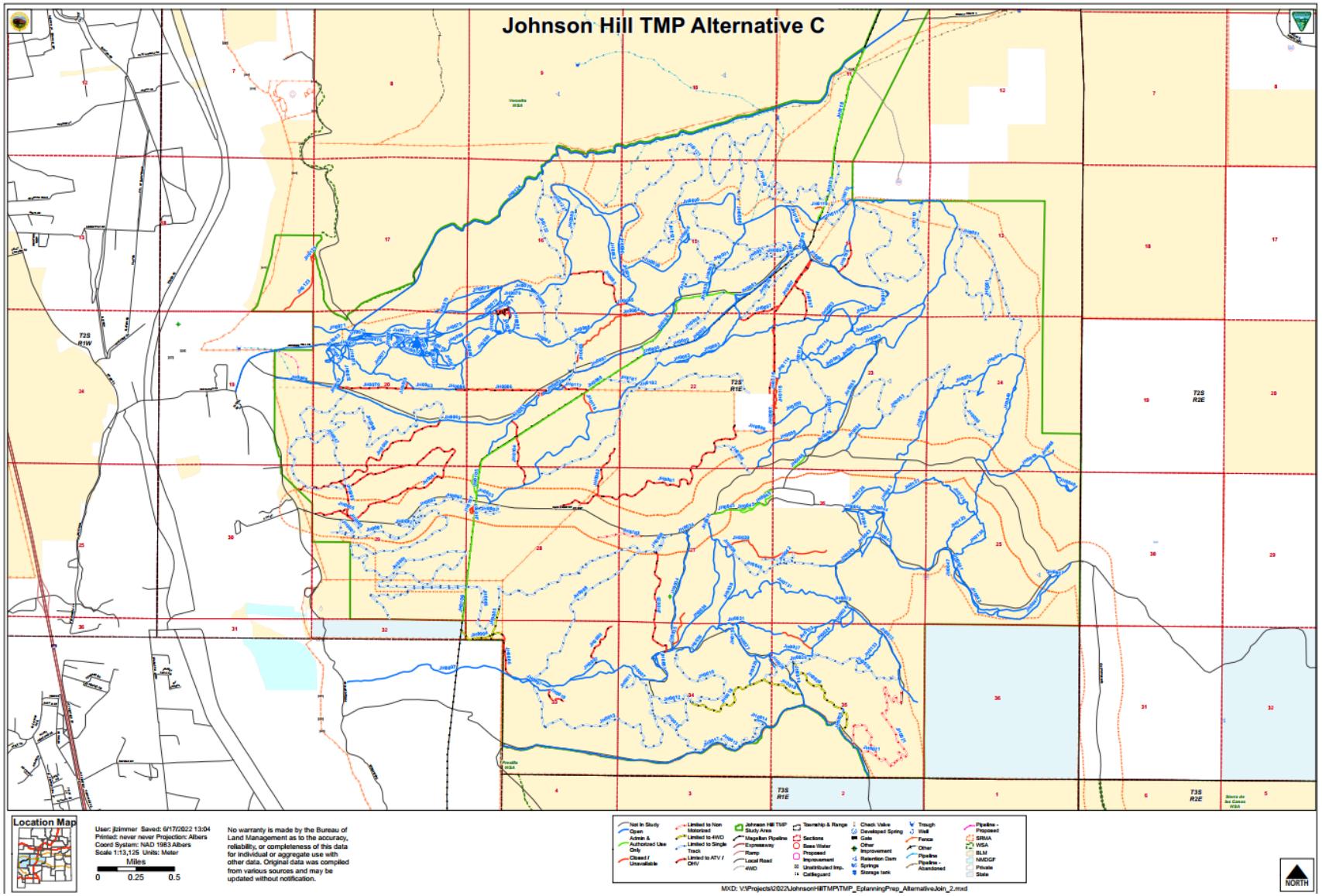
Map 2: Alternative A



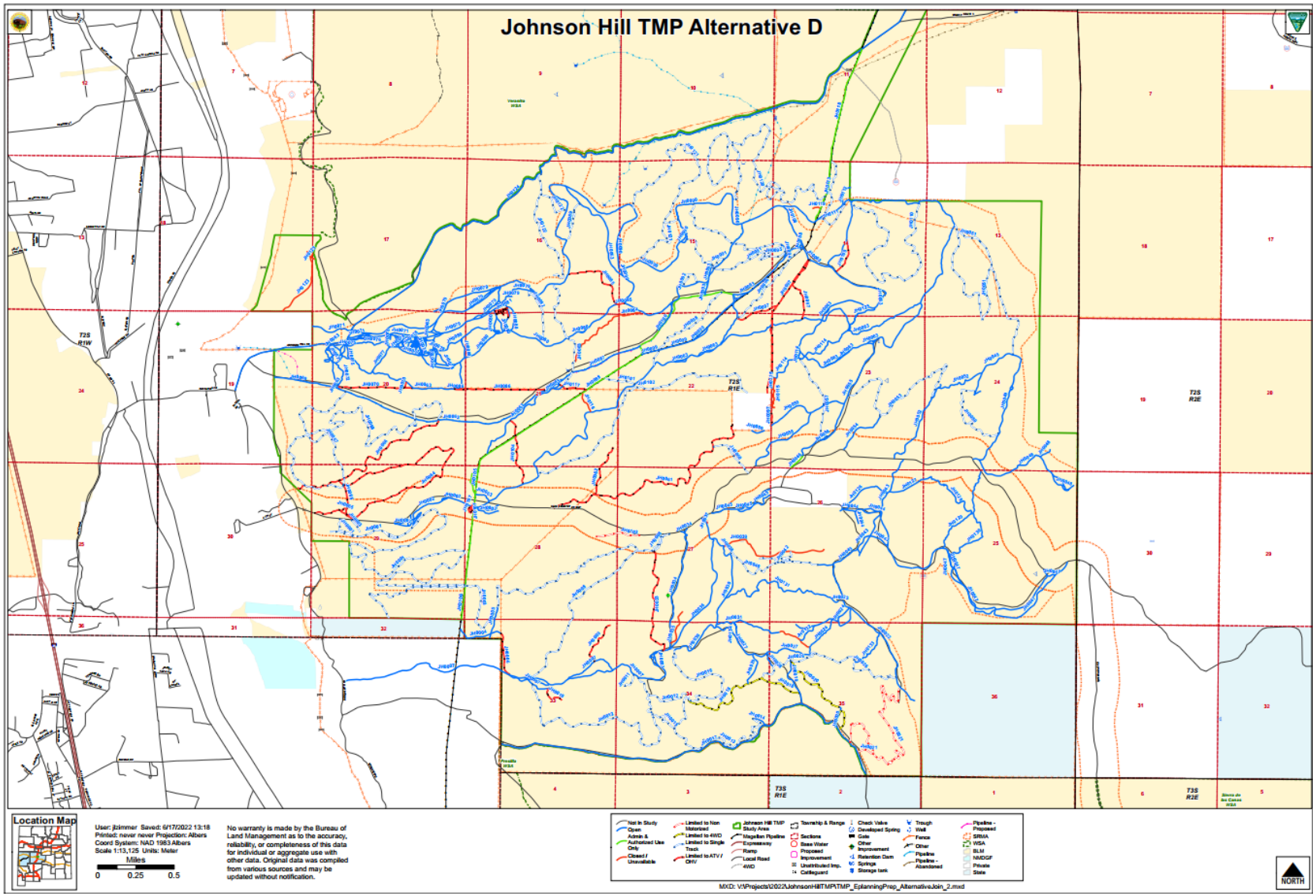
Map 3: Alternative B



Map 4: Alternative C



Map 5: Alternative D



APPENDIX H. GLOSSARY

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

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

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

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

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

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

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

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

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

Cultural resource: A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural

resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. They may be but are not necessarily eligible for the National Register of Historic Places. Cultural resource inventory classes:

1. Class I - existing information inventory: a study of published and unpublished documents, records, files, registers, and other sources, resulting in analysis and synthesis of all reasonably available data. Class I inventories encompass prehistoric, historic, and ethnological/sociological elements, and are in large part chronicles of past land uses. They may have major relevance to current land use decisions.
2. Class II - probabilistic field survey: a statistically based sample survey designed to help characterize the probable density, diversity, and distribution of archaeological properties in a large area by interpreting the results of surveying limited and discontinuous portions of the target area.
3. Class III - intensive field survey: a continuous, intensive survey of an entire target area, aimed at locating and recording all archaeological properties that have surface indications, by walking close-interval parallel transects until the area has been thoroughly examined. Class III methods vary geographically, conforming to the prevailing standards for the region involved.

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

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

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

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

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

Effects:

- **Adverse or detrimental:** Contribute to degradation of a resource or resource use.
- **Adverse effect to historic properties:** An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the

integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

- **Beneficial:** Contribute to enhancement or restoration of a resource or resource use.
- **Cumulative:** According to the Code of Federal Regulations (40 CFR 1508.7), a cumulative effect "is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (GPO 2012). In other words, these effects are the sum of the direct and indirect effects of an action and the direct and indirect effects of other actions on the same affected resources/uses.
- **Direct:** Caused by alternative (same time and place).
- **Indirect:** Caused by alternative but later in time or further in distance but still reasonably foreseeable.
- **Long-term:** Generally considered to last 10 years or more.
- **Minor:** The effect or impact is slight but detectable: there would be a small change to the quality of the physical, biological, social, and economic values and resources.
- **Negligible:** The effect or impact is at the lower level of detection; there would be no measurable change to the quality of the physical, biological, social, and economic values and resources.
- **Residual:** Direct and indirect effects that remain after the application of all mitigation measures.
- **Short-term:** Generally considered to last from the point of occurrence to several weeks or months but not expected to last beyond a year or two.

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

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

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

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

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

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

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

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

Geographic Information System (GIS): "System designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. The key word to this technology is Geography – this means that some portion of the data is spatial. In other words, data that is in some way referenced to locations on the earth. Coupled with this data is usually tabular data known as attribute data. Attribute data can be generally defined as additional information about each of the spatial features. An example of this would be schools. The actual location of the schools is the spatial data. Additional data such as the school name, level of education taught, student capacity would make up the attribute data. It is the partnership of these two data types that enables GIS to be such an effective problem-solving tool through spatial analysis. GIS is more than just software. People and methods are combined with geospatial software and tools, to enable spatial analysis, manage large datasets, and display information in a map/graphical form." (University of Wisconsin-Madison Libraries 2018)

Ground Transportation Linear Feature: 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 Ground Transportation Linear Feature data standard).

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

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

Impassable: Routes 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. Route deterioration or vegetation overgrowth may be a result of neglect, irregular maintenance, or management decisions.

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

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

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

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

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

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

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

Minimize: Limit the degree or magnitude of.

Mitigation: in general, a combination of measures to lessen the impacts of a project or activity on an element of the natural environment or various other cultural or historic values; more specifically, as defined by the Council on Environmental Quality in its regulations for implementing NEPA, mitigation includes: (a) avoiding the impact, (b) minimizing the

impact, (c) rectifying (i.e., repairing, rehabilitating, or restoring) the impact (d) reducing or eliminating the impact through operations during the life of the project, or (e) compensating by replacing or substituting resources (40 CFR Section 1508.20).

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

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

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

National Environmental Policy Act (NEPA): Requires federal agencies to assess and disclose the environmental effects of proposed actions prior to making decisions. BLM travel management must conform to NEPA requirements. This legislation established a landmark national environmental policy which, among other things, encourages environmental protection and informed decision-making. It provides the means to carry out these goals by:

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

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

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

National Register Eligibility Definitions:

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

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

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

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

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

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

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

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

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

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

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

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

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

- **OHV Closed Areas:** An area where OHV use is prohibited. Access by means other than OHVs, such as by motorized vehicles that fall outside the definition of an OHV or by mechanized or non-mechanized means, is permitted. The BLM designates areas as closed, if necessary, to protect resources, promote visitor safety, or reduce user conflicts (see 43 CFR 8340.0-5(h)).
- **OHV Limited Areas:** An area where OHV use is restricted at certain times, in certain areas, and/or to certain vehicular use. Examples of restrictions include numbers or types of vehicles; time or season of use; permitted or licensed use only; use limited to existing, designated roads and trails; or other restrictions necessary to meet resource management objectives, including certain competitive or intensive use areas that have special limitations (43 CFR 8340.0-5 (g)).
- **OHV Open Areas:** A designated area where all types of OHV travel is permitted at all times, anywhere in the area subject only to the operating restrictions set forth in subparts 8341 without restriction (43 CFR 8340.0-5(f)). Open area designations are made to achieve a specific recreational goal, objective and setting and are only used in areas managed for intensive OHV activity where there are no special restrictions or where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel.

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

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

Perennial stream: Perennial streams carry flowing water continuously throughout the year, regardless of weather conditions. It exhibits well-defined geomorphologic characteristics

and in the absence of pollution, thermal modifications, or other man-made disturbances has the ability to support aquatic life.

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

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

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

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

Record of Decision: Decision document associated with an environmental impact statement (equivalent to an environmental assessment's Decision Record).

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

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

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

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

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

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

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

such that if motorized use is allowed on a road, various forms of non-motorized use are also allowed.

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

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

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

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

Routes: Multiple roads, trails, and primitive roads; a group or set of roads, trails, and primitive roads that represents less than 100 percent of the BLM transportation system. Generically, components of the transportation system are described as "routes."

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

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

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

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

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

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

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

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

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

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

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

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

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

Travel management plan: A document that describes decisions related to the selection and management of a travel network and transportation system.

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

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

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

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

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

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

Way: A vehicle route within a wilderness study area that was in existence and identified during the Federal Land Policy and Management Act Section 603-mandated wilderness inventory. The *Interim Management Policy for Lands under Wilderness Review (H-8550-1)* defines a way as "a trace maintained solely by the passage of vehicles which has not been improved and/or maintained by mechanical means to ensure relatively regular and continuous use." The term is also used during wilderness inventory to identify routes that are not roads. The term developed from the definition of the term "roadless" provided in the *Wilderness Inventory Handbook* (September 27, 1978), as follows: "roadless: refers to the absence of roads which have been improved and maintained by mechanical means to insure relatively regular and continuous use. A way maintained solely by the passage of vehicles does not constitute a road."

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

Wilderness characteristics: Wilderness characteristics include size, the appearance of naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation. Indicators of an area's naturalness include the extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats. Outstanding opportunities for solitude or primitive and unconfined types of recreation may be experienced when the sights, sounds, and evidence of other people are rare or infrequent, in locations where visitors can be isolated, alone or secluded from others, where the use of the area is through non-motorized, non-mechanical means, and where no or minimal developed recreation facilities are encountered.