United States Department of the Interior
Bureau of Land Management

Environmental Assessment
DOI-BLM-UT-Y010-2015-0249-EA

Needles and Anticline Overlook Road Improvement Project, San Juan County, Utah

Location: *Canyon Rims Special Recreation Management Area, Moab, Utah*

Applicant: Bureau of Land Management - Moab Field Office and Federal Highways Administration - Central Federal Lands Highway Division

Moab Field Office
82 East Dogwood
Moab, Utah 84532
Phone: (435) 259-2100
Fax: (435) 259-2106

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1 PURPOSE & NEED

1.1 INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the roadway and safety improvements within the Canyon Rims Special Recreation Management Area (SRMA) as proposed by the Bureau of Land Management (BLM) and the Federal Highway Administration - Central Federal Lands Highway Division (FHWA-CFLHD). The BLM has prepared this EA in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [U.S.C.] Section 4321 et seq.), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and the BLM Utah NEPA Guidebook (2010).

The EA assists the BLM in project planning and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record (DR) may be signed for the EA approving the selected alternative, whether the Proposed Action Alternative or another alternative. A DR, including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in "significant" environmental impacts (effects) beyond those already addressed in Moab Resource Management Plan (RMP) (*October, 2008*).

1.2 BACKGROUND

The Canyon Rims SRMA is located south of the City of Moab in San Juan County, Utah and is situated on top of a large plateau encompassing 101,531 acres. The designated roadway network within the Canyon Rims SRMA includes two BLM roads (Needles Overlook Road and Anticline Overlook Road) totaling 37.7 miles (**Figure 1, Appendix A**.), which are divided into three segments. The first 22 miles of road (Needles Overlook Road) from U.S. Highway 191 to the Needles Overlook consists of an asphalt paved surface and is divided into two segments. The first segment extends from the Needles Overlook to the intersection of Anticline Overlook Road, and the second segment extends from the intersection with Anticline Overlook Road to U.S. Highway 191. The third roadway segment (Anticline Overlook Road) is 15.7 miles long and consists of aggregate surface. This third segment begins at the Y-intersection with Needles Overlook Road and ends at the Anticline Overlook. The roadways provide access to two developed fee campgrounds, four scenic overlooks, and two trailheads. Both roads are classified as Scenic Backways by Utah Administrative Code (UAC, 2015). The majority of visitors

access the roadways to observe the Colorado River's canyon from the overlooks at the edge of the plateau.

The Needles Overlook Road was designed in 1963 and was constructed with two inches of asphalt over five inches of aggregate material. Since the roadway was constructed, numerous maintenance activities have been conducted, including the application of crack seal in 1998, a two inch overlay on the Needles Overlook Loop Road in 1999, a chip seal coat in 1999, crack sealing in 2008 and 2009, and the application of a chip seal in 2010. A crack seal is a method used to repair cracks in pavement. Similarly, a chip seal, or seal coating, is a protective surface application to pavement that prevents water from penetrating the roadway structure.

The Anticline Overlook Road was designed in 1969 and constructed between 1969 and 1971. Construction of this section of roadway consisted of six inches of compacted aggregate, which has been maintained by grading the roadway surface on a bi-annual basis. In 2009 roadway maintenance required the addition of one inch of untreated base course aggregate to be added to the roadway surface. Base course aggregate typically consists of a layer of material in a road that is located directly under a surface layer. Use on both Needles Overlook and Anticline Overlook Roads has increased in the past decade. The Canyon Rims SRMA receives about 85,000 visits per year (BLM 2015a) and, based on historical growth, increases in visitation is expected to increase by approximately 3.1 percent a year (BLM, 2016).

The Proposed Action Alternative would include surface improvements to rehabilitate, restore, and resurface the two existing roadways primarily to improve public access and safety. Further details on the specific improvements proposed for each roadway segment along with alternatives are provided in **Section 2.2.1**. These improvements would allow better and safer access to recreational facilities within the Canyon Rims SRMA. The FHWA-CFLHD was requested to provide services to deliver design and construction of the Canyon Rims SRMA Road Network project. FHWA-CFLHD retained Muller Engineering Company, Inc. (Muller) to prepare and deliver a Project Delivery Plan (PDP) for the proposed roadway improvements.

1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The BLM and FHWA-CFLHD both share the common goal of improving public access and safety to federal lands. The purpose of the Proposed Action Alternative is to enhance public access and safety to Canyon Rims SRMA with improvements to rehabilitate, restore, and resurface the roadway network in the management area. The purpose of the Proposed Action Alternative for the BLM, as the land manager of the Canyon Rims SRMA, is to analyze the proposed project impacts. The purpose of the project for the FHWA-CFLHD is to improve the accessibility and safety of the existing transportation network in the management area.

The need to repair and improve the existing roadway network within the Canyon Rims SRMA is to reduce annual maintenance costs and issues, reestablish proper drainage, and improve safety. These would be accomplished through pothole repair, gravel replacement, culvert cleaning, ditch repair, slope flattening, paving, and upgrading signs

to meet current standards. In addition, the BLM's need is to ensure the road improvements are completed in a manner that minimizes impacts to the natural, social, and cultural resources in the area. Therefore, the Canyon Rims SRMA Road Improvement Project includes the following objectives:

1. Improve public access to two campgrounds, four scenic overlooks, and two trailheads within Canyon Rims SRMA.
2. Enhance roadway safety to meet current standards and to minimize existing traffic concerns regarding substandard roadway conditions and signage.
3. Decrease annual maintenance costs and minimize operational issues by replacing and repairing drainage infrastructure.
4. Inclusion of environmental protection measures to minimize impacts to resources.

1.3.1 Decision to be Made

The decision to be made by the BLM is whether to approve, not approve, or approve with modifications the proposed Canyon Rims SRMA Road Improvement Project, as described in this document and determine if impacts from the Proposed Action Alternative are significant, thus resulting in further evaluation through the construction of an EIS.

1.4 CONFORMANCE WITH BLM LAND USE PLANS

2008 Moab Field Office Resource Management Plan (RMP)

The Proposed Action Alternative is in conformance with the 2008 Approved Moab Field Office RMP, specifically the following recreation goals and objectives, management decisions, and focus areas, which states:

> **REC-14 (page 82)** Continue to manage Kane Creek Road to Hurrah Pass and the roads to Needles, Anticline, and Minor overlooks as Utah Scenic Backways.
>
> **REC-36 Canyon Rims SRMA (page 85):** Manage the Canyon Rims SRMA (101,531 acres) as a Destination SRMA to protect, manage and improve the natural resources of the area while allowing for recreation activities such as developed camping, visiting scenic overlooks, auto touring on the primary roadway system, touring the secondary roadway system by motorized vehicle and mountain bike, and hiking and backpacking the canyons (in accordance with the Recreation Opportunity Spectrum (ROS) classes) utilizing interpretive and educational opportunities to realize the potential of the area. Major management actions in the Canyon Rims SRMA include:
>
> - Manage the area as open to mineral leasing with no surface occupancy allowed within visual resource management (VRM) Class II areas, as well as to all lands on the west side of the Anticline road. This includes the VRM Class II corridor along the Needles and Anticline Overlook roads;

- Developed recreation sites are managed as open to leasing, but identified resource values require special operation constraints. As stated in the Mineral Lease Plan (Appendix A – Mineral Leasing Stipulations and Lease Notices), no surface disturbing activities are allowed within 0.5 miles of developed recreation site boundaries.
- Manage the area to maintain Recreation Opportunity Spectrum (ROS) classes as inventoried.
- Acquire or exchange private and State lands from willing landowners.
- Manage the entire area as Off-Highway Vehicle (OHV) travel limited to designated roads.
- Manage the western rim land areas of Hatch Point as Visual Resource Management (VRM) Class II and the remainder of the area as VRM Class III.
- Maintain and/or improve all existing developed recreation sites as specified in the Canyon Rims Recreation Area Management Plan.
- Restrict camping near developed recreation sites.
- Close the entire recreation area to wood cutting and gathering.
- Manage Hatch Wash and the lower section of West Coyote Creek for primitive, non-motorized recreation.
- Restrict backcountry motorized events to commercial and non-race special events on the Flat Iron Mesa Jeep Safari route only.
- Manage the Windwhistle Nature Trail, Anticline Overlook Trail, Needles Overlook Trail, and Trough Spring Canyon Trail for hiking use only
- Consider development of additional trails and recreation facilities only as necessary.

- **Focus Area -- Scenic Driving Corridors:** Needles Overlook and Anticline Overlook Roads – Utah Scenic Backways. Manage for scenic driving enjoyment. The corridor is defined as having a width of 1/2 mile from centerline (or to border of adjoining Focus Area) (REC-36, pages 85-86).

Specific resource values are addressed through the Approved RMP, which eliminated the need to designate some areas as Areas of Critical Environmental Concern (ACEC) because other resource decisions in the RMP already provide adequate protection. Although not required, the RMP still lists potential ACECs, their relevance and value, and the planning decisions that were carried forward to protect these values. Management protection for scenic values was specifically provided for approximately 23,400 acres of the total 101,531 acres within Canyon Rims SRMA, as described below:

The Canyon Rims SRMA is "managed as VRM Class II and III to protect scenic values. Oil and gas leasing and other surface disturbing activities are managed with a controlled

surface use stipulation to protect scenic values. Canyon Rims is managed as a Special Recreation Management Area with special emphasis given to these scenic values. Motorized activity is allowed only on designated routes to protect scenic values. Thus, the relevant and important values would continue to be protected (2008 Moab Field Office RMP, page 31)." Since the proposed roadway maintenance and improvements would enhance recreation values and would provide an opportunity for public enjoyment, the proposal is in conformance with the recreational Scenic Driving Corridors provision for the Canyon Rims SRMA.

2008 Monticello Field Office Resource Management Plan (RMP)

The entrance area to Canyon Rims SRMA falls under the BLM Monticello Field Office. The 2008 Approved Monticello Field Office RMP does not state anything regarding the Canyon Rims SRMA or roads within the management area. Therefore, the proposed action is in conformance with the 2008 Approved Monticello Field Office RMP.

1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS

The Proposed Action Alternative is in compliance with the following federal, State, and local plans to the maximum extent possible:

- Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.);
- National Environmental Policy Act of 1969 (as amended);
- Migratory Bird Treaty Act (1918 as amended) and Executive Order (EO) 13186;
- National Historic Preservation Act of 1966 (as amended);
- Public Rangelands Improvement Act of 1978; and
- Endangered Species Act of 1973 (as amended).

2008 San Juan County Master Plan

The Proposed Action Alternative is not specifically mentioned in the 2008 San Juan County Master Plan, but the County plan states the following goals and objectives relating to transportation:

San Juan County Transportation Plan:

- "It is the desire of San Juan County to have routes of travel accessible by motor vehicle for all users, including the elderly, physically handicapped and disabled, to gain access to the public lands."
- "It is San Juan County's desire to provide access throughout the county to meet the needs of both residents and visitors for a wide variety of purposes. These purposes range from consumptive (mining, oil, gas, etc.) to recreational uses (hiking, biking, using ATVs, horseback riding, etc.) (San Juan County, 2008)."

1.6 IDENTIFICATION OF ISSUES

Internal efforts for the proposed project were initiated by the BLM Moab Field Office (MFO) in 2012 and documented in a "Route Assessment Review" (RAR). Recommendations outlined in the RAR included providing safety enhancements, culvert cleaning, and upgraded signing and striping for both roadways. In addition, the RAR

recommends chip sealing Needles Overlook Road. Improvements recommended for Anticline Overlook Road include paving the existing gravel surface and upgrading the parking area at Anticline Overlook.

In 2014, a second internal scoping process occurred among BLM MFO and FHWA-CFLHD staff; the intent of this recent scoping process was to refine and develop the proposed road improvement project within Canyon Rims SRMA, as outlined in **Chapter 2** of this EA as Alternative 1 - the Proposed Action Alternative.

FHWA-CFLHD, Muller and the BLM MFO conducted a project scoping visit to the Canyon Rims SRMA on June 17 through 19, 2014. FHWA-CFLHD and staff from Muller spent a second day in the field gathering additional information to prepare the PDP. Based on the information gathered for the PDP, FHWA-CFLHD and the BLM MFO decided to fund this project for design and retained Muller for these services in April 2015.

On October 5, 2015, BLM MFO planning staff posted the scoping notice for the Proposed Action Alternative on the BLM's ePlanning website, which commenced the beginning of the public scoping period. Articles were posted in local newspapers to inform the public of the scoping period. The 15-day scoping period concluded on October 21, 2015. Two entities, the State of Utah (Office of the Governor, Public Lands Policy Coordinating Office), and the Southern Utah Wilderness Alliance, responded during the scoping period. The State of Utah was in favor of the Proposed Action Alternative and the Southern Utah Wilderness Alliance was critical of the Proposed Action Alternative in regards to the NEPA process. **Appendix B** summarizes the public scoping comments and responses.

The Interdisciplinary Team Checklist contains a checklist of all resources and issues considered by BLM MFO staff. This checklist is attached as **Appendix C**. Issues identified for analysis include those brought up by the public during the scoping period as well as those issues brought up by BLM MFO staff. Public scoping issues raised include concerns regarding several species including pronghorn, Gunnison's prairie dogs, and burrowing owls; concerns regarding the NEPA analyses including development of alternatives and analyzing impacts to various resources (recreation and other land uses, wildlife, visual resources); and cumulative impacts. All of these issues are addressed in the Environmental Assessment.

Those issues carried forward for analysis in the EA area: Cultural Resources, Livestock Grazing, Threatened and Endangered, or Candidate Species; Utah BLM Sensitive Species; Migratory Birds; Wildlife; Visual Resources; and Recreation.

1.6.1 Cultural Resources

- Would Cultural Resources be impacted by the project?

1.6.2 Livestock Grazing

- Would the project reduce the number of AUMs available in the allotments?
- Would the project result in an increase in vehicle/livestock collisions?

1.6.3 Migratory Birds

- How would be the proposed action affect migratory birds and raptors?

1.6.4 Recreation

- Would the access to the northern part of the Canyon Rims SRMA be enhanced?
- Would enhanced access to the northern area increase visitation to areas that some would prefer to remain largely unvisited?

1.6.5 Threatened and Endangered, or Candidate Species

- How would be the proposed action affect Mexican spotted owls and Designated Critical Habitat for the Mexican Spotted Owl?

1.6.6 Utah BLM Sensitive Species

- How would be the proposed action affect Utah BLM sensitive species such as kit fox, burrowing owls and Gunnison prairie dogs?

1.6.7 Visual Resources

- Would improving the road through repaving or converting the gravel road to pavement impact the visual resources along the Utah Scenic Backway?

1.6.8 Wildlife

- What wildlife species that would be impacted by the proposed project?
- How would the proposed action impact pronghorn and crucial year round habitat?
- Would the project increase speeds on the Anticline Overlook road resulting in more wildlife collisions?

1.7 RESOURCES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

The follow sections provide information regarding resources that were identified by either the public or BLM as a potential resource of concern, but based on further discussion with BLM resource staff during the scoping period and development of the EA was determined not to be impacted by the proposed action or impacts were considered to be negligible.

Waters of the United States

A jurisdictional delineation and report for Waters of the United States was prepared by Amec Foster Wheeler for the FHWA-CFLHD in advance of the proposed project. Several ephemeral drainages and numerous erosional features were observed within the Project Area. The majority of ephemeral drainages identified within the Project Area did not appear to have discrete connection to downstream drainages. No wetlands were identified within the Project Area. A total of 0.197-acre of drainages were identified within the Project Area, of which 0.067-acre are proposed as jurisdictional Waters of the United States. A request for an Approved Jurisdictional Determination (JD) was submitted to the

U.S. Army Corps of Engineers (Corps) On April 21, 2016; this request is still being processed. Project activities within any Waters of the United States are subject to permitting requirements of Section 404 of the Clean Water Act. Given the scope of project activities, permitting is anticipated to occur under Nationwide Permit 14, Linear Transportation Projects. Project activities may be subject to additional surface water quality certification and permitting requirements, including Section 401 of the Clean Water Act and Utah Pollutant Discharge Elimination System Construction General Permit, administered by Utah Department of Environmental Quality. Although there would be impacts to Waters of the United States during culvert replacement, these impacts were determined to be negligible, thus this resources was not analyzed further in this Environmental Assessment.

Socioeconomics

The Proposed Action Alternative is likely to have a short-term positive impact during construction due to local jobs provided for the duration of construction. Long-term positive impacts are expected to be negligible because improvements to the road are not anticipated to increase visitation to the area. Visitation to the Canyon Rims SRMA has increased by approximately 3.1 percent a year, and that level of increase is anticipated to continue in the foreseeable future.

1.8 SUMMARY

This chapter summarizes the purpose and need of the proposed project, as well as the relevant issues (i.e., those elements of the human environment that could be affected by the implementation of the proposed project). In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM MFO has considered and/or developed two alternatives. These alternatives are presented in **Chapter 2** and **Chapter 3** presents the affected environment within the Project Area. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in **Chapter 4** for each of the identified issues.

2 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 INTRODUCTION

Two alternatives are described and analyzed in this EA. Alternative 1 – the Proposed Action Alternative, was developed based on the needs identified by the BLM MFO and FHWA-CFLHD. This alternative, in addition to Alternative 2, the No Action, provides the basis for public and agency input. No other alternatives were considered or analyzed for this EA.

2.2 ALTERNATIVE 1 – PROPOSED ACTION

The proposed roadway improvements include resurfacing, reconditioning and rehabilitating the roadway surfaces along 37.7 miles of roadway. No new roadway right-of-way (ROW) requisition would be required as part of this project. The 37.7 miles of roadway are organized into three roadway segments. The three roadway segments include: Needles Overlook Road (Segments 1 and 2), and Anticline Overlook Road (Segment 3) as shown on Figure 1. Each segment is described in more detail below. A specific year for project construction has not been determined at the time of this report. See **Chapter 4** for additional details concerning future surveys that will be conducted prior to construction.

The total impact area anticipated for the Proposed Action Alternative includes 57 acres of permanent impacts and 129 acres of temporary impacts within the Project Area, adding up to 186 acres (**Figure 2 in Appendix A**). Temporary disturbance is defined as disturbance that would occur during construction but would be reclaimed after construction is completed. Temporary disturbance would be present until establishment of vegetation occurs as a result of reseeding. The permanent disturbance includes areas that are being paved but already have existing disturbances, such as the gravel Anticline Overlook Road. The permanent and temporary disturbance calculations do not include the existing Needles Overlook Roadway that would only be repaved.

2.2.1 Roadway Segments

Segment 1

- Segment 1 begins at the Needles Overlook and ends at the Y-intersection of Needles Overlook Road with Anticline Overlook Road. Segment 1 is approximately 6.5 miles long and consists of two-lane roadway averaging 22 feet wide and is comprised of chip seal over asphalt pavement, which has been described to be in fair condition. This segment runs from milepost (MP) 15.2 to MP 22

Segment 2

- Segment 2 begins at the Y-intersection of Needles Overlook Road with Anticline Overlook Road and ends at the junction of U.S. Highway 191 at the entrance to Canyon Rims SRMA. Segment 2 is approximately 15.5 miles long and consists of two-lane roadway averaging 22 feet wide and is comprised of chip seal over asphalt pavement. The pavement in Section 2 show signs of distress and a significant amount of cracking has occurred in areas for several miles beginning

approximately 12 miles from the Highway 191 intersection. Also, several cold patch (cold asphalt repair material) areas have failed along this section of roadway. This segment runs from MP 0 to MP 15.2.

Segment 3

- Segment 3 includes the entire length of Anticline Overlook Road beginning at the Y-intersection with Needles Overlook Road and ending at the Anticline Overlook. Segment 3 is approximately 15.7 miles and consists of two-lane roadway averaging 23 feet wide with an aggregate surface in good condition. There are several viewing areas along this segment comprised of widened roadway sections (pullouts) varying from 37 to 40 feet wide for several hundred feet each. This segment runs from MP 0.0 to MP 16.8.

2.2.2 Proposed Roadway Improvements

The proposed construction activities associated with each roadway segment are listed below and further descriptions of those activities are listed in Section 2.2.4. The construction activities include all repair, replacement, and improvement work, in addition to ongoing routine maintenance. Construction activity would result in 186 acres of disturbance including 129 acres of temporary disturbance and 57 acres of permanent disturbance. Temporary disturbance includes area impacted during construction that would be reclaimed following construction by grading and or reseeding.

Segment 1 (Needles Overlook Road from Needles Overlook to the "Y" intersection)

- Crack sealing
- Chip seal the roadway
- Miscellaneous shouldering
- Pave aprons (entrance areas) to designated routes, campgrounds, and overlooks.
- Remove unnecessary guardrail / upgrade other guardrail
- Miscellaneous culvert cleanings / extensions
- Rehabilitate ditches along roadway as needed to clear debris and fix any damaged culverts
- Spot slope flattening
- Signing and striping

Segment 2 (Needles Overlook Road from "Y" intersection to US 191)

- Pulverize and compacting existing asphalt pavement and two-inch overlay with Asphalt Pavement (in lieu of patching, crack sealing, and chip sealing)
- All other work items from Segment 1

Segment 3 (Anticline Overlook Road)

- Rebuild "Y" intersection to a traditional "T" intersection
- Add parking area on west leg of intersection
- Recondition existing aggregate roadway
- Pave roadway and add safety edge.
- Add guardrail at two locations
- Miscellaneous culvert cleanings / extensions

- Replace overtopping culvert
- Pave aprons to designated routes, campgrounds, and overlooks.
- Pave and shoulder certain viewing area pullouts
- Widen and pave loop at Anticline Overlook and stripe for angle and Recreational Vehicle (RV) parking
- Signing and striping

Segment 1 Option X: (Needles Overlook Road)

- Pulverize and compacting existing asphalt pavement and two-inch overlay with Asphalt Pavement (in lieu of patching, crack sealing, and chip sealing)
- All other work items from Segment 1

2.2.3 Construction Phasing

Construction phases for the project would be dependent on acquisition of funding.

2.2.4 Roadway Improvements

The following section describes the various roadway improvements under Alternative 1 – The Proposed Action Alternative. These improvements include roadway resurfacing, intersection realignment, slope flattening, drainage improvements, signage installation, and construction staging.

Roadway Resurfacing

The existing roadway surface varies throughout the roadway alignment. Segments 1 and 2 consist of a two-lane roadway averaging 22 feet in width comprised of chip seal over asphalt pavement. Pavement conditions vary throughout these roadway segments. Segment 2 has areas that have a fair amount of asphalt cracking which requires repair. For disturbance calculations, no buffer areas beyond the road surface were included.

Segment 3, the entire length of Anticline Overlook Road, is a two-lane roadway averaging 23 feet wide with an aggregate surface in fair condition. There are several viewing areas along this segment comprised of widened roadway sections (pullouts) varying from 37 to 40 feet wide for several hundred feet each. For disturbance calculations, a 25 foot buffer from the existing edge of roadway was assumed as temporary disturbance to accommodate construction equipment and personnel during paving activities on this segment.

Segment 1 would be resurfaced by crack sealing to repair cracks along the roadway and then chip sealing the roadway. If funding allows, the contractor would also be able to bid on an option where Segment 1 would be resurfaced by pulverizing and compacting the existing pavement and them placing an asphalt overlay. Certain areas within the roadway alignment (including roadway surface and ditches) may require grading and excavation (reconditioning) prior to the placement of pavement.

Segment 2 and the entrance area near US 191 would be resurfaced by pulverizing and compacting the existing pavement and then placing an asphalt overlay. Certain areas within the roadway alignment (including roadway surface and ditches) may require grading and excavation (reconditioning) prior to the placement of pavement.

In addition to the resurfacing of Segments 1 and 2, Segment 3, the existing surface on the Anticline Overlook Road segment would be reconditioned and paved with asphalt, including a safety edge. Shouldering would be installed after resurfacing.

The resurfacing and paving would be completed within the existing roadway ROW, which includes the roadway surface and the adjacent ditch/shoulder areas. The Anticline and Needles Overlook roadways would not be widened.

Y Intersection Realignment

The "Y" intersection where the Anticline Overlook Road meets the Needles Overlook Road would be eliminated and replaced with a "T" intersection. The main traffic pattern would change to a north/south direction along Needles Overlook Road onto Anticline Overlook Road (consistent with existing roadway geometry). Needles Overlook Road to Needles Overlook segment would become the minor traffic movement and a stop sign would be installed at the newly aligned "tee" intersection for eastbound traffic. The intersection is located at the approximate center of the existing triangle and provides adequate intersection sight distance. A parking area of approximately 20 spaces would be added along the south side of the west leg of the intersection at the request of BLM staff. This parking area would mainly occupy existing disturbed area from the existing Y-intersection configuration.

Slope Flattening

Several areas along the road segments have steep slopes off the shoulder of the road. To improve safety in several of the steeper areas, the slopes would be flattened by placing fill adjacent to the road to reduce the slope steepness off the shoulder. This would require placement of the material and grading the material. A 25-foot buffer area was included as potential temporary disturbance in areas where slope flattening would occur because additional temporary disturbance may be needed around the construction area.

Drainage Improvements

Drainage improvements would be completed along each of the segments. These improvements would occur as needed (approximately 45 to 50 culverts) and would include cleaning, extending; and vegetation removal from roadside ditches. Minor grading would be completed along the roadway to improve drainage. In addition, one culvert on Segment 3 which has known overtopping issues would be replaced with two culverts. Channel geometry would be improved by grading on the upstream end of the culvert. A 25-foot buffer was included as temporary disturbance in areas where culverts would be replaced or extended because additional temporary disturbance may be needed around the construction area.

Signage Installation

Signs adjacent to each roadway segment would be replaced to provide for retro-reflectivity meeting current standards. Also, new signs would be installed within the Project Area to alert motorists to approaching hazards (i.e. cattle and wildlife crossing areas) and roadway conditions (i.e. roadway curves and speed limits). New signs would be installed at select culvert locations and at the Y intersection. Replacement of existing signs and the installation of new signs would be completed outside the roadway surface, but within the existing ROW.

Construction Staging
During construction, equipment and material staging would be located in designated areas along the roadway (**Table 2.1**). Staging would also be permitted at existing vehicle pull-out locations within the Project Area. Typical heavy equipment used in roadway construction would be used for this project and would be temporarily parked at each staging area. Heavy equipment may include graders, front-end loaders, backhoes, dump trucks, pneumatic rollers, water trucks, and paving equipment.

Table 2.1. Staging Areas

Area Name	Description
Viewing Pullouts	Various small view area pullouts along Anticline Overlook Road. Also one larger site along Anticline Overlook Road near Minor Overlook
Megadon Drill Site	Abandoned drill pad south of Anticline Overlook west of Anticline Overlook Road
Y intersection	Stage in existing disturbed area after reconstruction
Aggregate Stockpile Area	Approximately 7.2 miles from the entrance of Canyon Rims Road in a previously disturbed area along Needles Overlook Road

During construction of the roadway improvements, traffic may be restricted to a single lane in active construction areas along segments 1 and 3 to ensure continued access to the overlooks. Road segment 2 may be closed during construction with Looking Glass Road providing a detour to access to the overlooks. The BLM and FHWA-CFLHD would coordinate the construction periods with the Contracting Officer and local cattle ranchers. In addition, a communication strategy would be developed by BLM to notify all affected entities of construction dates and roadway closures. These entities include, but are not limited to Special Recreation Permit holders, livestock allotment permit holders, hunters, the local fire department, and the utility companies.

Utah Department of Transportation (UDOT) typically only allows paving from April 15th to October 15th. At least one large hot mix asphalt plant stays open through November, but construction outside of these dates may make it difficult for the contractor to procure materials.

Highest traffic volumes occur during April and May and during September and October with steady traffic during summer months. There is minimal traffic from November through February. The BLM MFO does not see any need to place seasonal restrictions on the contractor based on traffic. No night time work would be conducted.

2.2.5 Applicant Committed Environmental Protection Measures

The following environmental protection measures are incorporated into the Proposed Action Alternative to reduce or eliminate impacts to resources within the Project Area.

2.2.5.1 General Measures

- Speed limits would be posted and enforced to minimize the potential for collisions between wildlife and vehicles.

- Temporary disturbance areas would be seeded at the appropriate time of year following construction with a BLM approved seed mix
- Appropriate Best Management Practices (BMPs) would be used to control sediment and stormwater runoff from the disturbed areas.
- Surface disturbance would be kept to the minimum required to install structures associated with the proposed project. Surface disturbance on side slopes on the edge of roadway would be avoided where possible.

2.2.5.2 Cultural Resources

- Design changes were implemented around site 42SA31564 such as elimination of temporary disturbance from slope flattening to the east to reduce disturbance. Permanent disturbance from fill material for slope flattening would still occur in the parcel but fill would not cover any site loci.
- Site boundaries adjacent to work areas would be fenced for protection.
- All activities in the staging area within the 42SA31566 site boundary would occur on previously disturbed areas.

2.2.5.3 Livestock Grazing

- If livestock information and warning signs are removed during the project construction they would be installed to the exact locations they were removed from and using the same materials they were originally installed with.
- Cattle guards removed for project construction would be re-installed at the same locations.

2.2.5.4 Migratory Birds

- If vegetation removal occurs during the migratory bird nesting season (April 1 to July 31) or raptor nesting season (March 1 to August 31), a preconstruction nest survey would be conducted by a qualified biologist in all suitable habitat that would be disturbed. If active bird nests are identified within the project limits, construction activities would avoid disturbing any active nest. The qualified biologist would determine the appropriate avoidance strategy until the nestlings have fledged from the nest and the nest is no longer active.

2.2.5.5 Recreation

- At least one lane of traffic shall remain open during construction with a maximum 30-minute delay. If any delay longer than 30 minutes is anticipated to accomplish a specific construction activity, then notice shall be provided to the public, relevant partner agencies, and emergency service providers.

2.2.5.6 Threatened, Endangered, or Candidate Animal Species

- Construction shall occur during daylight hours (½ hour after sunrise to ½ hour before sunset).

- Stumps and trunks of trees cut would be left in the area of the project to provide ground litter and woody debris.
- Prior to project construction:
    - Mexican spotted owl (*Strix occidentalis lucida*) (MSO) protocol-level surveys will occur in the Lockhart Rim survey area.
    - Suitable nesting habitat outside the Lockhart Rim survey area, but within 0.5 mile of the project, will be identified.
    - MSO protocol level surveys will occur in suitable nesting habitat located outside the Lockhart Rim survey area.
- Temporary or permanent construction activity (including rehabilitation of temporary disturbances) would not occur from March 1 to August 31, within 0.5 miles of occupied suitable nesting habitat.
- Within six months of project completion, but outside the breeding season for MSO (March 1 – August 31), all areas of temporary disturbance will be rehabilitated to pre-project conditions, to be verified by the BLM. FHWA will develop success criteria specific to invasive weeds and will provide documentation that those success criteria have been met for 3 years.
- Limit disturbances to and within suitable habitat by staying on designated and/or approved routes.
- Limit new access routes created by the project.

2.2.5.7 Utah BLM Sensitive Species

- If construction occurs during burrowing owl nesting season (March 1 to August 31), surveys would be conducted in habitat areas for active and potential burrow nest locations.
- If active burrowing owl burrows are located, a qualified biologist would determine the appropriate no-work buffer around the burrows to reduce or eliminate impacts to the burrowing owl.
- If construction occurs during kit fox breeding and pup-rearing season (December 15 to August 14), preconstruction surveys would be conducted in habitat areas within the Project Area for active and potential den locations.
- If active kit fox dens are located, a qualified biologist would determine the appropriate no-work buffer around the burrows to reduce or eliminate impacts to the species.

2.2.5.8 Wildlife Species (Excluding USFW Designated Species)

- Signage for pronghorn crossing would be placed along the roadway to caution drivers of the potential for pronghorn in the area.

2.2.5.9 Visual Resources

- Surface disturbance should be kept to the minimum required to install structures associated with the proposed project. Surface disturbance on side slopes on the edge of roadway should be avoided where possible.

2.3 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, the proposed roads improvements would not occur and road conditions for public access to the Canyon Rims SRMA would continue to deteriorate from additional traffic use and weathering. Existing maintenance practices would continue resulting in increased maintenance costs, continued safety concerns, and poor drainage.

3 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the Project Area as identified in the Interdisciplinary Team Checklist found in **Appendix C**. This chapter provides the baseline for comparison of impacts/consequences described in **Chapter 4**. Environmental resources that are not present or were determined to be present but would not be affected by the Proposed Action Alternative were not carried forward for further analysis.

Baseline survey areas differed for resources due to the nature of the resources. For stationary resources, including sensitive plants, cultural resources, and waters of the U.S., the survey areas were limited to the temporary and permanent impact areas (**Figure 2 in Appendix A**). The entire roadway was not evaluated for the aforementioned resources because disturbance would not occur along the entire road way. Baseline surveys for mobile resources, including wildlife, were conducted along the entire defined Project Area above (**Figure 1 in Appendix A**). This was decided because resources could have moved in and out of the defined direct temporary and permanent impact areas while surveys were being conducted and therefore needed to be documented anywhere seen near the project. Although the entire roadways were surveyed, disturbance still would not occur along the entire road way.

3.2 GENERAL SETTING

The project roadways proposed for surface improvements are located within the Canyon Rims SRMA west of U.S. Highway 191, approximately 32 miles south of Moab, Utah. The Canyon Rims SRMA receives about 85,000 visits per year ((BLM, 2015a). Visitors access the area via U.S. Highway 191 by vehicles, motorcycles, off highway vehicles (OHVs), and the occasional road bike. Two well-known viewing areas (Needles Overlook and Anticline Overlook) are located within the Canyon Rims SRMA and provide long-range views of the Colorado River and Canyonlands National Park, as well as opportunities for distant views of mountains, canyons, basins and rock formations, and wide open spaces.

The area is characterized by rolling hills with sandy soils, rock outcroppings, and sparse desert shrub vegetation punctuated by the Hatch Wash and Harts Draw canyon systems. Historical uses in the area include livestock grazing, mineral exploration, and recreation. The proposed Project Area traverses three grazing allotments.

3.3 RESOURCES/ISSUES BROUGHT FORWARD FOR ANALYSIS

The following resources are brought forward for analysis in this EA.

3.3.1 Cultural Resources

Section 54 U.S.C. 306108 of the National Historic Preservation Act of 1966 (as amended) (NHPA), formerly known as Section 106, requires federal agencies to take into account the effects of their undertaking on historic properties. The FHWA-CFLHD would refer to 54 U.S.C. 306108 as Section 106 throughout this document. The Section 106 process is

outlined in "Protection of Historic Properties" (36 CFR Part 800). Historic properties include architectural structures, prehistoric or historic archeological resources or districts, sacred sites, and traditional cultural properties that are listed on, or are eligible for listing on, the National Register of Historic Places (NRHP).

The Needles Overlook Road was constructed in the early 1960s and the Anticline Overlook Road was constructed between 1969 and 1971. There is no evidence that a cultural resource survey was conducted during that time period. Based on the literature review, the first identified survey in the area was conducted in 2009. The 2009 survey report indicated 17 sites were identified in the immediate vicinity of the Canyon Rims Project Area. These 17 sites included ten prehistoric sites, one prehistoric/historic site, two historic sites, and four unknown cultural affiliation sites.

A Class III Cultural Resources Survey was conducted in May, June and November, 2015, within the Area of Potential Effects (APE). Although the APE was defined as the entire length of the Needles Overlook Road and Anticline Overlook Road, the cultural resources survey area was limited to project areas outside the road prism that would be disturbed during construction activity associated with the proposal project. This included a number of isolated parcels along the Needles Overlook Road and the entire length of the Anticline Overlook Road. A total of 20 archaeological sites and 57 isolated occurrences were identified during the field survey including 17 previously unrecorded sites, and three previously recorded sites. Two of the previously recorded sites were re-recorded and one of the previously recorded sites was re-inspected.

The 20 archaeological sites identified consisted of the following:

- Six simple scatters of lithic materials with no subsurface deposits;
- One lithic scatter with some historic artifacts;
- One lithic scatter with historic artifacts;
- Three lithic quarry sites;
- One lithic quarry site with some historic artifacts;
- A road segment; and
- Seven lithic scatter sites with subsurface deposits in the form of hearths or buried artifacts.

Of the 20 archaeological sites, the two previously recorded sites that were re-recorded and ten newly recorded sites have been recommended for inclusion to the NRHP. On September 13, 2016 the FHWA-CFLHD sent a letter to the Utah SHPO requesting review the Class III Cultural Resources Survey and concurrence on determinations of effect and eligibility. For additional information a complete record of agency correspondence is provided in **Appendix D.**

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3.3.2 Livestock Grazing

Canyon Rims SRMA is used for livestock grazing during the winter and spring months, when visitation to the recreation area is relatively low. The proposed surface roadway improvements would traverse portions of three grazing allotments within Canyon Rims SRMA: Hatch Point, Windwhistle, and Mail Station.

Approximately 90 percent of the Hatch Point Allotment is within the Canyon Rims SRMA planning area: 1,164 animal unit months (AUMs) are allowed in the allotment from October 15 to June 15 ((BLM, 2008). An additional 11,281 AUMs are allowed on the allotment from October 15 to June 31. The livestock grazing system for the allotment is deferred rotation. Deferred rotation is a grazing practice that systematically rotates the livestock among pastures; it also restricts grazing on an area for a period of time to provide for plant reproduction, establishment of new plants, or the restoration of existing plants (Lacey and Poollen 1997). This allotment covers the northwest portion of the roadway alignment (Segment 1 – Needles Overlook Road and Segment 3 - Anticline Overlook Road). There are a total of 117,504 acres within the allotment (BLM, 2008). Of the 117,504 acres, 97,947 acres occur on BLM or other federally managed land (83.4 percent), 13,167 acres occur on state land (11.2 percent), and 6,390 acres occur on private land (5.4 percent). The allotment is operated by La Sal Livestock LTD based in La Sal, Utah (BLM, 2015b). Livestock infrastructure near the roadway alignment, such as troughs, cattle guards, fencing, and corrals used to maintain grazing distribution within this allotment is limited to two cattle guards near the entrance.

The Windwhistle Allotment is entirely within the SRMA planning area; 167 AUMs are allowed from November 1 to February 28 ((BLM, 2008). The livestock grazing system for the allotment is season-long. Season long grazing, also known as continuous grazing, involves grazing an area for the entire growing season (e.g. November 1 to February 28) (Lacey et al 1979). This allotment covers the southwest portion of the roadway alignment (Segment 2). There are 6,291 acres within the allotment (BLM, 2008). Of the 6,291 acres, 5,443 occur on BLM land (87 percent) and 848 acres occur on state land (13 percent). The allotment is operated by Redd-Agri, L.C. out of La Sal, Utah (BLM, 2015b). The livestock infrastructure within this allotment that occurs near the roadway alignment is limited to fencing and a 24-foot wide cattle guard crossing near Windwhistle Campground (CFLHD, 2014). The Mail Station Allotment is located at the beginning of Needles Overlook Road near the eastern portion of the roadway alignment (Segment 2).

The Mail Station Allotment occurs within the Monticello Field Office (MtFO) planning area. This allotment has 1,340 AUMs from November 1 to April 30 (BLM, 2007). The livestock grazing system for the allotment is deferred rotation. There are 7,891 acres within the allotment (BLM, 2007). Of the 7,891 acres, 6,499 acres occur on BLM land (82 percent), 1,257 acres occur on state land (16 percent), and 135 acres occur on private land (2 percent). The allotment is operated by Bruce Adams out of Monticello, Utah. The livestock infrastructure within this allotment that occurs near the roadway alignment consists of a 24-foot wide cattle guard near the entrance, approximately 200 feet from the intersection of U.S. Highway 191 and Needles Overlook Road. **Table 3.1** summarizes the three allotment permit conditions and land uses that occur within the Project Area.

Table 3.1. Grazing Allotment Conditions near the Project

Allotment Name	Hatch Point	Windwhistle	Mail Station
Allotment Number	05389	05860	04819
Allotment Status	Permitted	Permitted	Permitted
Kinds of Permitted Livestock	Cattle	Cattle	Cattle
Season of Use	10/15 – 6/15 11/15 – 5/31	11/1 – 2/28	11/1 – 4/30
Animal Unit Months (AUMs)			
Active (Cattle)	11,281	631	1,340
Active (Horses)			
Suspended	5,654	206	
Exchange of Use	6,781	20	
Livestock Grazing System	Deferred Rotation	Season-long	Deferred Rotation
Total Acres within Allotment	117,504	6,291	7,891
BLM	96,951	5,443	6,449
State of Utah	13,167	848	1,257
Private	6,390	0	135
Federal	996	35	0
Total AUMs in Combined Allotments			13,252

Source: (BLM, 2007) ((BLM, 2008)

Figure 3 in Appendix A shows the proposed surface roadway improvement alignment in relation to the three livestock grazing allotments.

3.3.3 Migratory Birds

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC §703 et seq.) regulates and limits the taking of migratory birds, their nests, eggs, parts, or products without the appropriate permit, and provides enforcement authority and penalties for violations. In addition to the MBTA, the 1988 amendment to the Fish and Wildlife Conservation Act (16 USC 2901-2911) mandates the USFWS to "identify species, subspecies and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." In 2001, EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, was issued to focus attention of federal agencies on the environmental effects to migratory bird species and, where feasible, implement policies and programs which support the conservation and protection of migratory birds. The USFWS's List of Birds of Conservation Concern (2008) (BCC) is the most recent effort to carry out this Congressional mandate (USFWS 2008b). The BLM and USFWS also have a Memorandum of Understanding (MOU) that encourages collaboration between the two agencies and increased conservation of migratory birds.

This Memorandum of Understanding (MOU) between the BLM and USFWS (BLM MOU WO-230-2010-04) provides direction for the management of migratory birds to promote their conservation. At the project level, the MOU direction includes evaluating the effects of the BLM's actions on migratory birds during the NEPA process, identify potential measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. In such situations, the BLM would implement approaches to lessen such take. Identifying species of concern, priority habitats, and key risk factors includes identifying species listed on the USFWS BCC that are most likely to be present in the Project Area and evaluating and considering management objectives and recommendations for migratory birds resulting from comprehensive planning efforts, such Utah Partners in Flight American Landbird Conservation Plan. The Utah Partners in Flight (UPIF) Working Group completed a statewide avian conservation strategy identifying "priority species" for conservation due to declining abundance distribution, or vulnerability to various local and/or range-wide risk factors. One application of the strategy and priority list is to give these birds specific consideration when analyzing effects of proposed management actions and to implement recommended conservation measures where appropriate.

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 (Public Law [PL] 87-884; 16 US Code [USC] §668a-d) prohibits the taking or harming (i.e., harassment, sale, or transportation) of bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*), including their eggs, nests, or young, without the appropriate permit (USFWS 2015e). BGEPA, initially protected only bald eagles but was amended in 1962 to include the golden eagle because of its dwindling populations and similar appearance to bald eagles when both eagles are young. The act prohibits anyone from "taking" eagles, including their parts, nests, or eggs without a permit issued by the Secretary of the Interior. A taking also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

The proposed surface roadway improvements would traverse portions of habitats found within the Canyon Rims SRMA. This section evaluates the potential of migratory bird species to occur in the Canyon Rims SRMA and ultimately in the Project Area. Habitat for migratory birds and incidental species were documented in the field from May 18 to 21, 2015. Identifying migratory birds species with potential to occur and where habitat exists would allow the planning and design staff at FHWA-CFLHD to avoid and minimize impacts to species during the project design process.

Numerous migratory bird species could be found within the Canyon Rims SRMA. Habitat available for migratory bird species in the Canyon Rims SRMA includes pinyon-juniper forests, grasslands, sagebrush shrublands, and salt desert scrubland. Migratory birds with potential to occur in or near the Project Area may be found in any of these habitats and may utilize features for nesting, perching, roosting, and foraging. Within the Project Area, these vegetative communities are minimal and habitat is of low quality due to location on

or proximity to the current road system, past and active surface disturbances, and vehicle and human activity.

The UPIF Priority Species List, the BCC list for Region 16 (Colorado Plateau), and the Utah Conservation Data Center database (UDWR 2016) were used to identify priority species that could utilize habitats with the Canyon Rims SRMA and the Project Area. Region 16 Southern Rockies/Colorado Plateau BCC (USFWS 2008b) and any BCC and UPIF (Parrish et al., 2002), with potential to occur within the Canyon Rims SRMA and the Project Area are listed in **Table 3.2. Migratory Birds of Concern with Habitat in the Canyon** Rims SRMA

Table 3.2. Migratory Birds of Concern with Habitat in the Canyon Rims SRMA

Scientific Name	Common Name	Status	
		UPIF	Region 16 BCC
Artemisiospiza nevadensis	**Sagebrush Sparrow**	✓	
Athene cunicularia	Burrowing owl		✓
Aquila chrysaetos	**Golden eagle**		✓
Baeolophus ridgwayi	Juniper titmouse		✓
Calcarius ornatus	Chestnut-collared longspur		✓
Falco mexicanus	Prairie falcon		✓
Falco peregrines	**Peregrine falcon**		✓
Gymnorhinus cyanocephalus	**Pinyon jay**		✓
Haliaeetus leucocephalus	Bald eagle		✓
Leiothlypis virginiae	Virginia's Warbler	✓	
Leucosticte atrata	Black rosy-finch		✓
Numenius americanus	Long-billed curlew		✓
Setophaga graciae	Grace's warbler		✓
Setophaga nigrescens	**Black-throated Gray Warbler**	✓	
Spizella breweri	**Brewer's sparrow**		✓
Vireo vicinior	**Gray vireo**		✓
Bold Species seen in or near the Project Area. *Source: UDWR 2016*			

Forty migratory bird species were documented during baseline surveys (see **Table E.1.** Wildlife species documented during baseline field surveys. Several birds displayed nesting and breeding behaviors near the Project Area. Lark sparrow (*Chondestes grammacus)*, black-throated sparrow (*Amphispiza bilineata)*, Brewer's sparrow (*Spizella breweri)*, and horned lark (*Eremophila alpestris)*, displayed nesting behavior. Two lark sparrow nests were found close to the Project Area on the ground, but did not overlap with areas of construction.

3.3.3.1 Raptors

Habitats within the Canyon Rims SRMA and in the vicinity of the Project Area have the potential to support breeding, nesting, and foraging raptors, golden eagles, and wintering bald eagles. Raptor nest sites are typically located on promontory points such as cliff faces and rock outcrops in areas with slopes of 30 percent or greater, but they may also

nest in pinyons, juniper, or deciduous trees. Raptors typically use the same nest site year after year. Raptor young tend to disperse to areas near the traditional nest sites. The Canyon Rims SRMA also offers suitable wintering and migration habitats for several raptor species. The nesting season for most raptors in the Canyon Rims SRMA extends from March 1 to August 31. The USFWS has issued guidelines for the protection of raptors that include species-specific timing limitations and spatial offsets to active nests (Romin and Muck, 2002). These guidelines have been incorporated into the 2008 BLM RMP. Raptor species with the potential to occur in the vicinity of the Project Area are identified in **Table 3.3.** Raptor Species with the Potential to Occur in the Project Area and Related USFWS Spatial and Seasonal Buffers with a description of their nesting and foraging habitats and recommended spatial and seasonal buffers.

A juvenile golden eagle (*Aquila chrysaetos)* was observed on the ground near the Project Area, indicating a nest could be present nearby (**Figure 4, Appendix A**.). Baseline surveys were conducted in May and the golden eagle seen could have been a juvenile still being cared for by adults nearby, but had fledged. A juvenile red-tailed hawk was heard calling from a stationary location and two adult red-tailed hawks were seen circling overhead, indicating a nest with young were present nearby. However, the nest was likely located on a rock formation out of view from the survey team (**Figure 4, Appendix A**.).

Table 3.3. Raptor Species with the Potential to Occur in the Project Area and Related USFWS Spatial and Seasonal Buffers

Common Name	Scientific Name	General Habitat and Potential to Occur in Project Area	Spatial Buffer 1 (miles)	Seasonal Buffer 1
American kestrel	*Falco sparverius*	Moderate potential to nest on cliffs, and ledges. Moderate potential to forage from cliffs and ledges and low potential in desert shrub and pinyon-juniper woodland.	0	4/1-8/15
Bald eagle	*Haliaeetus leucocephalus*	Winter habitat typically includes areas of open water, adequate food sources, and sufficient diurnal perches and night roosts. Low. No potential for nesting and low potential for roosting.	0.5	1/1/-8/31
Burrowing owl	*Athene cunicularia*	Moderate potential to nest in the Project Area if prairie dog colonies are present. Commonly utilizes prairie dog burrows for nesting.	0.25	3/1-8/31
Cooper's hawk	*Accipiter cooperii*	Low potential to nest in pinyon-juniper woodlands. Moderate potential to forage in pinyon-juniper woodlands.	0.5	3/15-8/31
Golden eagle	*Aquila chrysaetos*	Commonly nests on cliff ledges and rock outcrops. Moderate potential to forage in desert shrub and pinyon-juniper woodlands.	0.5	1/1-8/31
Great-horned owl	*Bubo virginianus*	Nests on cliff ledges, pinyon-juniper, or nests of other species. Moderate potential to forage in desert shrub and pinyon-juniper woodlands.	0.25	12/1-9/31
Long-eared owl	*Asio otus*	Low potential to nest in pinyon-juniper woodlands. Moderate potential to forage in desert shrub and pinyon-juniper woodlands.	0.25	2/1-8/15

Common Name	Scientific Name	General Habitat and Potential to Occur in Project Area	Spatial Buffer 1 (miles)	Seasonal Buffer 1
Mexican spotted owl	*Strix occidentalis lucida*	High potential to nest on cliffs. Moderate potential to forage from cliffs and ledges and low potential in pinyon-juniper woodland	0.5	3/1-8/31
Northern harrier	*Circus cyaneus*	Moderate potential to forage and nest in sagebrush/grassland vegetative community and desert scrublands. Low potential to nest in pinyon-juniper woodlands. Utilizes open habitats such as marshes, fields, and grasslands.	0.5	4/1-8/15
Peregrine falcon	*Falco peregrinus*	High potential to nest on cliffs and ledges. Nest sites in southern Utah are associated with pinyon-juniper and deciduous riparian woodlands.	1.0	2/1-8/31
Prairie falcon	*Falco mexicanus*	High potential to nest on cliffs and ledges. Moderate potential to forage in desert shrub, moderate in pinyon-juniper woodland.	0.25	4/1-8/31
Red-tailed hawk	*Buteo jamaicensis*	Moderate potential to nest on cliffs and low potential to nest in pinyon-juniper woodlands. High potential to forage in desert shrub and pinyon-juniper woodlands.	0.5	3/15-8/15
Sharp-shinned hawk	*Accipiter striatus*	Low potential to nest in pinyon-juniper woodlands. Low potential to forage in desert shrub and pinyon-juniper woodlands.	0.5	3/15-8/31
Swainson's hawk	*Buteo swainsoni*	Not likely to nest in the Project Area. Low potential to forage in desert shrub and pinyon-juniper woodlands.	0.5	3/1-8/31
Source: (Romin and Muck, 2002)				

3.3.4 Recreation

Recreation use in the vicinity of the proposed surface roadway improvements in the Canyon Rims SRMA is moderate to high, with over 85,000 visit per year (BLM, 2015a). The majority of the land managed by the BLM MFO within Canyon Rims SRMA and surrounding the recreation area is considered a world-famous recreation destination, and recreation-based activities such as nature viewing, backcountry tours, photography, sightseeing, hiking, and mountain biking occur throughout the MFO planning area.

Designated Recreation Areas

There are two types of designated recreation areas within the greater MFO planning area: Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs). SRMAs are specific areas set aside for recreation management; they are also managed for intensive recreation use. Specifically, SRMAs are areas where significant public recreation management occurs, and where special and intensive recreation management is required. SRMAs can host a large number of annual visitors; however, the areas within the MFO planning area are not typically the areas that receive the greatest visitation given the area also attracts visitors to Arches National Park, Canyonlands National Park, and Sand Flats Recreation Area (SFRA). ERMAs encompass all the other lands within the MFO planning area that are not designated a SRMA.

Canyon Rims SRMA

Canyon Rims SRMA was established in the 1980s on 101,531 acres of public land south of Moab, Utah (BLM, 2002). The SRMA is managed under the *2002 Canyon Rims Recreation Area Management Plan* (RAMP) (BLM, 2002). The decisions in this plan were reconfirmed in the 2008 Moab RMP.

The overall recreation management objective of the Canyon Rims SRMA is to "protect, manage, and improve the natural resources of the area while allowing for responsible recreation" (BLM, 2008), (BLM, 2002). The goal is to manage the area for camping and vehicle touring on the primary roadway system and touring the secondary roadway system by mountain and road bicycles, and hiking and backpacking the canyons (BLM, 2002).

Developed Recreation Facilities

Canyon Rims SRMA contains a primary access roadway that provides access to nine developed recreation facilities. The main access roadways totals approximately 37.7 miles and are comprised of 22 miles of Needles Overlook Road (paved) and 15.7 miles of Anticline Overlook Road (unpaved). The nine recreation facilities include one entrance station, two fee campgrounds, four scenic overlooks, and two trails/trailheads. Each recreation facility is summarized below:

- **Entrance Station.** The entrance station consists of a covered, two-sided information kiosk located on the north side of Needles Overlook Road, approximately 900 feet past the Needles Overlook Road and U.S. Highway 191 intersection.
- **Windwhistle Campground.** This campground contains 15 campsites. The Windwhistle campground is located closest to the entrance station. The fee campground is fenced and contains fire grills, picnic tables, and three vault toilets; it also contains one water well and pump house to supply the campground with water through a gravity-feed system (BLM, 2015c).
- **Hatch Point Campground.** Hatch Point campground contains 10 campsites. The Hatch Point campground is located in the northwest portion of the Canyon Rims SRMA. The fee campground is also fenced and contains fire grills, picnic tables, and a single vault toilet.
- **Needles Overlook.** Needles Overlook is located 22 miles from U.S. Highway 191; the overlook contains two parking areas, a double vault toilet, walk-in picnic area, interpretive kiosk, and a series of walking paths.
- **Canyonlands Overlook.** Canyonlands Overlook is located at the end of a four-wheel drive road six miles from Anticline Overlook Road. It contains a single vault toilet.
- **Minor Overlook.** Minor Overlook is connected to Anticline Overlook Road by a short graveled loop road. Besides a protective road barrier near the plateau cliff, there are no other facilities at this location.
- **Anticline Overlook.** Anticline Overlook is located 32 miles from U.S. Highway 191; approximately 16 of those miles include the gravel portion of Anticline

Overlook Road. The overlook has a single vault toilet, picnic tables, fire grills at a walk-in picnic site, and a walking path that leads to an interpretive display.

- **Windwhistle Nature Trail.** Windwhistle Nature Trail is a one-half mile long trail located near the group site at Windwhistle Campground (BLM, 2015c).
- **Trough Springs Trail.** Trough Springs Trail is a former cattle trail that has been converted to a 2.5 mile hiking and horseback trail. It connects the plateau to Kane Creek Canyon (BLM, 2015c).

Popular activities within the SRMA, in addition to use of the facilities described above include: hiking, backpacking, driving on backcountry roads, biking, and sightseeing. Both of the entrance roadways within Canyon Rims SRMA were constructed by the BLM and include several scenic turnouts; the roadways are also designated Utah Scenic Backways (UAC, 2015).

Visitation and Recreation Use

The Canyon Rims SRMA experiences moderate visitation and recreation use. The SRMA also provides unique driving experiences and visitation that varies with seasons. Historical use for the area has reached or exceeded 85,000 visitors annually (BLM, 2015a). Annual increases of approximately 3.1 percent are estimated based on years of historical data (BLM, 2016). Historic recreation survey data used to prepare the *2002 Canyon Rims RAMP* recorded 32,296 vehicles at the SRMA between December 17, 2001 and August 3, 2002 – an approximate 8-month period. At three occupants per vehicle, this resulted in an estimated visitor count of 96,888 visitors (BLM, 2002). More recent traffic counter data indicates an estimated 85,000 visitors in 2015 (BLM, 2015a). The most recent data from the BLM on visitation to the Canyon Rims SRMA is provided in **Table 3.4.** Visits and Visitor Days by RMA (1 Oct 2015 – 30 Sep 2016). Canyon Rims SRMA also attracts mountain bikers and road cyclists; however, there is no existing data on annual cyclist use.

Table 3.4. Visits and Visitor Days by RMA (1 Oct 2015 – 30 Sep 2016)

Site	Primary Site Type	Visits	Visitor Days
Anticline Overlook	Scenic Overlook	2,452	460
Canyon Rims Entrance Station	Other	unknown	unknown
Canyonlands Overlook	Other	unknown	0unknown
Dispersed – Canyon Rims (North)	Dispersed Use	60,244	12,035
Hatch Point Campground	Campground	790	757
Minor Overlook	Scenic Overlook	unknown	unknown
Needles Overlook	Scenic Overlook	25,600	2,720
Windwhistle Campground	Campground	4,658	4,464
Total		93,744	20,436

Most visitors to the area camp at one of the two developed fee campgrounds and visit one or more of the four developed overlooks by car. The Hatch Point Campground along the gravel Anticline Overlook Road receives approximately 17 percent of the use that the Windwhistle Campground (paved road access) receives. In addition, the Anticline Overlook, accessible by a gravel road only, receives approximately 10 percent of the visitation that the Needles Overlook. The lower use of the Anticline Overlook and the Hatch Point Campground is undoubtedly due to gravel road access and the considerable distance from the main highway. In addition, higher use of the Windwhistle Campground is likely a result of a more scenic setting, the provision of running water, and provides quicker access to Highway 191. Dispersed camping also occurs occasionally throughout the recreation area.

A smaller number of visitors enjoy a semi-primitive motorized experience by touring the backcountry in four-wheel drive, or OHVs and occasionally by mountain bike. Backcountry vehicle touring occurs on an extensive system of unpaved routes originally created by the oil and gas and livestock industries (BLM, 2002). While road cyclists are known to access the SRMA, there are no designated bike lanes within the area, and biking is currently limited, as the Anticline Overlook Road remains unpaved and the Needles Overlook Road contains a narrow shoulder, which presents a safety hazard to cyclists. Hiking occurs on two developed hiking trails: the Windwhistle Nature Trail and the Trough Springs Hiking Trail. The Hatch Wash Canyon system to the north of the SRMA is accessed by hikers and backpackers seeking remote recreation experiences (BLM, 2002). The most popular recreation activity in the area is driving to one of the overlooks, enjoying wide open spaces, and observing the view of the Colorado River Canyon from the overlooks at the edge of the plateau (BLM, 2002).

3.3.5 Threatened, Endangered, or Candidate Animal Species

The Federal Endangered Species Act (ESA) of 1973 (ESA; 16 USC 1531 et seq.) requires that any action authorized by a federal agency does not jeopardize the continued existence of threatened or endangered species, or result in the destruction or adverse modification of their designated Critical Habitat (CH). If a project should affect an ESA-listed species or its habitat, interagency consultation is required under ESA Section 7 with the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service, as determined based on the listed species that may be affected.

This section evaluates the potential impacts to federally-listed species with potential to occur in the Project Area. Habitat for species was evaluated in the field from May 18 – 21, 2015. Identifying federally-listed species with potential to occur and where habitat exists would allow the planning and design staff at CFLHD to avoid and minimize impacts to species during the project design process. A Biological Assessment (BA) was submitted to the USFWS to obtain concurrence with determinations and recommendations for Section 7 informal consultation; USFWS concurred with the determinations on February 13, 2017. More detailed information about species analyzed can be found in the Biological Assessment (**Appendix D**).

Data from USFWS Information, Planning, and Conservation System (IPAC) was reviewed to identify special-status species that occur, or have the potential to occur, in the

vicinity of the Project Area (USFWS 2015a). A table of all ESA threatened, endangered, candidate and proposed species potentially occurring in the Project Area is provided (**Table 3.5.** Federally-listed species initially evaluated for the Project). Only one species, MSO, is predicted to occur within or near the Project Area and could be potentially impacted by activities. All other species are unlikely to be present due or impacted to an absence of habitat near or within the Project Area. Determinations of whether a species could occur was confirmed with the Moab BLM (BLM, 2015g).

Table 3.5. Federally-listed species initially evaluated for the Project

Scientific Name	Common Name	USFWS Status	Habitat	Potential to Impacted by the Project	Further Evaluated
Birds					
Centrocercus minimus	Gunnison sage-grouse	FT	Sagebrush and sagebrush/grassland habitats (UDWR 2015a). May also be found in healthy wetland and riparian areas. Two small areas with populations in eastern Utah, near Monticello (USFWS 2013a).	No; no habitat exists in the Project Area.	No
Coccyzus americanus	Yellow-billed cuckoo	FT	Dense lowland riparian characterized by a dense sub-canopy or shrub layer near water. Large of contiguous riparian nesting habitat (UDWR 2015a).	No; suitable habitat is not present.	No
Empidonax traillii extimus	Southwestern willow flycatcher	FE	Riparian habitats with dense willow. It is rare in southern Utah during the summer (UDWR 2015a).	No; suitable habitat is not present.	No
Gymnogyps californianus	California condor	P	Prefers cliffs and brushy areas within mountainous terrain. Often seen roosting on snags, tall open-branched trees, or cliffs (UDWR 2015a).	No; suitable habitat is not present.	No
Strix occidentalis lucida	Mexican spotted owl	FT	Mature montane forest and woodland, shady wooded canyons, and steep canyons, which is the primary habitat in Utah. Nests are found in live trees in natural platforms, snags, and on canyon walls (USFWS 2008a; UDWR 2015a).	Possible; canyon habitat is nearby and pinyon-juniper foraging habitat is present.	Yes
Fish					
Gila cypha	Humpback chub	FE	Confined to a few white-water areas in Colorado, Green, and White Rivers (UDWR 2015a).	No; river habitat is not present.	No
Gila elegans	Bonytail chub	FE	Eddies, pools, and backwaters near swift current in large rivers, mostly in the Colorado River system (UDWR 2015a).	No; river habitat is not present.	No
Oncorhynchus clarki stomias	Greenback cutthroat trout	FT	Clear, swift-flowing mountain streams with cover such as overhanging banks and vegetation (NatureServe 2014).	No; mountain stream habitat is not present.	No

Scientific Name	Common Name	USFWS Status	Habitat	Potential to Impacted by the Project	Further Evaluated
Ptychocheilus lucius	Colorado pikeminnow	FE	Medium to large rivers, ranging from deep turbid rapids to flooded lowlands (UDWR 2015a).	No; river habitat is not present.	No
Xyrauchen texanus	Razorback sucker	FE	Prefers slow backwater habitats and impoundments (UDWR 2015a).	No; impoundments and backwater habitat are not present.	No
Plants					
Carex specuicola	Navajo sedge	FT	Restricted to seep, spring, and hanging gardens of Navajo Sandstone (UDWR 2015b). Prefers moist, sandy to silty soils of shady seep-spring pockets or alcoves with somewhat limited soil development. 1740-1830 m elevation (5700-6000 feet) (NatureServe 2014).	No; seeps and springs are not present and project would not alter or impact aquifers that support any seeps or springs.	No
FT – Federally Threatened, FE – Federally Endangered, P – Proposed for Listing					

3.3.5.1 Mexican Spotted Owl

The MSO was federally listed as threatened under ESA in 1993. Its range spans western North America, from southern British Columbia to Mexico. In Utah, the species is found in southern and eastern parts of the State, on the Colorado Plateau (UDWR 2015b).

MSO can be found in various habitats, including canyon and forested highlands throughout the southwestern United States and northern Mexico. In Utah, the species primarily utilizes canyon and steep, rocky cliff sides as habitat (UDWR 2015b). MSO do not migrate out of breeding habitat during winter months. MSO typically do not migrate out of breeding habitat during winter months, but some have been documented moving up to 99 miles away from the breeding territory in winter months. Vertical movements in elevation may occur, in winter months as the birds tend to go to lower elevations. Further research is needed to gain a better understanding of MSO winter habits and movements (USFWS 2012b).

Foraging habitat includes more landscape variety than other habitats. MSO have been found to use unlogged forests, managed and unmanaged forests, pinyon-juniper woodlands, mixed-conifer and ponderosa pine forests, cliff faces, terraces between cliffs, and riparian areas for foraging (USFWS 2012b). MSO typically forage on small- to medium-sized rodents such as woodrats, deer mice, pocket gophers, and voles but may also consume other items such as bats, rabbits, birds, reptiles, and insects (USFWS 2012b; UDWR 2015b). Most studies indicate that generally, spotted owl species forage for nocturnal prey, which therefore indicates foraging activity occurs at night (Forsman et al. 2004). MSO foraging behavior during nesting season has been found to be concentrated during diurnal hours (Laymon 1991; Delaney et al. 1999a), with most foraging occurring one to three hours before sunrise and one to three hours after sunset (Delaney et al. 1999a).

Also, spotted owls have been found to forage opportunistically, if prey is seen during the day while nesting (Forsman et al. 2004).

MSO nest in naturally occurring cavities or crevices in trees or rocky areas, stick nests built by other birds, nests built by other animals, and debris platforms in trees (USFWS 2012b; UDWR 2015b). MSOs do not build their own nests (USFWS 2012b). MSO may nest in steep, rocky canyons, which is the habitat type found near the Project Area (USFWS 2012b). MSO begin courtship in March and lay eggs in March to early April. Incubation of eggs lasts approximately 30 days, and eggs typically hatch in early May. Owlets fledge the nest in early- to mid-June, four to five weeks following hatching, and disperse from the nest location by mid-September to early October (USFWS 2012b). More information about MSO life history is available in the project BA (**Appendix F**).

Baseline surveys conducted by biologists and consultation with the BLM confirmed the presence of foraging habitat in the Project Area (BLM, 2015g). Foraging habitat for MSO is present primarily along the western side of the Anticline Overlook Road and along the Needles Overlook Road from the Y-intersection westward. Foraging habitat consists of scattered Colorado Plateau pinyon-juniper woodlands and some pinyon-juniper shrubland areas. Rodent burrows and tracks were found throughout the pinyon-juniper woodlands and shrublands, indicating potential prey species are present within these habitat areas.

Nesting habitat for MSO was not identified within the Project Area during baseline field surveys, but within 0.5 mile of the Project Area, suitable foraging and nesting habitat is confirmed to be present by BLM biologists (BLM, 2015g). Nesting habitat is present below the rims, along steep canyon walls and cliff faces that are located approximately 90 to 95 feet from the Project Area in several locations. This nesting habitat is within the 0.5 mile buffer recommended by the USFWS for analysis, at both the Anticline and Needles Overlooks. Nesting and breeding surveys for MSO have regularly been conducted since 2003 in the Canyon Rims SRMA and have not found any nesting individuals. No active nests or individuals have been located within the 0.5 miles buffer recommended by the USFWS.

On August 31, 2004 the USFWS issued a final rule designating Critical Habitat for the MSO (69 FR 53182). Critical Habitat boundaries were expanded with the final rule. Within the Critical Habitat boundaries, Critical Habitat only includes protected or restricted habitat (USFWS 1995, 2012b). Critical Habitat is designated by identifying areas that offer specific elements, referred to as Primary Constituent Elements (PCEs), that provide physical and biological features necessary for the species' survival (USFWS 2012b). Critical habitat (CP-14) for MSO overlaps with areas of the project, but PCEs that define Critical Habitat were not found within the Project Area. This Critical Habitat was likely designated in this area due to the presence of canyon walls and the proximity of the Colorado River as a water source.

3.3.6 Utah BLM Sensitive Species

The list of BLM sensitive species was provided by the BLM Moab Field Office (BLM, 2015g), (BLM, 2015h). A list of species, their habitat descriptions, and a determination

of whether they could occur in or near the Project Area is provided in **Table 3.6.** BLM sensitive species initially evaluated for the Project Overall, a total of 23 species were evaluated, and seven species were determined to potentially occur or have habitat within or near the Project Area. Species with potential to occur or having habitat within or near the Project Area were carried forward for further analysis and include Gunnison's prairie dog (*Cynomys gunnisoni)*, kit fox (*Vulpes macrotis)*, burrowing owl (*Athene cunicularia)*, Isley milkvetch (*Astragalus iselyi)*, Canyonlands lomatium (*Lomatium latilobum)*, Entrada pinkrush (*Lygodesmia entrada)*, and Psoralea globemallow (*Sphaeralcea psoraloides)*. Only one species, Gunnison's prairie dog, was observed during baseline field surveys. The species with the potential to occur or be impacted by the Proposed Action Alternative are described in **Sections 3.3.6.1** to **3.3.6.7**.

Table 3.6. BLM sensitive species initially evaluated for the Project

Scientific Name	Common Name	Habitat	Potential to be Impacted by the Proposed Action	Further Evaluated
Mammals				
Corynorhinus townsendii	Townsend's big-eared bat	Prefers coniferous forests and woodlands, deciduous riparian woodland, semi-desert and montane shrublands (IUCN 2015).	Possible; habitat exists, but work would not affect habitat or behavior.	No
Cynomys gunnisoni	Gunnison's prairie dog	Requires well drained, deep soils for burrow construction. Generally inhabit areas that are flat, but sometimes occupy areas with steeper slopes (Lupis et al. 2007).	Documented; suitable habitat is present in the Project Area.	Yes
Cynomys leucurus	White-tailed prairie dog	Requires deep, well-drained soils for burrows. Habitat includes saltbush and sagebrush shrublands with grassy understory (Lupis et al. 2007).	Unlikely; suitable habitat is not present in the Project Area.	No
Idionycteris phyllotis	Allen's big-eared bat	Found in a variety of wooded habitats including ponderosa pine forest, pinyon-juniper woodland, riparian woodland, oak woodland, pine-oak woodland, and fir forest. May also be found in arid habitats, including desert shrub, mesquite grassland with scattered oaks, xeric scrub, and tropical deciduous forest (IUCN 2015).	Possible; habitat exists, but work would not affect habitat or behavior.	No
Euderma maculatum	Spotted bat	Forage in large open habitats, including arid or Ponderosa pine forests, and marshlands. Roost in small cracks in cliffs and stony outcrops (IUCN 2015).	Possible; habitat exists, but work would not affect habitat or behavior.	No
Myotis thysanodes	Fringed myotis	Prefers oak and pinyon woodlands, but can be found in a variety of desert-scrub to fir-pine associations. Roost sites may be in caves, mines, and building (IUCN 2015).	Possible; habitat exists, but work would not affect habitat or behavior.	No
Nyctinomops macrotis	Big free-tailed bat	Can be found in urban areas, dry forests and pine forests. It is a seasonal migrant throughout much of its range and it is insectivorous (IUCN 2015).	Possible; habitat exists, but work would not affect habitat or behavior.	No

Scientific Name	Common Name	Habitat	Potential to be Impacted by the Proposed Action	Further Evaluated
Vulpes macrotis	Kit fox	Prefers arid and semi-arid regions encompassing desert scrub, chaparral, halophytic, and grassland communities with loose textured soils for denning and sparse ground cover. Will use agricultural lands, and also can inhabit urban environments (IUCN 2015).	Possible; suitable habitat is present in the Project Area.	Yes
Birds				
Asio flammeus	Short-eared owl	Favors large areas of open grassland. Nests on ground in prairies, hayfields or even stubble fields (USFWS 2015b).	Unlikely; occasional winter resident, no known nesting.	No
Athene cunicularia	Burrowing owl	Habitat is open grassland and prairies, but it also utilizes other open situations, such as golf courses, cemeteries, and airports (UDWR 2015a).	Possible; known occupancy and potential for habitat in the Project Area.	Yes
Buteo regalis	Ferruginous hawk	Arid to semi-arid regions, shrub steppe, grasslands and agricultural areas. Prefers open, flat and rolling terrain largely devoid of trees save for small groves, riparian corridors, and shelterbelts. Avoids high elevations, forest interiors, narrow canyons, cliff area and habitats recently altered by agriculture (BLM n.d.)	Unlikely; no known occurrences in the Project Area.	No
Dolichonyx oryzivorus	Bobolink	Bobolinks in the west nest and forage in wet meadow (grasses and sedges), wet grassland, and irrigated agricultural (primarily pasture and hay fields) areas. These habitats, particularly wet meadows, tend to be associated with riparian or wetland areas (UDWR 2015a).	Unlikely; rare migrant in area.	No
Haliaeetus leucocephalus	Bald Eagle	Require a good food base, perching areas, and nesting sites. Habitat includes estuaries, large lakes, reservoirs, rivers, and some seacoasts. In winter, the birds congregate near open water in tall trees for spotting prey and night roosts for sheltering (USFWS 2015c).	Unlikely; no nesting habitat in Project Area	No
Numenius americanus	Long-billed curlew	Essential nesting habitat includes short grass (less than 30 cm tall), bare ground components, shade, and abundant vertebrate prey. Uncultivated rangelands and pastures are a primary habitat type (UDWR 2015a).	Unlikely; minimum habitat and occurrence in the Project Area.	No
Fish				
Catostomus discobolus	Bluehead sucker	Mostly found in mainstream rivers and tributary streams and infrequently in lakes and reservoirs (Carman 2007).	Unlikely; no habitat in Project Area.	No
Catostomus latipinnis	Flannelmouth sucker	Found in the Colorado River Basin in riffles, runs, pools, and eddies in slow	Unlikely; no habitat in Project Area.	No

Scientific Name	Common Name	Habitat	Potential to be Impacted by the Proposed Action	Further Evaluated
		flowing and low-gradient reaches (Carman 2007).		
Gila robusta	Roundtail chub	Roundtail chub occur in cool to warm water over a wide range of elevations in rivers and streams throughout the Colorado River basin, often occupying open areas with the deepest pools and eddies (USFWS n.d.)	Unlikely; no habitat in Project Area.	No
Plants				
Astragalus iselyi	Isley milkvetch	Seleniferous and gypsiferous sandy to gravelly clay slopes of the uranium-rich soils derived from the Morrison (3 locations), Paradox (1 location) and Mancos formations at 1525 to 2010 m elevation (5003-6595 ft) in pinyon-juniper and desert scrub communities (NatureServe 2014).	Possible; habitat may exist within the Project Area.	Yes
Lomatium latilobum	Canyonlands lomatium	On Entrada Sandstone and Navajo Sandstone, between fins and in slot canyons, in sandy soil deposits and in rocky crevices. Surrounding plant communities are desert shrub, pinyon-juniper, or ponderosa pine-mountain brush. Found at elevations of 1237-2207 m (4058-7240 ft) (NatureServe 2014; UDWR 2015c; UNPS 2015).	Possible; habitat may exist within the Project Area.	Yes
Lygodesmia entrada	Entrada rushpink	Juniper and mixed desert shrub communities at 1340-1465 m elevation (4400-4800 ft). In deep sandy soil, Entrada Sandstone (NatureServe 2014; UDWR 2015c; UNPS 2015).	Possible; habitat may exist within the Project Area.	Yes
Perityle specuicola	Alcove rock daisy	Dry sites in alcoves, cliff bases, and narrow, protected canyons on Navajo Sandstone and Cedar Mesa sandstone formations, and in Permian limestone. Found within pinyon-juniper, desert shrub, and hanging garden communities at 1125-1280 m elevation (3690-4200 ft) (NatureServe 2014; UDWR 2015c; UNPS 2015).	Unlikely; habitat is not present in the Project Area.	No
Sphaeralcea janeae	Jane's globemallow	Warm and salt desert shrub communities on the Shinarump and Moenkopi formations and White Rim and Organ Rock members of the Cutler Formation at 1200-1400 m elevation (4000-4600 ft), flowers May-July. Frequently on sandy and gravelly soils of the weathered underlying formations, often on river benches and roadsides (NatureServe 2014; UDWR 2015c; UNPS 2015).	Unlikely; habitat is not present in the Project Area.	No

Scientific Name	Common Name	Habitat	Potential to be Impacted by the Proposed Action	Further Evaluated
Sphaeralcea psoraloides	Psoralea globemallow	Salt and mixed desert shrub communities and pinyon-juniper communities; can occur in areas where vegetation is sparse. Occurs on clayey, silty, sandy, and gravelly semi-barrens, often under alkaline conditions. Found at elevations of 1220-2040 m (4000-6700 ft) (NatureServe 2014; UDWR 2015c; UNPS 2015).	Possible; habitat may exist within the Project Area.	Yes

3.3.6.1 Gunnison's Prairie Dog

Gunnison's prairie dog (*Cynomys gunnisoni*) is a member of the Sciuridae family, which includes squirrels, chipmunks, marmots, and prairie dogs (USFWS 2015d). Gunnison's prairie dog adults vary in length from 11.8 to 15.4 inches (300 to 390 mm) and weigh 0.6 to 3 pounds (250 to 1,350 grams) with males averaging slightly larger than females (Lupis et al. 2007). The dorsal color is yellowish buff intermixed with blackish hairs and the top of the head, sides of cheeks, and "eyebrows" are noticeably darker than the back (USFWS 2015d). The Gunnison's prairie dog range occurs in the four corners region, in northeast Arizona, northwest New Mexico, southeast Utah, and southwest Colorado (Reid 2006).

Gunnison's prairie dogs are commonly associated with grasslands and high desert scrublands. Gunnison's prairie dogs feed predominantly on grasses, forbs, and sedges, but also consume insects. Primary food sources include borages, mustards, grasses, and some shrubs. They require well drained, deep soils for burrow construction. Gunnison's prairie dogs generally inhabit areas that are flat, but sometimes occupy areas with steeper slopes if the slopes are also long. They group in social systems, with colonies containing up to several hundred individuals. Colonies are then subdivided into smaller groups within a larger colony and may contain two to 19 Gunnison's prairie dogs. Gunnison's prairie dogs begin to hibernate from mid-September to November and emerge in February to late April. Many colonies occur at high elevations and therefore rely on placement of burrows below the frost line. Gunnison's prairie dogs breeding season occurs from mid-March to mid-May. Young emerge in mid-May to July at about four weeks of age. Most females remain in their natal territory for life, while most males migrate to another territory after one year (Lupis et al. 2007).

A Gunnison's prairie dog colony was found along the Needles Overlook Road between Highway 191 and the Y-intersection (**Figure 3**). About 10 individuals were observed on both sides of the road, but additional individuals were likely hiding in burrows. From aerial imagery, the colony is quite extensive. Active burrows within the Project Area were noted during the site visit and several were within five to 10 feet of the roadway.

3.3.6.2 Kit Fox

Kit fox *(Vulpes macrotis)* is a member of the Canidae family. Kit fox are very similar in appearance to swift fox (*Vulpes velox*) and gray fox (*Urocyon cinereoargenteus*), but can be distinguished from all other fox species by their small size and black-tipped tail. They

have a yellowish-gray to grizzled back, a pale yellow to white underside, and dark side muzzles. Adults range from 28.7 to 33.1 inches (73 to 84 cm) in length plus a 10.2 to 81.3 in (26 to 32 cm) long tail, and weigh 3.3 to 5.5 pounds (1.5 to 2.5 kg) (Meaney et al. 2006). Kit fox are native to much of the western United States and northern Mexico. Although the species is not overly abundant in Utah, it does occur in the western, east-central, and southeastern areas of the state (UDWR 2015a).

Kit fox are primarily associated with open lands such as prairies, plains, desert habitats, mixed-grass shrublands, shrublands, and on the periphery of pinyon-juniper woodlands (Meaney et al. 2006; UDWR 2015a). Habitat within Utah has been reported as including sage-saltbrush grasslands, mat saltbrush, greasewood-saltbrush stands, and shrub-grasslands with some pinyon-juniper woodlands (Meaney et al. 2006). Studies indicate that the majority of kit fox in Utah prefer loamy desert soils with less than 20 percent vegetative cover (Meaney et al. 2006).

The kit fox eat small mammals, including rabbits and hares, prairie dogs, small birds, invertebrates and plants (UDWR 2015a). They are highly dependent upon lagomorphs, prairie dogs, and kangaroo rats (Meaney et al. 2006). The species is mostly nocturnal, but may be found during daylight hours outside its den (UDWR 2015a). In Utah, the species was found to forage no more than 1.86 miles (3 km) from dens. The home range for the species is between 0.96 to 4.48 square miles (251 and 1,160 hectares [ha]). Kit fox pair during October and November and breed in December through February. Gestation typically lasts 49 to 55 days and one to six young are born from late January to March. Pups begin to emerge from dens after four to five weeks (Meaney et al. 2006).

Kit fox were not observed during baseline field surveys, but suitable habitat exists near the Project Area. Mammal burrows were present along most of the project corridor, except in areas where slick rock or rocky soils were present. Many of the mammal burrows were large enough to be kit fox burrows. Although mammal tracks were present throughout much of the Project Area, most were identified as coyote tracks. Shrub-grassland areas, relatively open, near pinyon-juniper habitat would provide habitat for kit fox.

3.3.6.3 Burrowing Owl

The burrowing owl (*Athene cunicularia*), is a small owl ranging from 7.67 to 9.84 inches (in) (19.5 to 25 cm) tall and weighing about 0.33 pounds (150 grams). They typically are a dark brown color with lighter streaking vertically or spotting on their chest and have distinctive yellow eyes (Klute et al. 2003). Burrowing owls breed from southwestern Canada across the western United States to northern Mexico, Florida, and parts of the West Indies. They migrate south in the winter to areas in the southwestern United States to Honduras. In Utah, it is considered an uncommon breeder, but breeding habitat exists throughout the state, and it is not present in the winter (UDWR 2015a).

Burrowing owls prefer open grassland and prairies, but also utilize other open habitats, such as golf courses, cemeteries, and airports (UDWR 2015a). The species eats primarily terrestrial invertebrates, but may also consume small mammals, birds, frogs, toads, lizards, and snakes (Klute et al. 2003; UDWR 2015a). Burrowing owls forage in open areas such

as cropland, pasture, prairie dog colonies, fallow fields, and sparsely vegetated areas (Klute et al. 2003). Breeding season occurs typically from mid-March through September with pairs forming in March or April. Breeding occurs in open areas such as native prairies, pastures, hayfields, fallow fields, road and railway right-of-ways, airports, and golf courses. Burrowing owls nest in natural cavities surrounded by thin vegetation or in small mammal burrows. They most commonly use black-tailed prairie dog burrows and are less likely to use burrows of Gunnison's prairie dogs, coyotes, and white-tailed prairie dogs (Klute et al. 2003). If a mammal burrow is not available, owls would sometimes excavate their own nest burrow. On average, five to nine eggs are incubated for 27 to 30 days. The young are incubated by the female, but once hatched, they are tended by both parents (UDWR 2015a). Young venture out of the burrow by four weeks (Klute et al. 2003) and fledge the nest after about 40 to 45 days (UDWR 2015a).

Burrowing owls were not found during field surveys, but suitable burrowing owl habitat exists near the project and within the Project Area. Gunnison's prairie dog burrows were noted within the Project Area, which could provide suitable burrows for burrowing owl (**Figure 3, Appendix A**). Additionally, mammal burrows were present along most of the project corridor, except in areas where slick rock or rocky soils were present, which were primarily near pinyon-juniper shrubland and woodlands. Many of the mammal burrows were large enough to provide habitat for burrowing owl. Mammal burrows in grassland areas, relatively open with scattered shrub or trees would provide adequate habitat for the species.

3.3.6.4 Isley Milkvetch

Isley's milkvetch is a small perennial plant, approximately three to ten in. (25 cm) in height (UNPS 2015). This milkvetch species is a member of the pea family (Fabacaceae), a very large worldwide family with many rare species of milkvetch and other genera. Isley's milkvetch has characteristic red stems; slightly fuzzy to nearly hairless leaflets; cream-colored flowers, smaller and with shorter calyx than a similar species (Cisco milkvetch, *Astragalus subulosus* var. *subulosus*); and inflated, hairy pods that tend to droop or hang away from the stem (UNPS 2015). Flowering tends to occur from March to April, as late as May.

This species of milkvetch is endemic (restricted in its distribution) to the west slope of the La Sal Mountains in Grand and San Juan counties, Utah, specifically on seleniferous and gypsiferous sandy to gravelly clay slopes of the uranium-rich Morrison and Mancos formations (Franklin & UDNR 2005; UNPS 2015). Vegetation communities at locations where this plant is known include pinyon-juniper and desert shrub communities, at elevations ranging between 5,000 and 6,600 feet. The nearest known location of this plant is approximately 15 miles east of the northern project limits, in the vicinity of Manti La Sal National Forest (Franklin & UDNR 2005; UNPS 2015).

Isley milkvetch was not found during field surveys, but habitat for the species exists near the Project Area. Habitat is present within desert scrub and pinyon-juniper habitat. Although this habitat overlaps with parts of the Project Area, it is unlikely this plant would occur within the existing roadway prism due to existing shoulder disturbance and a lack of general vegetation.

3.3.6.5 Canyonlands lomatium

Canyonlands lomatium or biscuitroot is a perennial species in the parsley family (Apiaceae). This species has pinnate dissected leaves that sprout from near ground-level, resulting in a stemless appearance with a woody base. Flowers are clustered in heads near the end of the flowering shoot, with fruits resembling those of other members in this family, such as parsley, dill, or carrot. Flowering occurs starting in April but may last through June (UNPS 2015).

Known locations of this species are restricted to Grand and San Juan counties in Utah and Mesa County in Colorado, primarily around Arches National Park and Colorado National Monument (Schneider 2015; UNPS 2015). This plant is found growing in rock crevices and sandy deposits of Entrada and Navajo Sandstone, most often in slot canyons and close to or between sandstone fins and walls (Schneider 2015; UNPS 2015). Vegetation surrounding known locations of this plant in Utah include pinyon-juniper and desert shrub communities at elevations ranging from 5,000 to 6,000 feet. The overall known elevation range of this plant (Utah and Colorado locations) ranges from 4,050 feet to 7,250 feet. The nearest known location of Canyonlands biscuitroot is approximately 10 miles north-northeast of the northern project limits (Franklin & UDNR 2005; SEINet 2015; UNPS 2015).

Canyonlands biscuitroot was not found during field surveys, but habitat for the species exists near the Project Area. Habitat is present within rock crevices, slot canyon, and sandy deposit habitat. Although this habitat is present near the Project Area, it is unlikely this plant would occur within the existing roadway prism due to existing shoulder disturbance and a lack of general vegetation.

3.3.6.6 Entrada Rushpink

Entrada rushpink, or rushpink skeletonplant, is a perennial plant in the sunflower family (Asteraceae). Slender, woody stems branching from the base give this plant a wiry appearance, with the overall plant forming a rounded clump. Leaves are slender, stiff, and spreading outward from the stems. Flowers are white or pinkish and have the appearance of 5 large petals (ray flowers), typically blooming in June (UNPS 2015).

This rushpink species is endemic to Emery, Grand, and San Juan counties, Utah (UNPS 2015). Entrada rushpink is found in areas of mixed desert shrub and juniper vegetation communities between 4,400 and 4,800 feet elevation (UNPS 2015). Entrada rushpink is known to occur approximately 10 miles north of the northern project limits near Arches National Park, and 60 miles south of the Project Area, east of Blanding, Utah (Franklin & UDNR 2005; SEINet 2015; UNPS 2015).

Entrada pinkrush was not found during field surveys, but habitat for the species exists near the Project Area. Habitat is present within desert scrub and pinyon-juniper habitat. Although this habitat overlaps with parts of the Project Area, it is unlikely this plant would occur within the existing roadway prism due to existing shoulder disturbance and a lack of general vegetation.

3.3.6.7 Psoralea globemallow

Psoralea globemallow, or scurfpea globemallow, is a flowering perennial species in the mallow family (Malvaceae). This plant branches from the base with stems approximately 5.5 to 14 in (14 to 35 cm) in height; with leaves that are three-lobed or simple with hairs on the surface. Flowers are orange, round or globe-shaped with 5 petals and green centers, grouped at the end of stems, and bloom from mid-May to July (UNPS 2015).

This species is considered endemic to the Colorado Plateau in Emery, western Grand, San Juan, and Wayne counties, Utah, particularly the eastern and southeastern foot slopes of the San Rafael Swell (Franklin & UDNR 2005; UNPS 2015). This plant is found growing in pinyon-juniper, salt desert, and mixed desert shrub vegetation communities on saline and gypsiferous soils at elevations ranging from 4,000 to 6,300 feet. Known locations of psoralea globemallow occur on Mancos Shale, Buckhorn Conglomerate, Curtis sandstone, Entrada siltstone, Carmel, and Kaibab limestone geologic substrates (UNPS 2015). The nearest confirmed locations of this plant to the Project Area are approximately 55 miles to the south and approximately 60 miles to the west (SEINet 2015; UNPS 2015).

Psoralea globemallow was not found during field surveys, but habitat for the species exists near the Project Area. Habitat is present within desert scrub and pinyon-juniper habitat. Although this habitat overlaps with parts of the Project Area, it is unlikely this plant would occur within the existing roadway prism due to existing shoulder disturbance and a lack of general vegetation.

3.3.7 Visual Resources

The Proposed Action Alternative is in an area that is managed by the BLM as Visual Resource Management (VRM) Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. That is, projects can occur but should not change the overall landscape conditions. The Needles Overlook and Anticline Overlook Roads are also designated as Scenic Backways.

The project visual study area extends approximately 1 mile from the project alignment for the length of the Proposed Action Alternative (37.5 miles). The visual project study area includes six key observation points (KOPs), described below, and landscape character photographs. Viewer groups identified for the visual project study area include motorists traveling along Needles Overlook and Anticline Overlook Roads.

General Visual Setting

The Canyon Rims SRMA is situated on top of a large plateau. The project roadways provide access to two developed, fee campgrounds, four scenic overlooks, and several trailheads. Both roadways are classified as Rural Recreational and Scenic Roads. The majority of visitors come to observe the Colorado River's canyon from the overlooks at the edge of the plateau.

The Project Area lies within the Canyonlands Section of the Colorado Plateaus Province geologic formation of the Intermontane Plateaus. The Canyonlands Section is comprised of deeply incised canyons, plateaus, mesas, buttes and badlands. Delicate rock forms,

such as tall pinnacles, deep alcoves, natural bridges and arches are abundant (University of Utah 2009). Geology of the area defined by the Colorado Plateau is described as an area that has been structurally uplifted. Rivers flowing across the area cut down into the bedrock as it was being uplifted. Areas of shale, sandstone, limestone, dolomite, and volcanic rock outcrop are extensive. Quaternary and Tertiary lava flows occur in the southwest portion of the area and older lava flows cap plateaus and mesas. There are also isolated volcanic cones and eroded volcanic necks throughout the area (University of Utah 2009).

Vegetation consists largely of low-growing, sparse, and regularly-spaced shrubs interspersed with smaller shrubs and bunchgrasses. Trees are sparsely located on the plateau valleys, but are more densely populated on some hillsides. Open water bodies and streams are very scarce within the province.

Key Observation Points

KOPs represent both sensitive and typical public viewpoints in the project study area and form the basis of the visual analysis. KOPs were identified in consultation with the BLM Interdisciplinary team (Outdoor Recreation Specialist) based on distance zones, landscape features, and the potential viewer groups and their sensitivity to visual resources. Because it is not feasible to analyze all views of the proposed project area, six KOPs were selected to represent the existing visual setting and to compare to the Proposed Action Alternative. The locations of the KOPs are described below. Visual contrast rating forms were completed for each KOP; the visual contrast rating forms are included in **Appendix G**.

KOP-1 through KOP-4 are located along the unpaved portions of the Anticline Overlook Road. These KOPs show typical views of the roadway alignment and plateau. Viewer groups with views from these KOPs are generally motorists driving on Anticline Overlook Road to access viewing areas, campgrounds, and other recreational resources in the area. Viewers traveling along these roadways would typically be traveling to or from recreational activities via automobile or road bicycle. Viewers traveling along Anticline Overlook Road would typically be traveling this route to access other viewing or recreational areas and would anticipate that the roadway would be part of the developed infrastructure to access the recreational areas within the Canyon Rims SRMA.

KOP-5 and KOP-6 are located along the paved portions of the Needles Overlook Road. Users of the Needles Overlook Road are similar to those as previously described for KOP-1 through KOP-4. The users of Needles Overlook Road have similar recreational views as those as those along the Anticline Overlook Road except that the Needles Overlook Road users travel along a paved roadway. Based on the access, recreational activities, and existing infrastructure, the majority of viewers for KOPs associated with the project area would have low to moderate concern for views along the project study area. **Table 3.7** briefly describes the KOPs identified for the project.

Table 3.7. KOP Descriptions

Name	Location	View Direction	General Description of Views
KOP-1	Anticline Overlook Road T27S, R21E, Section 34 SLB&M	Southwest	Views of the unpaved portions of Anticline Overlook Road. Views show typical view of the plateau that have flat to rolling hills in the foreground, middle ground, and background areas.
KOP-2	Anticline Overlook Road T28S, R21E, Section 5 SLB&M	Northwest	
KOP-3	Anticline Overlook Road T28S, R21E, Section 8 SLB&M	Southeast	
KOP-4	Anticline Overlook Road T28S, R21E, Section 34 SLB&M	North	
KOP-5	Needles Overlook Road T29S, R21E, Section 26 SLB&M	Northeast	Views of the paved portions of Needles Overlook Road. Views show typical view of the plateau that have flat to rolling hills in the foreground, middle ground, and background areas. KOP-5 includes background views of the La Sal Mountains.
KOP-6	Needles Overlook Road T29S, R21E, Section 26 SLB&M	Southwest	

In the views from KOP-1 through KOP-6, the topography in the foreground, middle-ground, and background distance zones consist primarily of relatively flat to rolling hills, which extend to the edge of the plateau. Views from KOP-5 also include background views of the La Sal Mountains to the northeast. The horizontal intersection between the middle ground open plain/plateaus and background mountain areas, generally creates a mild to medium contrast of form, line, and texture. In some areas this contrast is softened by the gently sloping hills intersecting the horizontal plain at a low angle. The mountains tend to be dappled dark grays, medium and light browns, and tans intermixed. The plateau areas tend to be a mix of light tans, browns, reds which blend together more evenly and have a more fine-textured and homogeneous appearance with the exception of the dark green dispersed evergreen trees. No canyon views or water features are visible in these views.

Vegetation form, texture, and color are generally very consistent over much of the valley/plateau areas, consisting almost exclusively of evenly-spaced, low shrubs interspersed with lower-growing bunchgrasses with dispersed dark green juniper trees. The sagebrush shrubs are generally medium to light gray with light yellow tints on upper leaves and the other low-growing shrubs and grasses tend to be much lighter yellows, tans, and soft grays through much of the year. The contrast of the vegetation color and texture very close to the observer (i.e., within several hundred feet) tends to be moderately strong. However, the overall effect throughout most of the view is fairly homogeneous in color and fine to medium in texture.

The existing roadways (both the paved Needles Overlook and unpaved Anticline Overlook roadway) break up the natural form, texture, and color of the valley/plateau. The existing roadways have a contrasting color (either gray, light tan, or reds depending on existing roadway surface) and provide a smooth texture contrasting compared to the fine to medium textures of the vegetation along the plateau.

3.3.8 Wildlife Species Excluding USFW Designated Species

Other wildlife species evaluated for this Project include those that do not have a special status under the ESA or the BLM, but have great importance in the ecosystem, such as large migratory ungulates. The only ungulate species of concern is the pronghorn antelope (*Antilocapra americana*). Mule deer (*Odocoileus hemionus*) and desert bighorn sheep (*Ovis Canadensis nelsoni*) have habitat near the Project Area, but habitat does not overlap with the Project Area. Mule deer winter range is present to the north and south of the Project Area and desert bighorn sheep year-round range is confined to the steep cliffs and canyons surrounding the Project Area (**Figure 4, Appendix A**.). Therefore, it is anticipated these species are not present in or near the Project Area.

3.3.8.1 Pronghorn Antelope

The Canyon Rims SRMA contains over 80,000 acres of crucial year-long pronghorn antelope habitats that the proposed surface roadway improvements would traverse through. Pronghorn antelope are present in the western U.S. from southern Canada to northern Mexico. In Utah, the species range extends over much of the state, with most habitat being concentrated in the western and eastern thirds of the state. Pronghorn antelope are common within the state and are often found in small groups traveling during the day (UDWR 2015a).

Pronghorn are typically found in grassland communities with scattered shrubs. They prefer low, rolling, expansive areas. Pronghorn rely on open areas in order to see long distances to avoid predators. They also must be in areas with low, scattered vegetation to allow for fast escape, as they can run up to 50 miles per hour. They can occur at elevations from sea level to 11,000 feet (3,353 m), but the greatest populations are found between 4,000 to 6,000 feet (1,220 to 1,830 m). Pronghorn are herbivorous and eat a wide variety of plant species, which varies seasonally. They may eat sagebrush, cacti, grasses, and forbs throughout the year. Pronghorn breed during late summer to fall and in early summer, from May to June, females give birth to one to two offspring (Howard 1995).

The Utah Division of Wildlife Resources (UDWR) captured pronghorns from Wyoming and other parts of Utah in 1971 and 1986 and moved pronghorn individuals to the Hatch Point subunit. In 2008, the UDWR estimated that the population consisted of 185 individuals (UDWR, 2014). The BLM and DWR have installed and maintain thirteen pronghorn guzzlers in the Canyon Rims SRMA to provide water sources for the pronghorn. Eight of these developments are within two miles of the Project Area. The UDWR has designated a limited-entry buck pronghorn hunting season in the Hatch Point subunit from September 13 to September 21, 2014 (UDWR, 2014).

4 ENVIRONMENTAL IMPACTS

4.1 INTRODUCTION

The impacts of the two alternatives to the resources listed above are detailed in this chapter.

4.2 GENERAL ANALYSIS ASSUMPTIONS AND GUIDELINES

It is assumed the repaving and construction related activities associated with the completion of the Anticline and Needles Overlook roadways would decrease the overall maintenance of the roadway and make it easier for users to access recreational facilities located along both roadways.

4.3 DIRECT AND INDIRECT IMPACTS

Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Negligible impacts are defined as non-significant positive or negative effects to a resource that are generally undetectable. Minor impacts are defined as non-significant positive or negative effects to a resource that are generally detectable.

4.3.1 Alternative A – Proposed Action

4.3.1.1 Cultural Resources

Of the 20 new recorded or re-recorded sites and 57 isolated occurrences, 12 have been recommended for inclusion on the NRHP. Ten sites can be avoided by changes to road design; while portions of two sites located immediately adjacent to the roadway cannot be avoided through design changes. Sites proposed for eligibility to the NRHP that would be impacted by the proposed project include site 42SA31564 and 42SA31566. Site 42SA31564 would be impacted from slope flattening activities. Slope flattening activities involve the placement of fill material along steep slopes beyond the road shoulder as a safety measure. Placement of this fill would cover portions of site 42A31564 within the defined site boundary but would not cover any artifact loci within the site. The loci are concentrations of artifacts within the overall site boundary. There would be no excavations within site 42SA31564 and no artifacts would be moved from the current position, only covered.

Site 42SA31566 encompasses one of the staging areas planned for the project. This site has previously been impacted both from the existing road that runs through the site and from storage of gravel, likely from previous road maintenance activities. All proposed activity within site 42SA31566 would occur on previously disturbed areas, thus avoiding any additional impact to the site. Activities associated with the staging area would include vehicular traffic and storage of materials and equipment. No excavations in the surface of the area would occur as part of the Proposed Action Alternative. Fencing would be used to prevent access outside of the previously disturbed areas. The following sections describe the two identified sites that cannot be avoided and the anticipated disturbance to the sites.

4.3.1.1.1 Site 42SA31564

The existing road traverses the northern end of this site. Permanent impacts would result to a small portion of this site from fill material placed adjacent to the road to flatten the slope for safety reasons. This fill area is approximately 215 feet by 25 feet on the south side of the road and 100 feet by 25 feet on the north side of the road. The existing ground would not be excavated or otherwise disturbed but would only be covered with fill material, thus any surface features would not be moved or destroyed. The area of permanent impact does not include any portions of the loci identified during the field survey.

4.3.1.1.2 Site 42SA31566

The existing road bisects this site. Additional disturbance has occurred at this site due to stockpiling of gravel material, possibly from previous road maintenance activities. The proposed action includes using the disturbed portions of this site as a staging area for equipment and materials. Only the disturbed areas of this site would be used under the proposed action, thus no additional impacts are expected to occur in this area other than what has previously occurred.

4.3.1.1.3 Cultural Resource Impacts Summary and Mitigation

Based on the Proposed Action Alternative, permanent impacts to the identified sites would be limited to covering a small portion of one of the sites with fill material and using a previously disturbed portion of site for staging activities. The impact to site 42SA31564 was determined to be minor because the site would only be partially buried, thus artifacts would only be covered and site would not lose any integrity. No additional impacts would occur to Site 42SA31566 other than what has previously occurred.

4.3.1.2 Livestock Grazing

Disturbance to Public Lands

The surface roadway improvements proposed under the Proposed Action Alternative would occur within the existing right-of-way (ROW) of the two roadways: Needles Overlook Road and Anticline Overlook Road. No roadways would be widened. Also, the Y-intersection realignment at Needles Overlook Road and Anticline Overlook Road would disturb some areas of undisturbed land as a result of the additional parking, although the majority of the activity would occur on previously disturbed areas.. As a result, under the Proposed Action Alternative, a small amount of public lands used for livestock grazing would be disturbed, although permitted livestock numbers would remain the same. Therefore, long-term impacts to public lands used for livestock grazing would be negligible.

During construction, staging areas and roadway closures would not affect livestock grazing operations. The BLM and CFLHD would coordinate with local cattle ranchers to ensure they are aware of the temporary roadway closures, if any, due to construction activities. Also, each agency would develop and implement a communication strategy to notify any affected entities of construction dates and temporary roadway closures, thereby minimizing potential short-term construction impacts on livestock grazing operations. Therefore, short-term impacts to livestock operations would be negligible.

Increased Injury and Mortality to Livestock along Anticline Overlook Road

With the exception of cattle guards and limited fencing, there is no other livestock infrastructure within or near the existing roadways. Therefore, implementation of the Proposed Action Alternative would not directly remove, replace, or result in any changes to existing livestock infrastructure, nor grazing operations. However, because there is a lack of livestock grazing infrastructure, specifically continuous fencing and corrals near the roadways that are currently unpaved (i.e. Anticline Overlook Road), the implementation of the Proposed Action Alternative may indirectly increase the potential for livestock collisions, and in turn, increase the rate of livestock injuries and mortalities along Anticline Overlook Road. Paving Anticline Overlook Road may increase the number of vehicles travelling along the roadway, but the current speed limits would be maintained. This could result in indirect effects, such an increase the potential for livestock and vehicle collisions along this roadway segment, leading to a minor increase in the rate of livestock injury or mortality.

Overall, under the Proposed Action Alternative, visitation and use along the newly paved Anticline Overlook Road is expected to indirectly increase the likelihood of livestock injury and mortality, specifically during high visitation seasons, such as during the spring months. Maintaining current speed limits and proper signage should minimize the risk of livestock collisions by encouraging motorists to reduce travelling speeds and pay attention to the presence of livestock near the roadway. Therefore, long-term impacts related to livestock injury or mortality would be minor.

4.3.1.3 Migratory Birds

The surface roadway improvements proposed under the Proposed Action Alternative would occur within the existing ROW of the two roadways. If vegetation removal occurs during the migratory bird nesting season, Environmental Protection Measures (**Section 2.2.5.4**) that require preconstruction nest surveys to ensure construction activities would avoid disturbing any active nests and nesting birds; therefore direct impacts from vegetation removal activities to nesting migratory birds are predicted to be negligible. Activities occurring outside of the nesting season would have minimal impacts to individuals in the Project Area as birds can readily move to nearby habitats to forage and roost.

Implementation of the Proposed Action Alternative would have the potential to cause both direct and indirect effects to migratory bird habitats. Direct, permanent effects to migratory bird habitats are expected to be minimal due to the low-quality bird habitat directly in the Project Area. Approximately 57 acres of vegetation and some tree removal, in low quality or marginal habitat, would occur in or adjacent to the two current roadways, mainly within existing disturbed areas. Permanent vegetation removal would result from project improvements such as slope flattening, hardening pullouts, parking areas and entrances, intersection re-alignment and road reconditioning, mainly in the current road prism. Habitat directly within the existing right-of-way of the Needles Overlook Road and adjacent to the Anticline Overlook Road that would be converted to a paved surface is already disturbed and provides low-quality bird habitat. Birds are unlikely to nest or even forage in these low-quality areas.

Short term direct noise and visual disturbances would temporarily occur due to the presence of workers and equipment during construction activities. This activity could temporarily deter individual migratory birds from using habitats in or near the Project Area and adjacent areas for foraging, nesting or roosting.

Indirect long-term effects to migratory bird habitats are expected to be minimal. Habitat within the roadway is of low-quality, therefore removal of these areas are unlikely to impact migratory bird populations or habitat quality in the Canyon Rims SRMA. The Proposed Action Alternative is not expected to increase the overall visitation to the Canyon Rims SRMA. Historic annual visitation increases of approximately 3.1 percent per year are expected to continue into the future (BLM, 2016).

The Needles Overlook Road is already paved; repaving the road is not expected to increase visitation or change road use. With the conversion of the Anticline Overlook Road from gravel to a paved surface, there is potential for expanded use onto the Anticline Overlook Road. Expanded visitor use on the Anticline Overlook Road could increase the frequency of noise and visual disturbances. Migratory bird habitat directly adjacent to the Anticline Overlook Road is poor and bird use in roadway is expected to be low. Abundant suitable habitats are found outside the roadway prism that birds can readily use, therefore long-term indirect noise and visual disturbances to migratory birds and their habitats are expected to be negligible along the Anticline Overlook Road. The project is not expected to create additional long-term indirect noise and visual disturbances to migratory bird populations or their habitats.

Additionally, construction could cause indirect impacts by decreasing the presence of food sources within the Project Area. Food sources such as prey species are unlikely to remain in the Project Area due to noise and visual disturbances. However, the amount of habitat removed adjacent to the roadway is small compared to the amount available within the vicinity of the Project Area, and therefore this impact is negligible.

4.3.1.3.1 Raptors

The Moab 2008 RMP precludes surface disturbing activities within USFWS spatial and season buffers during the nesting season unless surveys indicate no nesting raptors are present. Within USFWS spatial buffers the Project Area offers suitable nesting habitats for several raptor species. However, with Environmental Protection Measures in place (**Section 2.2.5.4**), direct impacts from construction activities to nesting raptors are predicted to be negligible.

The Proposed Action Alternative is not a broad-scale, long-term land use activity. No new permanent structures or facilities would be constructed. Therefore, the Proposed Action Alternative would be unlikely to impart adverse population effects to raptors as a result of altered or reduced prey availably or their habitat that might render it unsuitable for future occupancy by a nesting raptor pair (Romin and Muck, 2002).

As with migratory birds, construction activities occurring outside of the nesting/fledging period would have negligible effects to raptors because they would be likely to temporarily move to undisturbed areas in the vicinity where forage and cover is abundant (Romin and Muck, 2002). Additionally, similar to migratory birds, the project is expected

to have minimal long-term indirect noise and visual disturbances to raptors and their habitats (**Section 4.3.1.3**) from expanded visitor use along the Anticline Road. These impacts are expected to be negligible as visitor use along this road is currently occurring and there are ample suitable habitats in area that raptors may utilize for nesting, foraging and roosting.

In summary, direct and indirect impacts to migratory bird and raptor habitat would occur from vegetation removal, and the construction and improvement of permanent road related project features within the current road prism. Additionally, some noise and visual disturbance would occur due to the increase frequency of noise on the Anticline Overlook Road. However, much of the migratory bird habitat directly in or adjacent to the project roadway is of low-quality and consists of non-native species. Ample suitable habitats are available in the vicinity of the Project and in the Canyon Rims SRMA. Environmental Protection Measures (**Section 2.2.5.4**) would be in place to ensure direct impacts from construction activities would not impact nesting migratory birds and raptors.

4.3.1.4 Recreation

Construction Impacts during Peak Visitation Season

Short-term adverse and direct impacts to recreation resources would occur under the Proposed Action Alternative during construction due to traffic delays. Temporary access restrictions may coincide with peak visitation during summer months and typical traffic delays would occur when traffic is restricted to one travel lane. The Utah Department of Transportation (UDOT) typically only allows paving from April 15 through October 15. Likewise, the highest visitation at the Canyon Rims SRMA occurs spring through fall, particularly in April and May and September and October. As a result, construction during the peak visitation season could discourage people from visiting Canyon Rims SRMA.

Most construction related delays are expected to occur during weekdays when visitation to the area is typically lower. No night time work would occur, but night time traffic is expected to be minimal. Segment 2 may be closed during construction with Looking Glass Road providing access to the two overlook roads. Construction on segments 1 and 3 (access to the overlooks) could be coordinated so that one lane remains open and delays are limited to a maximum of 30 minutes. During construction, even if a road closure is necessary, access to at least one of overlooks would be maintained at all times. Coordination would also ensure that all emergency response vehicles are provided immediate access to the roadway. Therefore, while it may be difficult to implement seasonal restrictions for the Proposed Action Alternative, if construction is limited to weekdays, visitation impacts and impacts to users' recreation experiences would be minimized and short-term impacts would be minor.

Improved Accessibility to Canyon Rims SRMA

Under the Proposed Action Alternative, resurfacing improvements to the existing roadways would provide beneficial impacts to recreation resources by enhancing the convenience, safety, and reliability of public access to Canyon Rims SRMA. These improvements would meet national, regional, and local visitor recreation needs. The improvements would allow better and safer access to recreation facilities in the SRMA through new surfacing, widened pull-outs, and intersection realignments. The

improvements would also reduce safety, maintenance, and long-term traffic concerns, unmarked culverts, steep shoulder slopes and overgrown vegetation.

With the conversion of the Anticline Overlook Road from gravel to a paved surface, there is potential for increased use of the roadway. However, any potential increase would only be an extension of the normal use now occurring on the Needles Overlook Road. It is anticipated that the potential increase could result in increased use of the road to the Anticline Overlook, as well as some increase in use of the Hatch Point Campground. Though expanded use could have the potential to reach levels similar to what is seen on the existing paved Needles Overlook Road, it is not expected due to the additional distance to the next point of interest, the Anticline Overlook. Most tourists that visit this area are on day trips and the additional travel to the Anticline Overlook may not be attractive to many visitors. Although there may be an increase in traffic on the Anticline Overlook Road, the Proposed Action Alternative is not expected to increase the overall visitation to the Canyon Rims SRMA. Historic annual visitation increases of approximately 3.1 percent per year are expected to continue into the future (BLM, 2016).

Most visitors and recreation users, specifically cyclists to the area would directly benefit from improved access upon completion of the surface roadway improvements. Access for road cyclists and mountain bikers would be upgraded with consistent new smooth surfaces for riding, roadway striping, and signage; thereby increasing riding safety and encouraging more cyclists to visit the SRMA. Also, upgrading the Anticline Overlook Road from an aggregate surface to a paved surface with a safety edge, and paved designated viewing area pull-outs would further improve access to the northern part of Canyon Rims SRMA. Overall, the improvements included under the Proposed Action Alternative would result in a long-term beneficial impact for visitors and recreation users to Canyon Rims SRMA.

Increased Visitation May Discourage Backcountry Users

While roadway improvements included under the Proposed Action Alternative would result in improved access for most visitors and recreation users along the Anticline Overlook road; such improvements could indirectly increase visitation to portions of the SRMA (Anticline Overlook area) that backcountry users may prefer to remain less visited and more remote. Hiking occurs on two developed hiking trails: the Windwhistle Nature Trail and the Trough Springs Hiking Trail, which are accessed from the Needles Overlook Road. The Hatch Wash Canyon system to the north of the SRMA is accessed by hikers and backpackers seeking remote recreation experiences (BLM, 2002). This area can be accessed from side roads that originate from Highway 191 or from the Anticline Overlook Road. These roads that provide access to the Hatch Wash Canyon system and other remote areas are difficult to travel on with many requiring 4WD vehicles and demand fairly lengthy travel times. The conversion of the Anticline Overlook Road from gravel to pavement would make these side roads easier to access initially, but due to the lengthy travel time and the difficulty of traveling on these road, it is not expected that there would be an increase in backcountry use because user would still need 4WD vehicles to travel on these access roads Therefore paving the Anticline Overlook Road is not expected to result in a measureable expansion of use by hikers and backpackers seeking

remote recreation experiences in the Hatch Wash Canyon system or other remote areas accessible from the Anticline Overlook Road.

As the Anticline Overlook Road area may experience increased visitation due to better access, indirect effects such as greater day use may occur, thereby pushing people and vehicles wanting a backcountry experience further into previously undisturbed areas. Unregulated dispersed camping could occur affecting opportunities for remote recreation experiences, which could overtime indirectly lead to minor degradation of undisturbed areas. As a result, the implementation of the Proposed Action Alternative may discourage user groups seeking remote backcountry experiences from visiting during peak season months. Although the Anticline Overlook road area may see increased use because of better access, the overall visitation to the Canyon Rims is not expected to increase as a result of the road improvements but is anticipated to increase based on historic data by 3.1 percent per year (BLM, 2016).

A smaller number of visitors enjoy a semi-primitive motorized experience by touring the backcountry by four-wheel drive and OHVs and occasionally these visitors may camp. Backcountry vehicle touring and camping occurs along the extensive system of 335 miles of unpaved routes originally created by the oil and gas and livestock industries (BLM 2002). The Anticline Overlook Road provides exclusive access to approximately 122 miles of these unpaved routes. The conversion of the Anticline Overlook Road from gravel to a paved surface would make these roads easier to access but it is not expected that the gravel road currently deters these backcountry visitors from seeking out and exploring semi-primitive motorized areas. Therefore, paving the Anticline Overlook Road is not expected to result in measureable expansion of backcountry touring and camping in the vicinity of the now graveled Anticline Overlook Road.

In summary, the Proposed Action Alternative could result in long-term and indirect minor effects on visitation use that discourage backcountry users; however, these effects would be outweighed by long-term and beneficial impacts associated with improved access and safety to the recreation facilities within Canyon Rims SRMA including paved aprons to encourage drivers to use established pullouts.

4.3.1.5 Threatened, Endangered, or Candidate Animal Species

Mexican Spotted Owl

The Moab 2008 RMP requires protocol MSO surveys prior to temporary actions within suitable and critical MSO habitats. If nesting MSO are detected the action would be delayed until outside the nesting season (March 1 to August 31) therefore direct impacts to nesting MSO are predicted to be negligible.

The majority of the project would occur within the existing roadway prism. Permanent and temporary vegetation removal would occur as a result of various construction activities including slope flattening, modifying/hardening parking areas, using staging areas, intersection improvements, and culvert replacement and extensions along both Anticline Overlook Road and Needles Overlook Road. Tree and shrub removal that could provide foraging habitat for MSO would occur as a result from the project. This foraging habitat within is of low quality due to its proximity to the existing roadway prism. It is

estimated that a total of 3.7 acres of permanent and 18.7 acres of temporary disturbance would occur to foraging habitat for MSO. The total 22.4 acres of impacted foraging habitat represents less than 0.1 percent of the total 23,489 acres of available foraging habitat available within the Canyon Rims SRMA and less than 0.5 percent of the 4,835 acres of foraging habitat within the 0.5 mile buffer of the Project Area.

Within suitable MSO foraging habitat thirty individual pinyon-juniper trees and 2.7 acres of pinyon-juniper shrubs would be removed. The tree and shrub areas removed are directly adjacent to the roadway and are unlikely to be used frequently by foraging MSO. Foraging habitat close to the roadway may increase the risk of vehicular collision with MSO. Therefore, the removal of this habitat could potentially lower the chances of MSO being struck by vehicles. Direct effects to foraging MSO nesting in the area would not occur from noise or visual disturbance during construction due to the implementation of Environmental Protection Measures (**Section 2.2.5**). Indirect temporary and long-term effects may occur to MSO from the removal of vegetation that provides habitat for prey, which subsequently could lower the availability of prey for MSO foraging near the project, but these impacts are estimated to be less than 0.1 percent of the habitats in the area and therefore are expected to be negligible.

Cliff faces that could provide nesting habitat for MSO are located at both the Anticline and Needles Overlooks within approximately 90 to 95 feet. However, the project vicinity has been surveyed numerous times by the BLM in the past, and no known nesting MSOs have been found near the project. Additionally, Environmental Protection Measures that involve conducting USFWS protocol-level surveys for nesting individuals as required by the MFO 2008 RMP would be conducted for the project and proper mitigation measures would be implemented if nests were found (**Section 2.2.5**).

Additionally, the project location is approximately 7,920 feet (1.5 miles) from the closest MSO PAC, which is greater than the USFWS guidance of limiting activity within 0.5 miles of a known PAC during breeding season (March 1 to August 31) (USFWS 2015c). Therefore, construction noise and visual disturbances is not expected to impact known nesting individuals.

As previously indicated, Canyon Rims SRMA visitation is expected to increase over time at a rate of approximate 3.1 percent with or without the implementation of this project. The Needles Overlook Road is already paved; repaving the road is not expected to increase visitation or change road use. Currently, the Anticline Overlook which is accessible by a gravel road only, receives approximately 10 percent of the visitation that the Needles Overlook receives. Likewise, the Hatch Point Campground (gravel road access only) receives approximately 17 percent of the use that the Windwhistle Campground (paved road access) receives. The lower use of the Anticline Overlook and the Hatch Point Campground is partially due to gravel road access combined with the considerable distance from the main highway. With the conversion of the Anticline Overlook Road from gravel to a paved surface, there is potential for expanded use of the Anticline Overlook Road. This expanded visitor use could result additional vehicle traffic on the road to the Anticline Overlook, as well as some increase in use of the Hatch Point Campground. Though expanded use could have the potential to reach levels similar to what is seen on the now paved Needles Overlook Road, it is not expected, due to the

additional distance to the Anticline Overlook. Most tourists that visit this area are on day trips and the additional travel required to access the Anticline Overlook may not be attractive to many visitors.

Potential expanded visitor use on the Anticline Overlook Road may result in noise levels changing. Noise levels can range from "natural ambient" (<50 decibels [dB]) to "very low" (51–60 dB) (USFWS 2006) and vehicle noise levels range from moderate levels of 71-80 dB (passenger vehicles and street-legal motorcycles) to high levels of 81-90 dB (high speed highway traffic including RVs, large trucks and buses) (USFWS 2006). Although the ambient noise levels within the baseline survey area have not been measured, it is assumed to be in the range of "natural ambient" (<50 decibels [dB]) to "very low" (51–60 dB) unless vehicles are traveling on the gravel road. Noise levels from vehicle travel may reach moderate levels of 71-80 dB (passenger vehicles and street-legal motorcycles). Levels of 81-90 dB (high speed highway traffic including RVs, large trucks and buses) are not anticipated due to speed and weight restrictions. Vehicles currently traveling on the Needles Overlook Road would likely be closer to moderate levels because of the low speed limit and type of vehicle whereas, paving of the Anticline Overlook Road is not expected to increase noise levels above the current 'moderate levels' of vehicle noise. Paving this road may increase the occurrence frequency of vehicle noise as visitor use expands. Likewise, noise levels at the Hatch campground would remain relatively the same but the frequency of noise may increase as the campground experiences additional use.

Noise levels from road-maintenance equipment (rock crusher, loader, bulldozer/roller and grader) were evaluated in mixed-conifer forests to evaluate potential impacts to MSO. Results found that sound levels were greater in trees than on the ground at all distances, sound levels decreased with distance, and sound levels were greater in meadows than in forests at comparable distances. MSOs may able to hear all sound sources tested at distances of 1,312 feet (0.25 miles) or less (Delaney & Grubb 2004). Additionally MSO seem to be flushed by noise with lower frequency range. For instance, MSO were flushed by chainsaw noise (≤46 dB) which were much lower than helicopter noise levels that flushed owls (≥92 dB) (Delaney et al. 1999b). Based on studies mentioned above, noise from "moderate" vehicular traffic near suitable MSO habitat would travel less through the pinyon-juniper woodlands where foraging habitat exists.

Noise level from traffic are predicted to be less than 80 decibels and would be expected to dissipate to below 45 decibels within 150 feet; resulting in less than 15 acres of nesting habitat that may continue to be impacted by levels of noise above 45 decibels but at a more frequent rate. The three areas along the Anticline Overlook Road where this would occur would be at the Anticline Overlook, the Dripping Spring Overlook and the head of a side canyon just south of Dripping Spring. These areas represent less than 0.5 percent of the breeding habitat within 0.5 miles of the Project Area. Increases in noise frequency in these limited areas are expected to be negligible due to the overall availability of suitable habitats for potential MSO dispersal and nesting.

In addition to noise, visual disturbance from potential expanded visitor use of the Anticline Overlook Road may occur. Visual impacts are reported to be more influential than auditory disturbances to raptor species (USFWS 2004). Research indicates that the

majority of MSO become alerted by hikers at 180 ft. and flush when individuals approach 79 to 39 feet. Based on studies mentioned, visual disturbance from vehicles would potentially impact foraging MSO present near the Anticline Overlook Road if nesting was to occur within 0.5 miles of the road. No known nesting MSOs are present near the project and the closest PAC is approximately (1.5 miles) from the project. Therefore, visual disturbance would not impact nesting individuals. Less than 0.5 percent of the breeding habitat within the Project Area is less than 200 feet from the road. Increases in visual disturbance in these limited areas is expected to be negligible to the overall availability of suitable habitats for potential MSO dispersal and nesting.

Dispersed uses include vehicle use that did not travel to any of the developed recreational areas (overlooks or campgrounds) in the area. This use would include any travel related to grazing, ranching, oil, gas and mineral activities, property and home owners, federal, state and county employees, sightseeing, four wheeling and ATV use to name a few activities. Though dispersed use currently is less after the intersection of the now graveled road, dispersed use by most of the mentioned users is not expected to change as a result of paving, as gravel roads do not interfere with most of these uses. With the exception, possibly of the causal sightseers not traveling to recreational area unwilling to travel graveled roads, who may now readily drive on the paved road. These causal sightseers are not expected to venture far from the newly paved road; those impacts from these users are captured in the above discussion on noise emission and visual disturbances.

A smaller number of visitors enjoy a semi-primitive motorized experience by touring the backcountry by four-wheel drive and OHVs and occasionally these visitors may camp. Backcountry vehicle touring and camping occurs along the extensive system of 335 miles of unpaved routes originally created by the oil and gas and livestock industries (BLM 2002). The Anticline Overlook Road provides exclusive access to approximately 122 miles of these unpaved routes. The conversion of the Anticline Overlook Road from gravel to a paved surface would make these roads easier to access but it is not expected that the gravel road currently deters these backcountry visitors from seeking out and exploring semi-primitive motorized areas. Therefore, paving the Anticline Overlook Road is not expected to result in measureable expansion of backcountry touring and camping in the vicinity of the now graveled Anticline Overlook Road.

Hiking occurs on two developed hiking trails: the Windwhistle Nature Trail and the Trough Springs Hiking Trail, which are accessed from the Needles Overlook Road. The Hatch Wash Canyon system to the north of the SRMA is accessed by hikers and backpackers seeking remote recreation experiences (BLM, 2002). This area can be accessed from side roads that originate from Highway 191 or from the Anticline Overlook Road. These roads that provide access to the Hatch Wash Canyon system and other remote areas are difficult to travel on with most requiring 4WD vehicles and demand fairly lengthy travel times. The conversion of the Anticline Overlook Road from gravel to pavement would make these side roads easier to access initially, but due to the lengthy travel time and the difficulty of traveling on these road, it is not expected that there would be an increase in backcountry use because user would still need 4WD vehicles to travel on these access roads Therefore paving the Anticline Overlook Road is not expected to result in a measureable expansion of use by hikers and backpackers seeking

remote recreation experiences in the Hatch Wash Canyon system or other remote areas accessible from the Anticline Overlook Road.

An increase in visitation to the area and a subsequent increase in traffic as a result of the project is not predicted to occur. The Needles Overlook Road is already paved, and repaving the road is not expected to increase visitation. Increased visitor use of the Anticline Overlook Road as a result of paving could increase noise and visual disturbances, and subsequently disturb foraging MSO that use the area. No known nesting MSOs are present near the project and the closest PAC is approximately 7,920 ft. (1.5 miles) from the project and therefore, visual and noise disturbance would not impact nesting individuals. The long-term indirect effects to MSO and their habitats are considered to be negligible.

Issue: Mexican Spotted Owl Critical Habitat

A total of 63 acres of designated Critical Habitat would be disturbed as a result of the Proposed Action Alternative, including 45 acres of temporary and 18 acres of permanent disturbance. However, this area does not possess any habitat attributes that would provide physical and biological features necessary for MSO occupancy or use. Disturbance would be limited to ground disturbance within the existing roadway prism and some vegetation removal adjacent to the roadway prism. Tree and shrub areas removed are directly adjacent to the roadway and are unlikely to be used frequently by MSO and are considered low-quality foraging habitat. Considering the amount of Critical Habitat available in the Canyon Rims SRMA (40,381 acres), the removal of 63 acres (0.15 percent) of low quality habitat, impacts are negligible. Within 0.5 miles of the survey area, a total of 6,061 acres of Critical Habitat exists, resulting in a disturbance of one percent of the available Critical Habitat within 0.5 miles of the project. Additionally, habitat present close to the roadway may increase the risk of MSO and vehicular traffic accidents. Therefore, the removal of this habitat could potentially lower the chances of MSO being struck by vehicles.

Elements necessary for MSO survival that are considered when establishing Critical Habitat would not be impacted by the Proposed Action Alternative. Therefore, Critical Habitat would not be disturbed as a result of the Proposed Action Alternative. Therefore, the project would *not result in the destruction or adverse modification* of MSO Critical Habitat.

4.3.1.6 Utah BLM Sensitive Species

Burrowing Owl

The Moab 2008 RMP precludes surface disturbing activities within 0.25 miles of burrowing owls nests during the nesting season. The Project Area offer suitable nesting habitats, therefore, to ensure this 0.25 miles spatial buffer is maintained, breeding season surveys would need to be performed prior to any construction occurring during the nesting season (**Section 2.2.5.7**). If nesting owls are detected the action would be delayed until outside the nesting season (March 1 to August 15) therefore direct impacts to nesting burrowing owls are predicted to be negligible.

Migrant and non-breeding burrowing owls that are present in Utah, outside of the breeding season, would not be impacted by construction activity associated with the Proposed

Action Alternative as they could readily move to other suitable habitats within the area. With Environmental Protection Measures in place, it is expected the Proposed Action Alternative would have no effect to nesting burrowing owl.

Kit Fox

The Moab 2008 RMP precludes surface disturbing activities within 200 meters of an occupied natal den during the pupping season. The Project Area offer suitable kit fox habitats therefore to ensure this spatial buffer is maintained, breeding season surveys (**Section 2.2.5.7**) would need to be performed prior to any construction occurring during the pupping season within in suitable habitats located with approximately 200 meters of construction activities. If active natal kit fox dens are detected within 200 meters of construction activity the action would be delayed until outside the pupping season (March 1 to July 31) therefore direct impacts to occupied natal den and kit fox pups are predicted to be negligible.

Direct and indirect effects to kit fox could occur due to the Proposed Action Alternative. This species was not confirmed to be present near the Project Area, however, suitable habitat exists and several large mammal burrows were identified near and within the Project Area during baseline field surveys. Therefore, a possibility exists that the species is present within and near the Project Area. Direct impacts would include the temporary removal of 129 acres and permanent removal of 57 acres of vegetation within that could provide habitat for the species. Also, direct impacts to kit fox could include direct harm to young and adults in the area from the presence of construction equipment. However, RMP stipulation mitigation measures and Environmental Protection Measures would be implemented to avoid direct harm to the species.

Additionally, direct effects to individuals nearby could occur from noise and visual disturbance temporarily due to the presence of workers and equipment during construction activities. Construction activity would be especially harmful if done during pupping season from January to March. Activity could also temporarily deter individuals from using the Project Area as foraging habitat or denning habitat. Long-term noise and visual disturbances may increase along the Anticline Overlook road, as the improvements (paving) to this road may result in expanded use by visitors to this area. However, overall use of the Canyon Rims SRMA area is not expected to increase due to the road improvements. Visitation numbers have historically increased by approximately 3.1 percent per year (BLM, 2016) and this trend is expected to continue even without the road improvements.

Indirect long-term effects could occur due to the permanent removal of existing habitat. Habitat quality would be lowered following completion of the Project due to the removal of 57 acres of vegetation from the installation of permanent structures. However, habitat adjacent to the roadway is of low-quality and removal of vegetation in these areas are unlikely to impact kit fox. Additionally, not all 57 acres of permanent vegetation removal is in areas that provide habitat for kit fox, so potential impacts are a conservative estimate.

In summary, direct impacts could occur to adult kit fox from the direct harm to individuals and noise and visual disturbances during construction. It is therefore predicted that if kit

fox are present near the Project Area they could incur some minor impacts as a result of the Proposed Action Alternative.

Gunnison's Prairie Dog

Direct and indirect effects to Gunnison's prairie dog could occur due to the Proposed Action Alternative. Direct impacts could include the temporary removal of 129 acres and permanent removal of 57 acres of vegetation that could provide habitat for the species. However, it is not expected that all of the permanent and temporary removal areas would provide high quality habitat for the species, so the actual amount of habitat removed would be a fraction of the total vegetation removal. Outside of breeding season, construction could directly impact individual Gunnison's prairie dogs that reside or move into construction zones. However, these individuals could readily move into nearby suitable habitats to avoid construction activities. In addition, the construction activity (equipment and personnel) would likely result in Gunnison's prairie dog avoiding the area.

Construction activities commencing at the start or just after the pupping season begins, when female prairie dogs are tied to their dens for birth and pup rearing, would have the greatest impacts to resident colonies. Construction activities directly over a burrow could collapse dens and tunnels. If these dens are occupied by pups, direct mortality may result to less mobile pups and the adult females that may be nursing pups. Older pups may be able to vacate the burrow but would be susceptible to predation and exposure. This mortality is expected to be limited to occupied dens within the construction zone only. If prairie dogs are present within the Project Area, vehicle movement and equipment operation may cause direct mortality of some individuals.

Direct effects to nearby active colonies could still occur from noise and visual disturbance temporarily due to the presence of workers and construction equipment during construction activities. This activity could temporarily deter individual Gunnison's prairie dogs from using the Project Area as habitat. Long-term noise and visual disturbances are not anticipated, as construction activity would be temporary and the improvements are not expected to attract more visitors or increase traffic.

Indirect long-term effects could occur due to the permanent removal of existing habitat. Habitat quality would be lowered following completion of the project due to the permanent removal of 57 acres of vegetation from the installation of permanent structures near the active Gunnison's prairie dog colony. However, habitat adjacent to the roadway is of low-quality, and the surrounding areas provide better habitat, thus and removal of these areas are unlikely to impact Gunnison's prairie dog.

In summary, direct impacts could occur to Gunnison's prairie dogs from the direct harm to individuals and from noise and visual disturbances during construction. Ample habitat exists in the vicinity of the Project Area, and individuals present can readily relocate to new habitat areas. It is therefore predicted that Gunnison's prairie dogs could incur some minor impacts as a result of the Proposed Action Alternative.

BLM Sensitive Plants

Impacts to BLM sensitive plant species are not expected. Habitat for Isley milkvetch, Canyonlands lomatium, entrada pinkrush, and psoralea globemallow is present near and within small portions of the Project Area. However, no individuals were found during surveys, and habitat quality within the Project Area is poor. The majority of non-paved or gravel areas within the Project Area consist of previously disturbed soils adjacent to the roadway. Most of these areas contained little to no vegetation, or non-native species such as cheatgrass (*Bromus tectorum*). The likelihood of any sensitive plant species occurring within the Project Areas is very small. It is therefore predicted that the project would not impact BLM sensitive plant species.

4.3.1.7 Visual Resources

The Proposed Action Alternative would result in the introduction of several permanent structural elements that are visually similar to existing man-made conditions and landscape character (i.e. a modified landscape with varying levels of transportation infrastructure). Contrast associated with the Proposed Action Alternative would be low and would not attract the attention of the casual observer. Long-term visual effects would result from the introduction of the new pavement along Anticline Overlook Road and temporary cleared vegetation along the shoulders of the roadway alignment. The new signage along the roadway could also contrast in form and color with the surrounding landscape. However, the small size of the signage would likely result in moderate to weak contrast for motorists and road cyclists traveling along both Anticline and Needles Overlook Roads.

For views from identified KOPs, along the existing unpaved Anticline Overlook roadway, the proposed asphalt pavement and additional signage would be similar to those of existing roadway features located along the existing Anticline Overlook Road in form and texture. However, these new features would be distinguishable in the foreground, middle ground, and backgrounds views, but would be expected as the roadway is an existing disturbance within these views. Further, the new roadway would be subordinate to these existing features and contrast would be very weak to none since the asphalt pavement would consist of colors to those found in the existing area and no VOG sealant would be used on the roadway. The Proposed Action Alternative would provide beneficial impacts to this roadway by eliminating the airborne dust along the roadway from vehicular traffic.

For views from KOP-5 and KOP-6, along the existing paved Needles Overlook roadway, the proposed chip-seal and signage improvements would have negligible visual impacts to the existing form, color, and texture along this roadway since the existing roadway is paved and has similar infrastructure throughout this segment of the Project Area.

Visual effects associated with the Proposed Action Alternative are anticipated to be minor for alignment and designated KOPs along Anticline and Needles Overlook Roads.

Project mitigation measures would also reduce potential visual resources effects. For these reasons, long-term visual effects associated with Proposed Action Alternative would be low for views from the ROW, designated KOPs, and throughout the project study area.

The temporary construction activities and related infrastructure would be consistent with VRM Class II designation and would result in a negligible adverse effect.

Temporary visual effects would occur during construction of the Proposed Action Alternative and would likely consist of views of construction equipment and material storage at staging areas. Some temporary ground disturbance may occur as a result of construction activities near the "Y" intersection. Visual contrast resulting from temporary construction activities is anticipated to be moderate to weak.

4.3.1.8 Wildlife Species (Excluding USFW Designated Species)

Pronghorn Antelope

All of the Project Area overlaps with year-round habitat for the species, therefore direct and indirect effects to pronghorn antelope could occur due to the Proposed Action Alternative. The Proposed Action Alternative is not anticipated to increase traffic along the Needles Overlook Road, therefore no increased risk of pronghorn collisions with vehicles would occur. Paving the Anticline Overlook Road would allow for expanded visitor use that may lead to increased traffic along this road. This additional use may increase the potential for pronghorn collisions. Therefore paving the Anticline Overlook Road may lead to a minor increase in the rate of pronghorn injury or mortality. However, the current speed limits would be maintained and signage warning visitors of the presence of pronghorn crossing would be integrated into the project in order to help prevent collisions.

Direct effects to individuals nearby occur from noise and visual disturbance temporarily due to the presence of workers and equipment during construction activities. This activity could temporarily deter individual pronghorn from using the Project Area as habitat. Long-term noise and visual disturbances from construction activities are not predicted to occur, as construction would be completed within one season and the improvements are not anticipated to attract more visitors or increase traffic.

Indirect long-term effects from permanent removal of existing habitat are unlikely to occur. Available habitat would be lowered following completion of the project due to the removal of 57 acres of vegetation from the installation of permanent structures. However, habitat adjacent to the roadway is of low-quality and removal of these areas are unlikely to impact pronghorn.

Indirect long-term effects from noise and visual disturbances may impact pronghorn habitat in the vicinity of the Project Area. As previously indicated, Canyon Rims SRMA visitation is expected to increase over time at a rate of approximate 3.1 percent with or without the implementation of this project. The Needles Overlook Road is already paved; repaving the Needles Overlook Road is not expected to increase visitation or change road use. Expanded visitor use of the Anticline Overlook Road as a result of paving could increase the frequency of noise and visual disturbances along the road, in the campgrounds and at the Anticline Overlook as discussed in the MSO Section. In a study by Gavins and Komers (2006), pronghorn behavior in relationship to traffic levels on roads was assessed. They found that pronghorns showed great vigilant and foraged less in habitat containing high traffic level roads (>200 vehicles/week) verse low traffic level road (15

vehicles/week). As the frequency of road traffic and human activities along the Anticline Overlock road increases, pronghorn residing in the area may experience increased vigilance and forage less, resulted in increased stress, especially during the fawning season.

As discussed in the Recreation and MSO sections, paving the Anticline Overlook Road is not expected to result in a measureable expansion of use by hikers and backpackers due to the difficult 4WD roads and lengthy travel times that would still be required to access the backcountry, whether or not the Anticline Overlook road is paved. Visitors touring and camping in the backcountry by four-wheel drive and OHVs are not deterred by gravel roads and dispersed use by most users occurs readily on gravel roads, therefore paving the Anticline Overlook Road is not expected to result in measureable expansion of backcountry touring, camping or dispersed use in yearlong pronghorn habitat.

In summary, direct and indirect impacts to pronghorn antelope would occur from construction activities, vegetation removal, and the construction of permanent project features. Increased risk of pronghorn injuries and mortalities could indirectly occur as a result of paving the Anticline Overlook Road. Habitat removal impacts are unlikely to occur as the habitat adjacent to the roadway is low-quality. Some noise and visual disturbance would occur due to the presence of people and construction equipment.

Indirect long-term effects from increased frequency of noise and visual disturbances along the Anticline Overlook Road may increase increases stress on pronghorn residing in the area, especially during the fawning season.

4.3.2 Alternative B – No Action

4.3.2.1 Cultural Resources

Under the no action alternative the Proposed Action Alternative would not be approved. This alternative would maintain the current cultural resources.

4.3.2.2 Livestock Grazing

The No Action Alternative would not impact current livestock grazing practices.

4.3.2.3 Migratory Birds

Under the no action alternative the Proposed Action Alternative would not be approved. This alternative would maintain the current amount of habitat available for migratory birds and would not increase the existing risk of direct harm to migratory birds. Additionally, no temporary effects would occur from the no action alternative, such as vegetation removal and noise and visual disturbances.

4.3.2.4 Recreation

The No Action Alternative would not include surface roadway improvements. Access to public lands within Canyon Rims SRMA would remain the same, and over time the existing roadway conditions would continue to deteriorate, thus requiring increasing maintenance. Ongoing maintenance practices would continue resulting in increased costs,

safety concerns, and poor drainage within the Project Area. The No Action Alternative would not improve safety or road conditions for cyclists. Backcountry visitors may not have to contend with increased visitation due to road improvements.

4.3.2.5 Threatened, Endangered, or Candidate Animal Species

4.3.2.5.1 Mexican Spotted Owl

Under the no action alternative the Proposed Action Alternative would not be approved. This alternative would maintain the current amount of habitat available for MSO. Additionally, no temporary effects would occur from the no action alternative, such as vegetation removal and noise and visual disturbances.

4.3.2.6 Utah BLM Sensitive Species

4.3.2.6.1 Burrowing Owl

Under the no action alternative the Proposed Action Alternative would not be approved. This alternative would not be any different than the Proposed Action Alternative for impacts to burrowing owl.

4.3.2.6.2 Kit Fox

Under the no action alternative the Proposed Action Alternative would not be approved. This alternative would maintain the current amount of habitat available for kit fox and would not increase the existing risk of direct harm to kit fox. Additionally, no temporary effects would occur from the no action alternative, such as vegetation removal and noise and visual disturbances.

4.3.2.6.3 Gunnison's Prairie Dog

Under the no action alternative the Proposed Action Alternative would not be approved. This alternative would maintain the current amount of habitat available for Gunnison's prairie dogs and would not increase the existing risk of direct harm to Gunnison's prairie dogs. Additionally, no temporary effects would occur from the no action alternative, such as vegetation removal and noise and visual disturbances.

4.3.2.6.4 BLM Sensitive Plants

Under the no action alternative the Proposed Action Alternative would not be approved. This would not be any different than the Proposed Action Alternative for impacts to BLM sensitive plants.

4.3.2.7 Visual Resources

Under the no action alternative, the Proposed Action Alternative would not be approved. As a result, there would be no change in the visual setting at or within the Project Area.

4.3.2.8 Wildlife Species (Excluding USFW Designated Species)

4.3.2.9 Pronghorn Antelope

Under the no action alternative the Proposed Action Alternative would not be approved. This alternative would maintain the current amount of habitat available for pronghorn and would not increase the existing risk of direct harm to pronghorn. Additionally, no temporary effects would occur from the no action alternative, such as vegetation removal and noise and visual disturbances.

4.4 CUMULATIVE IMPACTS ANALYSIS

"Cumulative impacts" are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

4.4.1 Cumulative Impact Area (CIA)

The Cumulative Impact Area (CIA) for all resources consists of 101,531 acres within Canyon Rims SRMA. This cumulative impact analysis assumes a 15 year time frame. Surface disturbance within Canyon Rims SRMA is associated with oil and gas exploration drilling, and recreation activities. The cumulative impacts to a particular resource is analyzed in relation to past, current, and reasonably foreseeable projects such as oil and gas exploration.

4.4.2 Past and Present Actions

Surface disturbance and increasing human activity levels within the CIA are associated with range improvements for livestock grazing, recreation; potash exploration on state land; existing oil and gas facilities; and geophysical exploration.

Livestock grazing has taken place in the MFO planning area for more than a century. Both cattle and sheep have grazed on three allotments within the Project Area. The BLM MFO estimates a total of 120 range improvements have occurred within the Canyon Rims SRMA (BLM, 2015d). These range improvements include infrastructure installations, such as stock troughs, cow camps, stock ponds, and corrals for an estimated surface disturbance area of 50 acres (BLM, 2015d).

The Canyon Rims SRMA area experiences low to moderate recreational use. Historical use for the area has reached or exceeded 20,000 vehicles annually; based on historical visitation data, annual increases in visitation is expected to increase by approximately 3.1 percent annually (BLM, 2016). In 2009, the area received 82,500 vehicle trips (BLM, 2015d). Primary access to the Canyon Rims SRMA is provided by Needles Overlook Road, a two-lane paved roadway. Other major routes within the SRMA include Anticline Overlook Road, Eight-mile Rock Road, and Looking Glass Road, which are unpaved

roadways. The SRMA also has numerous additional designated unpaved roads. All of the roads within the SRMA represent approximately 1,710 acres of existing surface disturbance (BLM, 2015d).

Canyon Rims SRMA also contains nine recreational facilities including one entrance station, two developed campgrounds, four developed overlooks, and two trailheads/trails. The surface disturbance associated with these facilities totals approximately 40 acres.

Potash exploration involves drilling in an attempt to identify economically recoverable mineral deposits. In 2012, three potash exploration holes were drilled on three state-owned land sections within the Canyon Rims SRMA. These exploration holes and associated disturbance have been reclaimed.

Past oil and gas exploration has involved the drilling of 23 wells within the Canyon Rims SRMA. Ten of those wells have been plugged and abandoned and the disturbed areas have been reclaimed, resulting in approximately 100 acres of unreclaimed surface disturbance (BLM, 2015d).

In addition to oil and gas exploration, a geophysical seismic exploration project was completed in 2014; the lines for this project have been reclaimed (BLM, 2015d).

Table 4.1 summarizes the known past and present activities that have occurred within the CIA, including the estimated surface disturbance acreage associated with each activity. As shown in **Table 4.1**, past and present actions account for approximately 1,929 acres (1.9percent) of surface disturbance within the CIA, with the majority of the disturbance being attributed to transportation access infrastructure and recreational amenities.

Table 4.1. Past and Present Actions within the CIA

Past and Present Actions	Description	Estimated Acres of Surface Disturbance
Livestock Grazing	3 livestock grazing allotments, various infrastructure in each allotment 120 range improvements	50
Recreational Facilities	9 developed recreational facilities	40
Existing Roadways	Numerous existing paved and unpaved roads, all remain	1,710
Potash Exploration	3 potash holes drilled, partially reclaimed	15
Oil and Gas Exploration	13 active wells	100
Geophysical Exploration	1 exploration, since reclaimed	0
Total		**1,915 (1.9%)**
Total Area of Canyon Rims SRMA		**101,531 acres**

Source: (BLM, 2015d)

4.4.3 Reasonably Foreseeable Action and Scenario

Reasonably Foreseeable Action and Scenario (RFAS) includes those actions that are known or could reasonably be anticipated to occur within the CIA and within a time frame (15 years) that is appropriate to the expected impacts of the Proposed Action Alternative and No Action Alternative. The RFASs that would cumulatively affect the same resources in the CIA as the Proposed Action Alternative and No Action Alternative include: seven

Applications for Permit to Drill (APD) for oil and gas exploration, future oil and gas exploration, and potential future geophysical explorations.

The proposed seven APD applications are currently undergoing analysis in a separate EA; the project is in the alternative development phase (BLM, 2015e). At this time the proposed project would involve the construction of seven new well pads and access roads, located approximately 12 miles southwest of Moab, Utah (BLM, 2015f). Each well pad could contain one to three well bores that may result in up to 21 oil and gas wells. One to three wells may be drilled over an 8-year period and the anticipated life a producing well is estimated to be 30 years (BLM, 2015f). The proposed surface disturbance associated with these applications is approximately 105 acres (BLM, 2015d).

The acreage projections for additional future oil and gas operations are based on the *2005 BLM's Reasonable Foreseeable Development Scenario (RFDS) for Oil and Gas* completed for the *2008 Draft Moab Field Planning Office RMP EIS*. The RFDS projected an average of 3 to 5 wells drilled annually in the Big Flat-Hatch Point (Canyon Rims) area over 15 years, for a total of approximately 45 to 75 wells (BLM, 2008). The RFDS projection includes the Big Flat area, which has experienced more interest in drilling due to favorable drilling results. Therefore, it is reasonable to assume that there would be an average of 1 to 2 wells drilled annually in the Canyon Rims SRMA for a total of 15 to 30 wells over the next 15 years (BLM, 2015d). The initial surface disturbance associated with this drilling would amount to approximately 225 to 450 acres (15 acres per well) for roads and drill pads (BLM, 2008). Also, it is assumed that 50 percent of the wells drilled would not be productive and would be abandoned and reclaimed and that revegetation would be successful within the years following reclamation activities. Therefore, approximately 17 percent (37.5 to 75 acres) of the initial surface disturbance resulting from drilling would be successfully reclaimed over the next 15 years.

Future disturbance limited to the Big Flat- Hatch Point area was not specifically quantified in the *2005 BLM's RFDS for Oil and Gas* for geophysical (seismic) exploratory surveys. However, it is reasonable to assume that two geophysical surveys would be conducted in the next 15 years that are comparable in size and scope to the survey conducted in 2012 (BLM, 2015d). For these geophysical surveys, it is assumed that reclamation would be completed within the 15-year time frame.

Table 4.2 summarizes the RFASs within the CIA, including the estimated surface disturbance acreage associated with each activity. As shown in **Table 4.2**, reasonably foreseeable actions are expected to account for approximately 555 acres (0.5 percent) of surface disturbance within the CIA, with the majority of the disturbance being attributed to oil and gas exploration.

Table 4.2. RFASs within the Cumulative Impact Analysis Area

Reasonably Foreseeable Actions	Estimated Acres of Surface Disturbance
Seven APDs/Oil and Gas Exploration	105
Future Exploration (not including reclamation)	225 to 450
Two Geophysical Surveys (including reclamation)	0
Total	**555 (0.5%)**
Total Area of Canyon Rims SRMA	**101,531 acres**

Source: (BLM, 2015d)

4.4.4 Cumulative Impact Analysis

4.4.4.1 Cultural Resources

The CIA for cultural resources is the Canyon Rims SRMA, which consists of 101,531 acres and includes all the transportation infrastructure and recreational facilities within the SRMA. Cumulative impacts to cultural resources within Canyon Rims SRMA, in addition to the proposed surface roadway improvements would be associated with ongoing livestock grazing and active and pending oil and gas leases, and other ongoing and reasonably foreseeable recreation activities that are known to occur and may occur in the future associated with cycling, hiking, and OHV use on existing paved and unpaved designated roads and travel routes. Oil and gas exploration activities could negatively affect cultural resources in Canyon Rims SRMA, as a result of ground disturbing activities associated with road building and disturbance associated with drilling. Current and reasonable foreseeable activities are expected to disturb approximately 2,670 acres over the next 15 years, which represents 2.6 percent of the Canyon Rims SRMA. Typically, projects are designed to avoid cultural resources and it is assumed that reasonable foreseeable activities would also avoid cultural resource impacts to the extent possible

Based on the limited number of current or reasonably foreseeable future actions planned and avoidance of cultural resources being implemented, cumulative effects on cultural resources from the Proposed Action Alternative is expected to be negligible.

4.4.4.2 Livestock Grazing

The CIA for livestock grazing consists of a combined boundary of the three livestock grazing allotments: Hatch Point, Windwhistle, and Mail Station. The proposed roadway improvements within Canyon Rims SRMA would traverse these three grazing allotments.

Cumulative impacts to livestock grazing generally result from activities that affect forage levels. Activities that would result in surface disturbance (e.g. mineral development, ROW construction, and recreation) or management activities that affect surface disturbance can also impact livestock grazing by affecting forage levels, which in turn could include the loss of AUMs for the life of the disturbance.

In the CIA area, past, present, and reasonably foreseeable activities include existing livestock grazing and the use of the existing recreational facilities and roadways; potash and oil and gas exploration, including seven proposed oil and gas APDs; and one recent geophysical exploration project. The incremental impacts of recreation activities are difficult to quantify. **Table 4.3** lists AUMs lost from past, present, and reasonably foreseeable projects, such as recreation activities, potash exploration, oil and gas development, and geophysical exploration that have occurred or would occur within the Project Area. The number of AUMs lost per alternative is based on information included in the *2008 Draft Moab Field Office RMP EIS*. Livestock impacts may also be outlined in the forthcoming *Fidelity Hatch Point 7-Pad Oil and Gas Project EA*. As shown in **Table 4.3,** no AUMs have been lost over the past 15 years within the Project Area.

Table 4.3. AUMs Lost from Past, Present, and Reasonable Projects in the Hatch Point, Windwhistle, and Mail Station Grazing Allotments

	Total Allotment AUMs	Past Action AUMs Lost[1]	RFD AUMs Lost[2]	AUMs Lost per Alternative	Total Reasonably Foreseeable AUMs Lost	% of Total Allotment AUMs Lost
Proposed Action Alternative	13,252	0	Pending	0	0	0%
No Project Alternative	13,252	0	Pending	0	0	0%

NOTES:

1 – Past Action AUMs Lost is based on the conclusions in the *2008 Draft Moab Field Office RMP EIS*. Table 4.34 in the Draft EIS notes the total AUMs of forage available and not available to livestock by each alternative; no AUMs were listed in the Big Flat-Hatch Point (Canyon Rims) area. The annual average disturbance acreage due to land use activities is less than 1% of the total planning area.

2 - RFD includes the Fidelity Hatch Point 7-Pad Oil and Gas Project. The project is undergoing the alternative development analysis at this time, and there is no quantified estimate on whether the Proposed Action Alternative would result in a loss of AUMs

In addition to past and potential future loss of AUMs under the Proposed Action Alternative, improved roads within the Project Area could cumulatively contribute to difficulties in controlling livestock as livestock may use roads as travel routes. Roadway improvements could also result in an additional, although temporary loss of vegetation (i.e. forage). Further, increased traffic and human activity in the Project Area could contribute to livestock displacement that is occurring throughout the Canyon Rims SRMA, as a result of recreational and other land uses activities (BLM, 2008). These past, present, and reasonably foreseeable activities, and other related visual and noise impacts in the Project Area could cause livestock to move to adjacent undisturbed areas or other allotments, thereby leading to minor, but increased long-term and cumulative impacts on livestock forage in those locations. However, no AUMs are expected to be lost due to the cumulative impacts of the Proposed Action Alternative.

Given overall recreation visitation is expected to increase over time in Canyon Rims SRMA with and without the roadway improvements, the No Action Alternative is expected to result in similar minor effects to livestock grazing.

4.4.4.3 Migratory Birds

The CIA for migratory bird species is the Canyon Rims SRMA, which consists of 101,531 acres and includes all areas which provide habitat for migratory birds. Cumulative impacts to these species within Canyon Rims SRMA, in addition to the proposed surface roadway improvements, would be associated with ongoing livestock grazing, active and pending oil and gas leases and potash exploration, and other ongoing and reasonably foreseeable recreation activities. These activities would result in approximately 2,670 acres of disturbance over the next 15 years, which represents 2.6 percent of the Canyon Rims SRMA. Based on the small percent of potential habitat loss, cumulative impacts to migratory birds would be negligible.

4.4.4.4 Recreation

The CIA for recreation resources is the Canyon Rims SRMA, which consists of 101,531 acres and includes all the transportation infrastructure and recreational facilities within the SRMA. Cumulative impacts to recreation resources within Canyon Rims SRMA, in addition to the proposed surface roadway improvements would be associated with ongoing livestock grazing and active and pending oil and gas leases, and other ongoing and reasonably foreseeable recreation activities that are known to occur and may occur in the future associated with cycling, hiking, and OHV use on existing paved and unpaved designated roads and travel routes. Oil and gas exploration activities could negatively affect recreation experiences in Canyon Rims SRMA, due to visual and noise impacts.

Overall recreation use is expected to increase within the MFO planning area as more people visit Moab to recreate. These additional users would increase visitation rates and use of the developed recreational amenities in the SRMA, as well as the non-mechanized use (hiking only) trails and use areas (i.e. Hatch Wash Canyon System). However, it is likely that a portion of these cyclists and hikers are already using the existing roadways and hiking trails in the area. Therefore, the cumulative effect on recreation resources is expected to be negligible.

4.4.4.5 Threatened, Endangered, or Candidate Animal Species

4.4.4.5.1 Mexican Spotted Owl

The CIA for MSO is the Canyon Rims SRMA, which consists of 101,531 acres and includes all areas which provide habitat for MSO within the SRMA. Cumulative impacts to MSO within Canyon Rims SRMA, in addition to the proposed surface roadway improvements, would be associated with other ongoing and reasonably foreseeable recreation activities. Ongoing livestock grazing is not expected to contribute to cumulative impacts to MSO. Habitat loss due to past, present and reasonably foreseeable activities is expected to reach 2,670 acres over the next 15 years, which represents approximately 2.6 percent of the Canyon Rims SRMA.

Oil and gas exploration, although a small portion of the overall area, could contribute to increased visual and noise disturbance, and direct harm to MSO from equipment and vehicles if conducted within the pinyon-juniper habitat.

Overall, the Proposed Action Alternative is not expected to increase overall recreational use of Canyon Rims SRMA. However, annual increases that have historically been observed are expected to continue resulting in an increase within the MFO planning area as more people visit Moab to recreate. These additional visitors may visit the Canyon Rims SRMA, thus increasing visitation rates and use of the developed recreational amenities in Canyon Rims SRMA, which are comprised of existing roadways, campgrounds, and hiking trails. The increased visitation would not decrease the availability of MSO habitat because no new developments are planned, but could increase noise and visual disturbances to MSOs using the Canyon Rims SRMA for foraging. Additionally, with increase traffic from visitors, direct harm to MSO could occur from increased risk of vehicle collisions.

4.4.4.6 Utah BLM Sensitive Species

4.4.4.6.1 Burrowing Owl, Kit Fox, and Gunnison's Prairie Dog

The CIA for BLM Sensitive Wildlife Species is the Canyon Rims SRMA, which consists of 101,531 acres and includes all areas which provide habitat for burrowing owl, kit fox, and Gunnison's prairie dog. Cumulative impacts to these species within Canyon Rims SRMA, in addition to the proposed surface roadway improvements, would be associated with ongoing livestock grazing, active and pending oil and gas leases and potash exploration, and other ongoing and reasonably foreseeable recreation activities. These activities would result in approximately 2,670 acres of lost vegetation which represents approximately 2.6 percent disturbance to the habitat with the Canyon Rims SRMA over the next 15 years. Based on this amount of disturbance, cumulative impacts to Utah BLM sensitive wildlife species are expected to be negligible.

Ongoing livestock grazing is unlikely to increase in the area, and therefore disturbance to Utah BLM sensitive wildlife species from existing cattle densities and presence are not expected. Oil and gas exploration and potash exploration, although a small portion of the overall area, could contribute to increased visual and noise disturbance, and direct harm to BLM sensitive wildlife species from equipment and vehicles.

Overall, the project is not expected to increase recreational use of Canyon Rims SRMA. However, visitation is expected to increase within the MFO planning area as more people visit Moab to recreate resulting in additional recreationists visiting Canyon Rims SRMA. These additional users would increase visitation rates and use of the developed recreational amenities in the SRMA, which are comprised of existing roadways, campgrounds, and hiking trails. The increased visitors would not decrease the availability of BLM sensitive wildlife species habitat because no new developments are planned, but could increase noise and visual disturbances. Additionally, with increase traffic from recreationalists, direct harm to Utah BLM sensitive wildlife species could occur from increased risk of vehicle collisions.

4.4.4.6.2 BLM Sensitive Plants

The CIA for BLM sensitive plant species is the Canyon Rims SRMA encompasses 101,531 acres and includes all areas which provide habitat for BLM sensitive plant species. Cumulative impacts to these species within Canyon Rims SRMA, in addition to the proposed surface roadway improvements, would be associated with ongoing livestock grazing, active and pending oil and gas leases, and potash exploration. It is predicted that ongoing and reasonably foreseeable recreation activities would not adversely impact BLM sensitive plant species. Approximately 2,670 acres of disturbance would occur from past, present, and reasonably foreseeable activities including the Proposal Action over the next 15 years. This represents approximately 2.6 percent of the Canyon Rims SRMA.

4.4.4.7 Visual Resources

Cumulative impacts to the landscape are resulting from the increases in recreation and tourism, vehicular travel, the increasing numbers of sightseers attracted to the area for its scenic qualities, oil and gas exploration, and potash exploration. These uses would have

the potential to contribute to cumulative effects on visual resources within the area, but with the implementation of the Proposed Action Alternative visual impacts from dust generated by vehicular travel would be reduced. Based on the limited number of current or reasonably foreseeable future actions planned, cumulative effects on visual resources from the Proposed Action Alternative would be minor.

4.4.4.8 Wildlife Species

4.4.4.8.1 Pronghorn Antelope

The CIA for pronghorn antelope is the Canyon Rims SRMA, which consists of 101,531 acres and includes all areas which provide habitat for pronghorn antelope within the SRMA. Cumulative impacts to these species within Canyon Rims SRMA, in addition to the proposed surface roadway improvements, would be associated with ongoing livestock grazing, active and pending oil and gas leases, and other ongoing and reasonably foreseeable recreation activities. These activities would result in approximately 2,670 acres of disturbance of the next 15 years, which represents 2.6 percent of the Canyon Rims SRMA. Based on the small percent of potential habitat loss, cumulative impacts to migratory birds would be negligible.

Oil and gas exploration, although a small portion of the overall area, could contribute to increased visual and noise disturbance, a decrease in forage available, and direct harm to pronghorn antelope from equipment and vehicles.

Overall, the project is not expected to increase recreational use of Canyon Rims SRMA. However, visitation is expected to increase within the MFO planning area as more people visit Moab to recreate. These additional users would increase visitation rates and use of the developed recreational amenities in the SRMA, which are comprised of existing roadways, campgrounds, and hiking trails in the area. The increased visitation from people would therefore not decrease the availability of pronghorn antelope habitat by introducing more development, but could increase noise and visual disturbances to species using the Canyon Rims SRMA for habitat. Additionally, with increase traffic from people, direct harm to pronghorn antelope could occur from increased risk of vehicle collisions.

5 CONSULTATION AND COORDINATION

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. The ID Team Checklist provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in **Sections 5.1 and 5.2**.

5.1 PERSONS, GROUPS, AND AGENCIES CONSULTED:

Table 5.1. List of all Persons, Agencies, and Organizations Consulted for Purposes Of this EA

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
U.S. Army Corps of Engineers	The project would require a permit from the Corps under authority of Section 404 of the Clean Water Act (33 USC 1251)	A request for an Approved Jurisdictional Determination (JD) was submitted to the U.S. Army Corps of Engineers (Corps) On April 21, 2016; this request is still being processed.
U.S. Fish and Wildlife Service	Information on Consultation, under Section 7 of the Endangered Species Act (16 USC 1531)	The Service concurred that the Proposed Action Alternative may affect, but would not adversely affect Mexican spotted owl on February 13, 2017.
Utah State Historic Preservation Office	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	SHPO has provided, by letter dated 16 November 2016, their concurrence of the determination of eligibility and effect for the project.
Pam Riddle (BLM Moab Field Office Wildlife Biologist)	Consulted for information regarding BLM sensitive wildlife species and Mexican spotted owl analysis.	Ms. Riddle provided a list of wildlife species to evaluate for the project. She also provided information about Mexican spotted owl habitat presence and GIS data of USFWS protocol survey locations and Mexican spotted owl locations near the Project Area.
David Williams (BLM Moab Field Office Botanist)	Consulted for information regarding BLM sensitive plant species.	Mr. Williams provided a list of plant species to evaluate for the project. He also provided information of what species were most likely to occur in the Project Area.
Shaula Headwall (USFWS Mexican Spotted Owl Recovery Team)	Consulted for information regarding appropriate buffers of Mexican spotted owl Protected Activity Centers.	Ms. Headwall indicated that Protected Activity Centers should be buffered by 0.25 miles during breeding season to eliminate any impacts to nesting Mexican spotted owls.
Pueblo of Hopi The Ute Indian Tribe Paiute Indian Tribe of Utah Pueblo of Zuni Navajo Nation Ute Mountain Ute Tribe Southern Ute Tribe Pueblo of Zia White Mesa Ute Council Pueblo of Acoma	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Response has been received from the Navajo Nation indicating the Navajo Nation has no concern. Further consultation is on-going.

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Pueblo of Laguna Pueblo of Santa Clara		

5.2 SUMMARY OF PUBLIC PARTICIPATION

During preparation of the EA, the public was notified of the Proposed Action Alternative by posting the project on the BLMs ePlanning website on October 5, 2015. A scoping period was announced on the ePlanning website and in local newspapers; it was held from October 5, 2015 to October 21, 2015. The BLM received two written responses during the scoping period. The comments and responses to comments are presented in Appendix B. Issues raised during the scoping period are detailed in **Section 1** of this document and were used in the preparation of the EA.

5.3 PUBLIC COMMENTS ON EA

(This section to be completed after public comment is held on the EA.

5.4 LIST OF PREPARERS

5.4.1 BLM

Name	Title	Responsible for the Following Section(s) of this Document
Kathleen Stevens	Outdoor Recreation Planner	Technical coordination and quality control, Recreation, Areas of Critical Environmental Concern, Wild and Scenic Rivers, Visual Resources
Bill Stevens	Outdoor Recreation Planner	BLM Natural Area, Socioeconomics, Lands with Wilderness Characteristics, Wilderness/WSA, Environmental Justice
Jared Lundell	Archaeologist	Cultural Resources, Native American Concerns
Pam Riddle	Wildlife Biologist	BLM sensitive species, Threatened and Endangered Species, Wildlife

5.4.2 Non-BLM Preparers (Amec Foster Wheeler Environment & Infrastructure, Inc.)

Name	Title	Responsible for the Following Section(s) of this Document
Richard Weber	Project Manager	Senior Review, Cultural Resources
Melissa Greulich	Biologist	Biological Resources, Threatened & Endangered Species, Wildlife
Bryan Morse	Environmental Planner	Technical Coordination & Quality Control, Visual Resource
Juliana Prosperi	Resource Lead	Grazing, Recreation, Cumulative Effects
Theresa Price	Biologist	Water Resources, Rare Plants
Serelle Laine	Archaeologist	Cultural Resources

6 REFERENCES, GLOSSARY AND ACRONYMS

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6.2 LIST OF ACRONYMS

AUM	Animal Unit Months
ACEC	Areas of Critical Environmental Concern
APE	Area of Potential Effect
AUMs	Animal unit months
BA	Biological Assessment
BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practice
CFLHD	Central Federal Lands Highway Division
CFR	Code of Federal Regulations
CH	Critical Habitat
CIA	Cumulative Impact Area
Corps	U.S. Army Corps of Engineers
DR	Decision Record
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ERMA	Extensive Recreation Management Area
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy Management Act
FLTP	Federal Lands Transportation Program
FONSI	Finding of No Significant Impact
IPAC	Information, Planning, and Conservation System
KOP	Key Observation Point
MFO	Monticello Field Office
MOU	Memorandum of Understanding
MSO	Mexican spotted owl
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
MBTA	Migratory Bird Treaty Act
MFO	Moab Field Office
MOU	Memorandum of Understanding
MSO	Mexican spotted owl
MtFO	Monticello Field Office
OHV	Off-Highway Vehicle
PAC	Protected Activity Center
PDP	Project Delivery Plan
RAR	Route Assessment Review
RAMP	Recreation Area Management Plan
RFDS	Reasonable Foreseeable Development Scenario
RMP	Resource Management Plan
ROS	Recreation Opportunity Spectrum

ROW	Right-of-way
SFRA	Sand Flats Recreation Area
SRMA	Special Recreation Management Area
UDOT	Utah Department of Transportation
UDWR	Utah Division of Wildlife Resources
UPIF	Utah Partners in Flight
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
VRI	Visual Resource Inventory
VRM	Visual Resource Management

APPENDICES

Appendix A. Figures

Figure 1. Overview Map, Project Area, and Wildlife Survey Area

Canyon Rims Road
Figure 1. Overview Map, Project Area, and Wildlife Survey Area.

DOI-BLM-Y010-2015-0249 EA
Bureau of Land Management
Moab Field Office

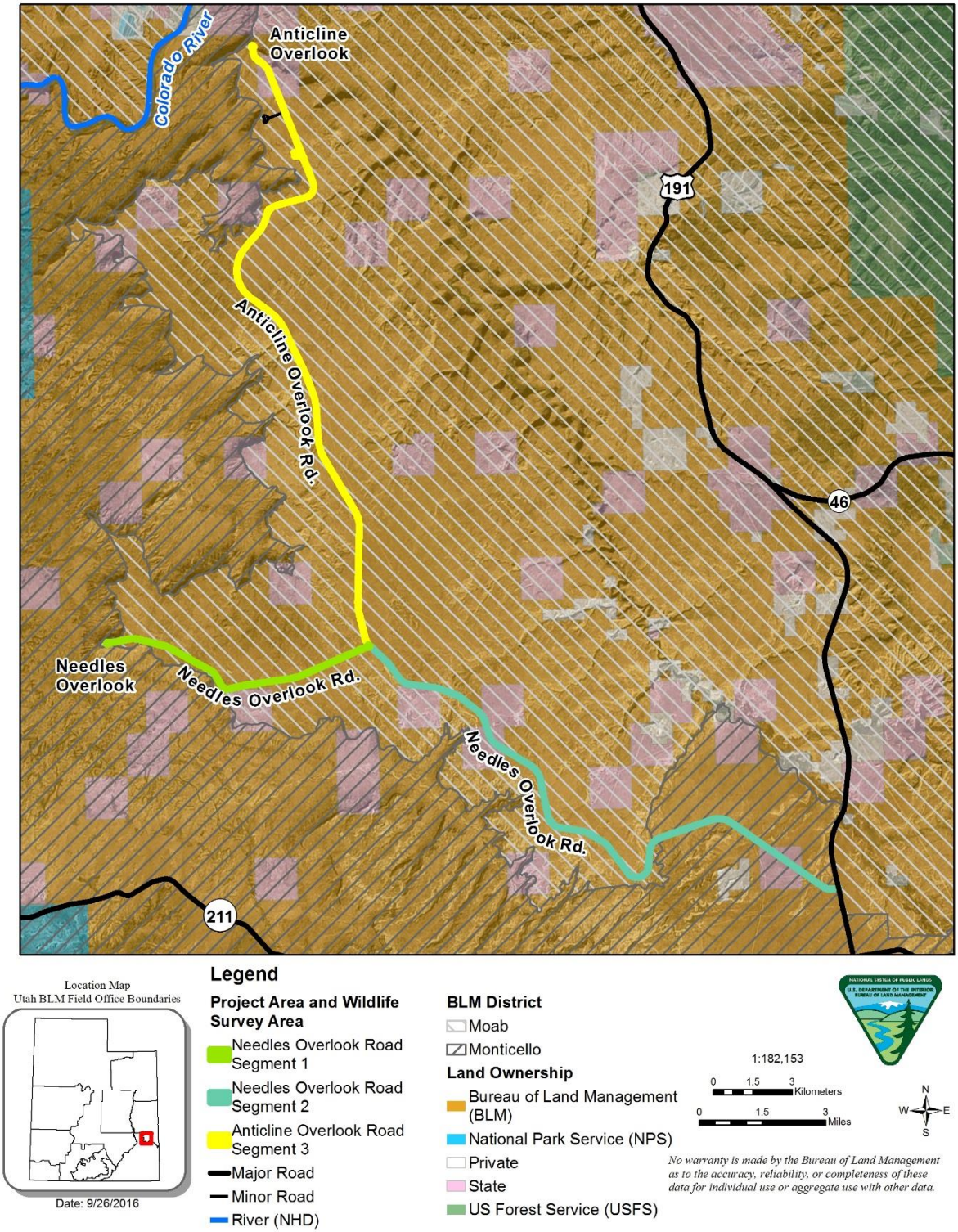
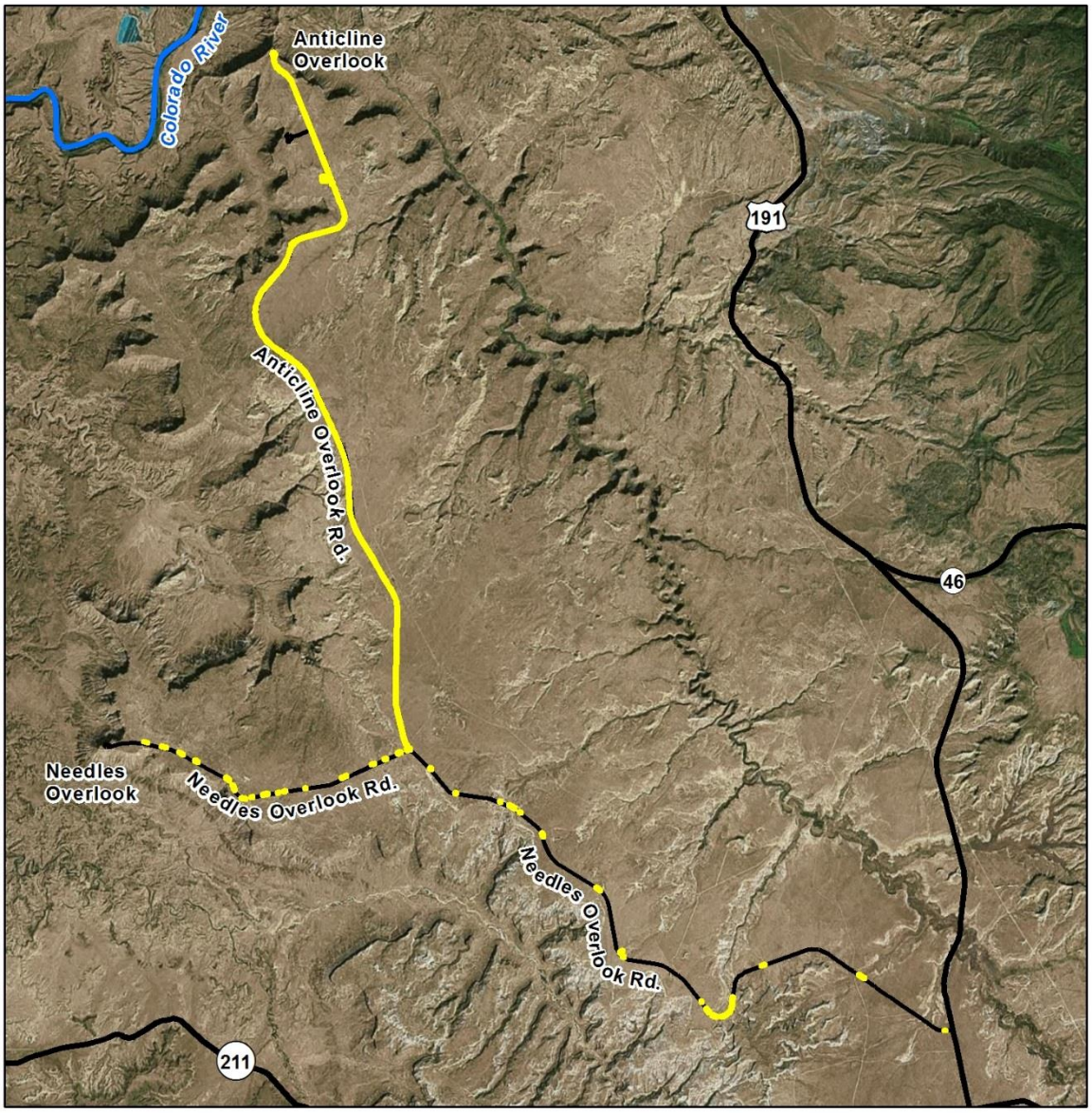


Figure 2. Permanent and Temporary Impact Areas and Survey Areas

Canyon Rims Road
Figure 2. Permanent and Temporary Impact Areas and Survey Areas

DOI-BLM-Y010-2015-0249 EA
Bureau of Land Management
Moab Field Office



Location Map
Utah BLM Field Office Boundaries

Date: 6/3/2016

Legend

Temporary and Permanent Impact Areas and Sensitive Plant, Cultural Resources, and Waters of the U.S. Survey Area

Major Road
Minor Road
River (NHD)

1:182,153

0 1.5 3 Kilometers

0 1.5 3 Miles

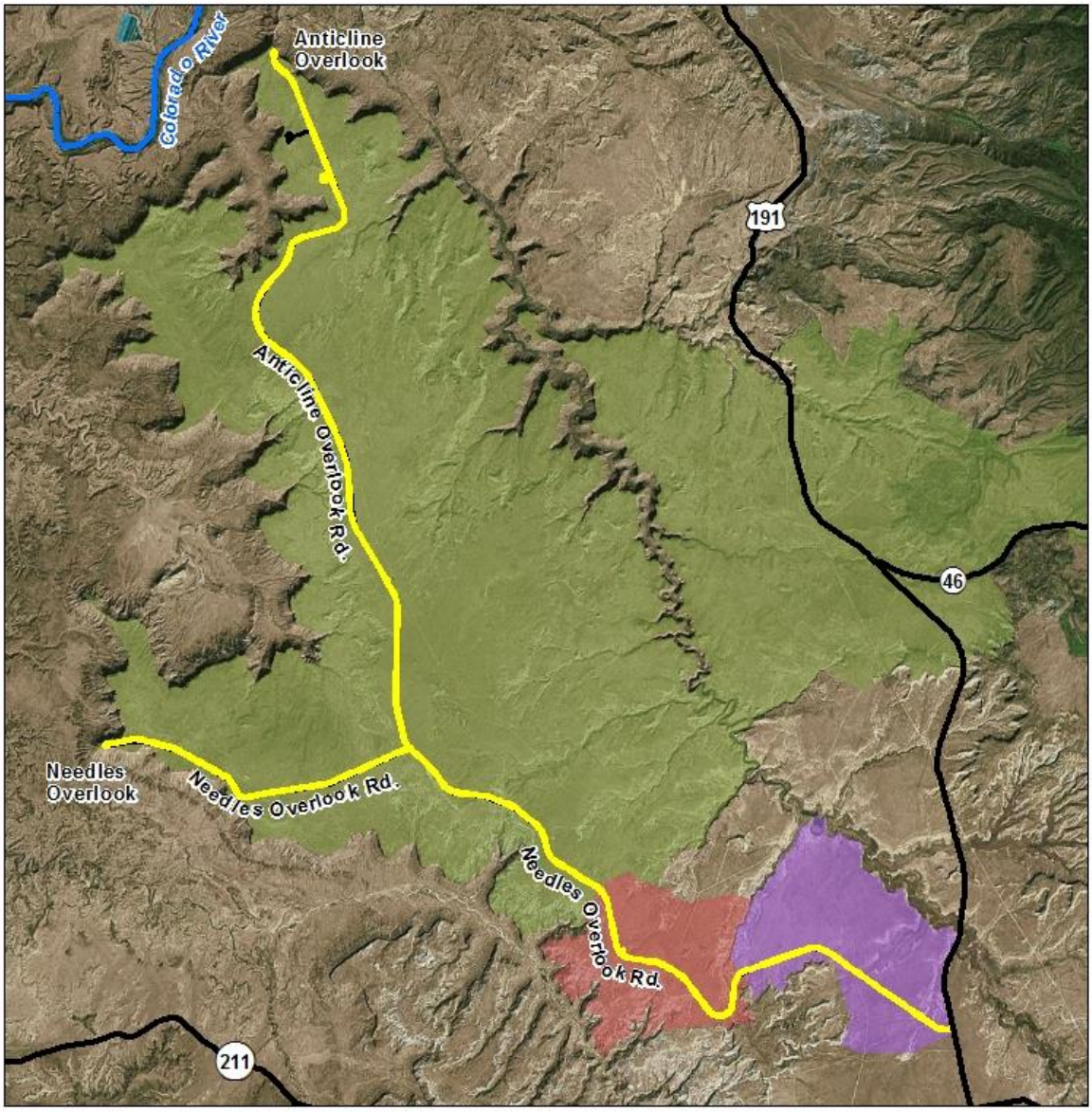
N W E S

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Figure 3. Livestock Grazing Allotments within the Canyon Rims SRMA

Canyon Rims Road
Figure 3. Livestock Grazing Allotments within Canyon Rims SRMA.

DOI-BLM-Y010-2015-0249 EA
Bureau of Land Management
Moab Field Office



Location Map
Utah BLM Field Office Boundaries

Date: 1/18/2017

Legend

- Project Area
- Major Road
- Minor Road
- River (NHD)

Grazing Allotment Name

- Hatch Point
- Mail Station
- Windwhistle

1:182,153

0 1.5 3 Kilometers

0 1.5 3 Miles

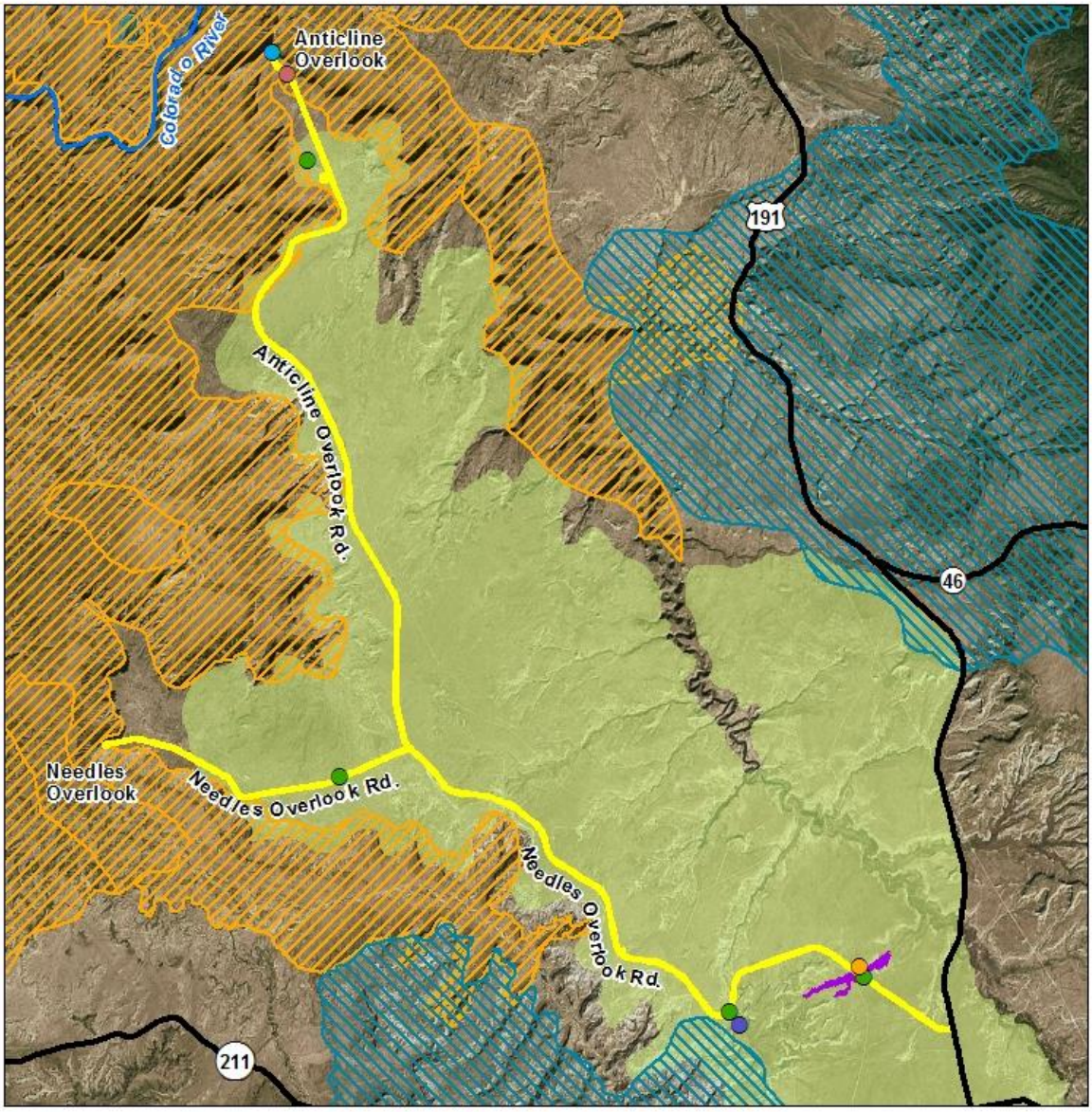
N W E S

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data

Figure 4. Wildlife Resources within the Canyon Rims SRMA

Canyon Rims Road
Figure 4. Wildlife Resources within the Canyon Rims SRMA.

DOI-BLM-Y010-2015-0249 EA
Bureau of Land Management
Moab Field Office



Location Map
Utah BLM Field Office Boundaries

Date: 1/18/2017

Legend

- Major Road
- NHD River
- Project Area
- Mule deer winter range
- Desert bighorn sheep year-long range
- Pronghorn antelope year-long range

Species

- Golden eagle
- Loggerhead shrike
- Peregrine falcon
- Pinyon jay
- Red-tailed hawk
- Gunnison's Prairie Dog Colony

1:182,153

0 1.5 3 Kilometers

0 1.5 3 Miles

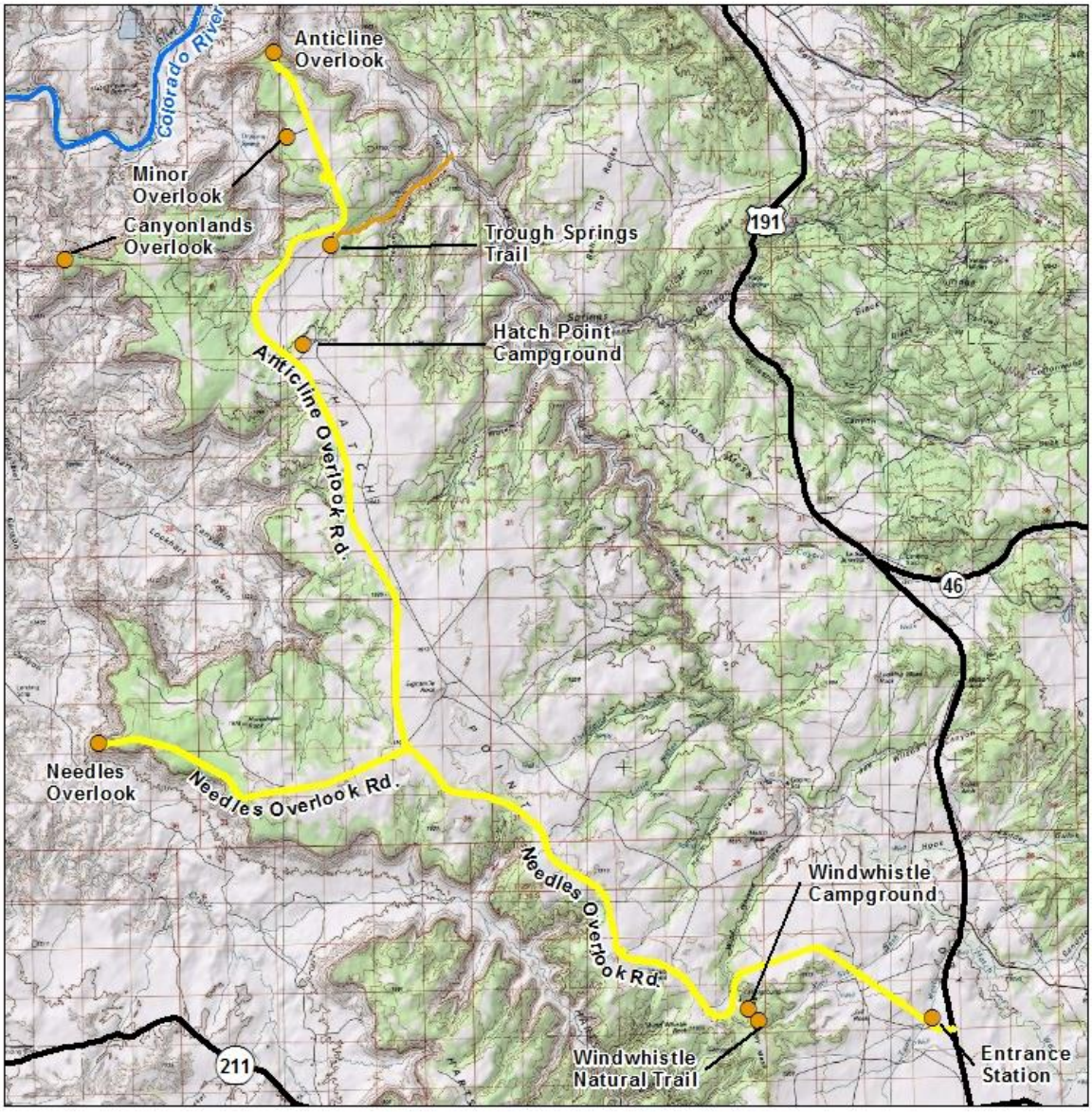
N W E S

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data

Figure 5. Recreation Facilities within the Canyon Rims SRMA

Canyon Rims Road
Figure 5. Recreation Facilities within the Canyon Rims SRMA.

DOI-BLM-Y010-2015-0249 EA
Bureau of Land Management
Moab Field Office



Location Map
Utah BLM Field Office Boundaries

Date: 1/18/2017

Legend

- Recreational Facility
- Project Area
- Major Road
- NHD River
- Trail

1:181,946

0 1.5 3 Kilometers

0 1.5 3 Miles

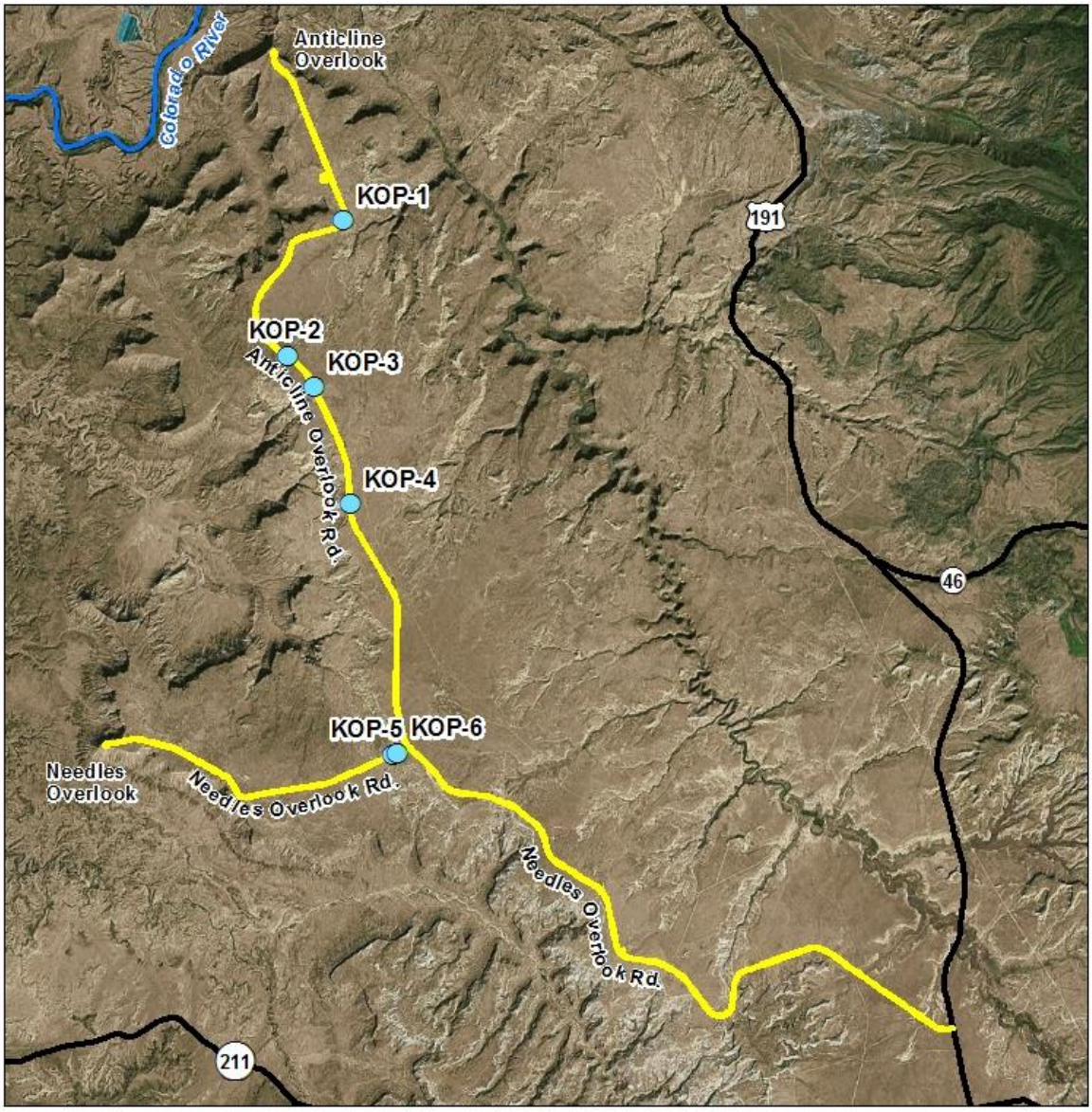
N W E S

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data

Figure 6. Visual Resources Analysis and Photo Point Locations

Canyon Rims Road
Figure 6. Visual Resources Analysis and Photo Point Locations.

DOI-BLM-Y010-2015-0249 EA
Bureau of Land Management
Moab Field Office



Location Map
Utah BLM Field Office Boundaries

Date: 1/18/2017

Legend

- Key Observation Point
- Project Area
- Major Road
- NHD River

1:182,153

0 1.5 3 Kilometers

0 1.5 3 Miles

N W E S

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data

Appendix B. Public Scoping Comments

Table B.1. Public Scoping Comment Summary Table

Comment #	Issue Raised	Number of times issue raised	Response to Comment
1	Expression of support for the proposed Needles and Anticline Overlook roadway project.	1	No Response Required
2	Request that pronghorn crossing signage be included in the construction of the roadway project as the area provided crucial year-long habitat for pronghorn and is important for fawning.	1	Signs added as Environmental Protection Measure
3	If the roadway is widened near the turn-off at Highway 191, surveys should be conducted for Gunnison prairie dog and burrowing owl as there are known active colonies and nests in the area. Active colonies and nests should be avoided April 1 through July 15 for rearing of young.	1	Widening of the road at the Hwy 191 intersection would not occur.
4	Individuals reluctant to drive on unpaved road surfaces can easily access the Needles Overlook via the paved Needles Overlook Road, while still maintaining the existing character of the Anticline Overlook Road and surrounding areas. BLM must identify why the existing condition prohibits or limits public access and why the proposed project is necessary to "enhance overall public access."	1	This issue is addressed in the Environmental Assessment.
5	BLM must consider and fully analyze a range of reasonable alternatives.	1	Alternatives addressed in the EA include the Proposed Action Alternative and No Action Alternative
6	BLM must disclose its full analyses of potential effects, including growth inducing effects, of all of the reasonable alternatives in the EA.	1	Addressed in the Environmental Assessment
7	Pursuant to NEPA's hard look requirement, BLM must gather and analyze empirical data, including use data; perform detailed evaluations of the impacts to natural resources, including impacts to lands in the Canyon Rims SRMA, Canyon Rims ACEC, and Hatch Wash/Trough Springs Hiking Focus Area.	1	Addressed in the EA
8	The EA must analyze the indirect effects, including growth-inducing effects and potential changes in patterns of land use that could result from the proposed road improvements.	1	Addressed in the EA
9	The EA must analyze the direct and indirect impacts to wildlife as a result of the increased vehicle speed that will result from paving the Anticline Overlook Road.	1	Addressed in the EA
10	The EA must disclose the direct and indirect impacts of the proposed project on visual resources.	1	Addressed in the EA

Comment #	Issue Raised	Number of times issue raised	Response to Comment
11	The EA must disclose the direct and indirect impacts of upgrading the Anticline Overlook Road as it relates to oil, gas, and potash development on Hatch Point.	1	Addressed in the EA
12	The EA must include an express provision that precludes the use of heavy trucks on the paved Needles Overlook Road, Hatch Point Road and Anticline Overlook Road. This approach is consistent with the draft Moab BLM Master Leasing Plan and the Canyon Rims SRMA. See Moab Master Leasing Plan, 2-10.	1	The proposed Master Leasing Plan proposes to exclude trucks over 20 tons to avoid damage to pavement.
13	The EA must provide the sources of BLM authority for paving the Anticline Overlook Road. A review of the 2008 Moab Resource Management Plan and the 2002 Canyon Rims SRMA Management Plan do not contemplate future paving of, or upgrades to, the Anticline Overlook Road.	1	The current road is owned and maintained by the BLM. It is the BLM responsible to provide safe access to public lands and thus has the authority to perform the necessary actions to meet their obligations.

Appendix C. Interdisciplinary Team Checklist

Table C.1. BLM Interdisciplinary Team Checklist.

Project Title: Canyon Rims Road Project

NEPA Log Number: DOI BLM UT Y010-2015-0 EA

Project Leader: Katie Stevens

DETERMINATION OF STAFF: ***(Choose one of the following abbreviated options for the left column)***

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

The following elements are not present in the Moab Field Office and have been removed from the checklist: Farmlands (Prime or Unique), Wild Horses and Burros.

Determi-nation	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality Greenhouse Gas Emissions	Emissions are short term and dispersed; no impacts to attainment status of San Juan County	A.M. Aubry	9/15/15
NI	Floodplains	No new surface disturbance	A.M. Aubry	9/15/15
NI	Soils	No new surface disturbance	A.M. Aubry	9/15/15
NP	Water Resources/Quality (drinking/surface/ground)	No water resources	A.M. Aubry	9/15/15
NP	Wetlands/Riparian Zones	No riparian resources	A.M. Aubry	9/15/15
NP	Areas of Critical Environmental Concern	See 2008 Moab Resource Management Plan	Katie Stevens	9/15/15
PI	Recreation	Would enhance access to northern part of the Canyon Rims Special Recreation Management Area. May increase visitation to areas that some people prefer to remain largely unvisited	Katie Stevens	9/15/15
NP	Wild and Scenic Rivers	See 2008 Moab Resource Management Plan	Katie Stevens	9/15/15
PI	Visual Resources	Color of new pavement could affect the visual resources along this Utah Scenic Backway	Bill Stevens	9/15/15
NP	BLM Natural Areas	See 2008 Moab Resource Management Plan	Bill Stevens	9/15/15
PI	Socio-Economics	To the extent that additional visitor days result from improved access, there would be a positive socio-economic contribution to the economy of San Juan County.	Bill Stevens	9/15/15
NP	Wilderness/WSA	See 2008 Moab Resource Management Plan	Bill Stevens	9/15/15
NP	Lands with Wilderness Characteristics	See 2008 Moab Resource Management Plan	Bill Stevens	9/15/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
PI	Cultural Resources	The FHWA-CFLHD took the lead for 36 CFR Part 800. The FHWA-CFLHD hired AMEC Foster-Wheeler to conduct a literature search and a Class III archaeological inventory of the project area. The BLM and FHWA-CFLHD found 10 properties eligible to the National Register of Historic Places in the Area of Potential Effects (APE). The project will avoid eight historic properties through redesign. Two properties cannot be avoided, but the proposed activities will not adversely affect the integrity of the properties. The FHWA-CFLHD, therefore, made a determination of No Adverse Effect. Details of these finds are discussed in the Cultural Resource Inventory Report (U-15-BL-0330). Should any cultural resources be unearthed, surface-disturbing activities will be halted until BLM and FHWA-CFLHD can evaluate the cultural sites or objects for significance, and develop a plan in accordance with 36 CFR 800.13. The SHPO concurred with FHWA-CFLHD's determinations of effect and eligibility.	M. Jared Lundell	12-12-16
NI	Native American Religious Concerns	No known sites of religious or cultural significance to Native American Tribes are with the project area. The FHWA-CFLHD consulted with the Pueblo of Hopi, The Ute Indian Tribe, Paiute Indian Tribe of Utah, Pueblo of Zuni, Navajo Nation, Ute Mountain Ute Tribe, Southern Ute Tribe, Pueblo of Zia, White Mesa Ute Council, Pueblo of Acoma, Pueblo of Laguna, and Pueblo of Santa Clara	M. Jared Lundell	12-12-16
NI	Environmental Justice		Bill Stevens	9/15/15
NP	Wastes (hazardous or solid)		Dave Pals	9/15/15
PI	Threatened, Endangered or Candidate Animal Species	Critical Mexican Spotted Owl habitat	Pam Riddle	9/15/15
PI	Migratory Birds		Pam Riddle	9/15/15
PI	Utah BLM Sensitive Species	Kit fox, burrowing owl	Pam Riddle	9/15/15
PI	Fish and Wildlife Excluding USFW Designated Species	pronghorn	Pam Riddle	9/15/15
NI	Invasive Species/Noxious Weeds	Resurfacing of road is not likely to impact, if stipulation is added to wash equipment.	Jordan Davis	9/15/15
NP	Threatened, Endangered or Candidate Plant Species	Resurfacing existing roads. No impacts to plants. No known populations	Dave Williams	9/15/15
PI	Livestock Grazing	Paving Anticline road is likely to increase the speed of travel, with the potential for more cattle/vehicle collisions.	Jordan Davis	9/15/15
NI	Rangeland Health Standards	Resurfacing existing road does not disturb any new area.	Jordan Davis	9/15/15
NI	Vegetation Excluding USFW Designated Species	Resurfacing existing road does not disturb any new area.	Jordan Davis	9/15/15
NI	Woodland / Forestry	Resurfacing existing road does not disturb any new area.	Jordan Davis	9/15/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
NP	Geology / Mineral Resources/Energy Production		David Pals	9/15/15
NI	Lands/Access	Subject to valid existing rights	Jan Denney	9/15/15
NI	Paleontology	Project taking place in PFYC 2 area, with low potential for fossils. If fossils are found, work should stop in that area and the BLM District Paleontologist should be contacted.	R. Hunt-Foster	12/12/16

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

Appendix D. Cultural Resources Agency Correspondence

U.S. Department of Transportation
Federal Highway Administration

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
720-963-3415
Kelly.Larson@dot.gov

September 20, 2016

In Reply Refer To:
HFPM-16

Mr. Jerry Spangler
Colorado Plateau Archaeological Alliance
2529 Jackson Ave.
Ogden, UT 84401

This letter is to inform you about an upcoming transportation project, and request any information or issues relating to cultural resources you believe should be considered during project planning.

Central Federal Lands Highway Division (CFLHD) of the Federal Highway Administration (FHWA), in cooperation with the Bureau of Land Management, has initiated an environmental study for a proposed roadway improvement project for the Needles and Anticline Overlook roads within the Canyon Rims Special Recreation Management Area in San Juan County, Utah. Depending on the road segment, as describe below, the road improvement project will include crack sealing, slope flattening, paving of apron areas, culvert cleaning, signing and striping, repaving, paving an existing gravel road, realigning an intersection, and other miscellaneous improvements. The proposed improvement would occur along 37.7 miles of roadway.

The proposed action has been divided into three road segments as follows:

Segment 1 - Segment 1 begins at the Needles Overlook and ends at the Y-intersection of Needles Overlook Road with Anticline Overlook Road. Segment 1 is approximately 6.5 miles long and consists of two-lane roadway averaging 22 feet wide and is comprised of chip seal over asphalt pavement. This segment runs from milepost (MP) 15.2 to MP 22

Segment 2 - Segment 2 begins at the Y-intersection of Needles Overlook Road with Anticline Overlook Road and ends at the junction of U.S. Highway 191 at the entrance to Canyon Rims SRMA. Segment 2 is approximately 15.5 miles long and consists of two-lane roadway averaging 22 feet wide and is comprised of chip seal over asphalt pavement. The pavement in Section 2 show signs of distress and a significant amount of cracking has occurred in areas for several miles beginning approximately 12 miles from the Highway 191 intersection. This segment runs from MP 0 to MP 15.2.

Segment 3 -Segment 3 includes the entire length of Anticline Overlook Road beginning at the Y-intersection with Needles Overlook Road and ending at the Anticline Overlook. Segment 3 is approximately 15.7 miles and consists of two-lane roadway averaging 23 feet wide with an aggregate surface in good condition. There are several viewing areas along this segment

comprised of widened roadway sections (pullouts) varying from 37 to 40 feet wide for several hundred feet each. This segment runs from MP 0.0 to MP 16.8.

The purpose of the Proposed Action is to enhance public access and safety to Canyon Rims SRMA with improvements to rehabilitate, restore, and resurface the roadway network in the management area. Activities proposed for each road segment are as follows:

Needles Overlook Road Segment 1 (Needles Overlook to the "Y" intersection)

- Clean and seal cracks
- Double chip seal the roadway (with option to do full depth reclamation with an asphalt overlay)
- Pave aprons (entrance areas) to designated routes, campgrounds, and overlooks.
- Remove unnecessary guardrail / upgrade other guardrail
- Miscellaneous culvert cleanings / extensions
- Rehabilitate ditches along roadway as needed to clear debris and fix any damaged culverts
- Spot slope flattening
- Signing and striping

Needles Overlook Road Segment 2 ("Y" intersection to US 191)

- Full depth reclamation with an asphalt overlay (in lieu of crack sealing and double chip seal)
- Otherwise, same work items as Segment 1

Anticline Overlook Road

- Rebuild "Y" intersection to a traditional "T" intersection
- Recondition existing aggregate roadway
- Pave roadway and add safety edge.
- Add parking area on west leg of intersection
- Add guardrail at two locations
- Miscellaneous culvert cleanings / extensions
- Replace overtopping culvert
- Pave aprons to designated routes, campgrounds, and overlooks.
- Pave and shoulder certain viewing area pullouts
- Widen and pave loop at Anticline Overlook and stripe for angle and Recreational Vehicle (RV) parking
- Signing and striping

In accordance with Section 106 of the National Historic Preservation Act (NHPA), CFLHD would like to initiate consultation with your office regarding this project. At this time, we are notifying you of the proposed undertaking, and inviting you to participate in the Section 106 process. We consider your input into the project to be important and appreciate any input you may have.

Should you have any questions or concerns about this project, information regarding sensitive resources, and/or wish to be a consulting party, please contact Ms. Kelly Wade, Environmental Team Leader, 12300 West Dakota Avenue, Suite 280, Lakewood, CO 80228; or by email to Kelly.Wade@dot.gov; or by telephone at 720-963-3461.

We would greatly appreciate a response to this letter within 30 days of receipt. Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Kelly Larson, P.E.
Project Manager

Enclosure: Map of Project Area

Cc:

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Julie Fisher
Executive Director
Department of
Heritage & Arts

Utah Division of
State History

Brad Westwood
Director

November 16, 2016

Kelly Larson P.E.
Project Manager
Central Federal Lands Highway Division
Federal Highway Administration
12300 West Dakota Avenue Suite 380
Lakewood CO 80228

RE: Canyon Rims Special Recreation Management Area Road Network, San Juan County, Utah
UT FTBL 7133(1)

For future correspondence, please reference Case No. 16-1158

Dear M. Larson:

The Utah State Historic Preservation Office received your request for our comment on the above-referenced undertaking.

We concur with your determinations of eligibility and effect for this undertaking.

This letter serves as our comment on the determinations you have made, within the consultation process specified in §36CFR800.4. If you have questions, please contact me at 801-245-7263 or by email at cmerritt@utah.gov.

Sincerely,

Chris Merritt, Ph.D.
Deputy State Historic Preservation Officer
Archaeology

Appendix E. Survey Species Lists

Table E.1. Wildlife species documented during baseline field surveys.

Scientific Name	Common Name
Birds	
Amphispiza bilineata	Black-throated sparrow
Aquila chrysaetos	**Golden eagle**
Artemisiospiza nevadensis	Sagebrush sparrow
Buteo jamaicensis	Red-tailed hawk
Carduelis pinus	Pine siskin
Cathartes aura	Turkey vulture
Chondestes grammacus	Lark sparrow
Corvus corax	Common raven
Empidonax occidentalis	Cordilleran flycatcher
Eremophila alpestris	Horned lark
Euphagus cyanocephalus	Brewer's blackbird
Falco peregrinus	**Peregrine falcon**
Falco sparverius	American kestrel
Gymnorhinus cyanocephalus	**Pinyon jay**
Haemorhous mexicanus	House finch
Hirundo rustica	Barn swallow
Icterus bullockii	Bullock's oriole
Lanius ludovicianus	Loggerhead shrike
Melospiza melodia	Song sparrow
Myiarchus cinerascens	Ash-throated flycatcher
Oreoscoptes montanus	Sage thrasher
Passerella iliaca	Fox sparrow
Petrochelidon pyrrhonota	Cliff swallow
Pica hudsonia	Black-billed magpie
Pipilo maculatus	Spotted towhee
Polioptila caerulea	Blue-gray gnatcatcher
Regulus calendula	Ruby-crowned kinglet
Salpinctes obsoletus	Rock wren
Selasphorus platycerus	Broad-tailed hummingbird
Setophaga nigrescens	Black-throated gray warbler
Sialia currucoides	Mountain bluebird
Spinus tristis	American goldfinch
Spizella breweri	**Brewer's sparrow**
Spizella passerina	Chipping sparrow
Sturnella neglecta	Western meadowlark
Turdus migratorius	American robin
Tyrannus verticalis	Western kingbird
Vireo vicinior	**Gray vireo**
Zenaida macroura	Mourning dove
Zonotrichia leucophrys	White-crowned sparrow
Mammals	
Ammospermophilus leucurus	White-tailed Antelope Squirrel
Antilocapra americana	**Pronghorn antelope**
Canis latrans	Coyote (tracks)

Scientific Name	Common Name
Cynomys gunnisoni	**Gunnison prairie dog**
Neotamias rufus	Hopi chipmunk
Sylvilagus audubonii	Desert cottontail
Reptiles	
Cnemidophorus tigris	Western whiptail
Bold species indicates sensitive species.	

Table E.2. Plant species documented during baseline field surveys.

Scientific Name	Common Name
Achnatherum hymenoides	Indian ricegrass
Aristida purpurea	Purple three awn
Artemisia cf. tridentata	Big sagebrush
Astragalus cf. amphioxys	Crescent milkvetch
Astragalus cf. lentiginosus	Freckled milkvetch
Astraglus cf. amphioxys	Crescent milkvetch
Atriplex canescens	Four-wing saltbush
Bouteloua gracilis	Blue grama
Bromus tectorum	Cheatgrass
Castilleja	Indian paintbrush
Coleogyne ramosissima	Blackbrush
Comandra umbellata	Bastard toadflax
Cryptantha flava	Brenda's yellow cryptantha
Delphinium scaposum	Tall mountain larkspur
Descurainia pinnata	Western tansymustard
Ephedra cutleri	Cutler's jointfir
Ephedra viridis	Mormon tea
Ericameria nauseosa	Rubber rabbitbursh
Eriogonum ovalifolium	Cushion buckwheat
Erodium cicutarium	Redstem stork's bill
Fallugia paradoxa	Apache plume
Fraxinus anomala	Singleleaf ash
Grayia spinosa	Spiny hopsage
Gutierrezia sarothrae	Broom snakeweed
Hesperostipa comata	Needle and thread grass
Hymenopappus filifolius	Fineleaf hymenopappus
Juniperus osteosperma	Utah juniper
Krascheninnikovia lanata	Winterfat
Lepidium densiflorum	Common pepperweed
Linanthus pungens	Granite prickly phlox
Linum lewisii	Lewis flax
Lygodesmia grandiflora	Largeflower skeletonplant
Mahonia frremontii	Fremont's mahonia
Monroa squarrosa	False buffalograss
Oenothera caespitosa	Tufted evening primrose
Opuntia fragilis	Brittle pricklypear
Orobanche fasciculata	Clustered broomrape
Pinus edulis	Twoneedle pinyon pine
Plantago cf. patagonica	Woolly plantain
Rumex hymenosepalus	Canaigre dock
Salsola tragus	Russian thistle
Sisymbrium irio	London rocket
Sphaeralcea cf. parvifolia	Globemallow
Sphaeralcea coccinea	Scarlet globemallow

Scientific Name	Common Name
Stanleya pinnata	Desert princesplume
Yucca harrimanniae	Spanish bayonet

Appendix F. Biological Assessment

Biological Assessment

UT FTBL 7133(1)
Canyon Rims Special Recreation Management Area Road Network
San Juan County, Utah

Federal Highway Administration
Central Federal Lands Highway Division

Prepared for:
Muller Engineering Company, Inc.

Prepared by:
Amec Foster Wheeler Environment & Infrastructure, Inc.

January 18, 2017

Table of Contents

Appendices

Tables

Abbreviations and Acronyms

ºF	degree Fahrenheit
BA	Biological Assessment
BLM	Bureau of Land Management
CFLHD	Central Federal Lands Highway Division
Cm	centimeters
DBH	Diameter at Breast Height
EMU	Ecological Management Units
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FHWA	Federal Highway Administration
IPAC	Information, Planning, and Conservation System
km	kilometer
LRR	Land Resource Region
MFO	Moab Field Office
MLRA	Major Land Resource Area
MSO	Mexican Spotted Owl
NEP	Nonessential Experimental Population
NPS	National Park Service
NRCS	Natural Resources Conservation Service
PAC	Protected Activity Center
PCE	Primary Constituent Element
RMP	Resource Management Plan
SRMA	Special Recreation Management Area
SWFL	Southwestern Willow Flycatcher
U.S.	United States
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
WRCC	Western Regional Climate Center
YBCU	Yellow-billed Cuckoo

1 Introduction

This Biological Assessment (BA) provides data for the Endangered Species Act (ESA) evaluation of the Federal Highway Administration - Central Federal Lands Highway Division (FHWA-CFLHD) and the US Bureau of Land Management (BLM) proposal for the road safety improvements within the Canyon Rims Special Recreation Management Area (SRMA). If approved, Canyon Rims SRMA Road Improvements will be built as a phased construction project.

1.1 Proposed Action

The project is located approximately 32 miles south of Moab in San Juan County, Utah. The Canyon Rims SRMA is situated on top of a large plateau encompassing 101,531 acres. The Canyon Rims SRMA receives about 85,000 visits per year (BLM, 2015a) Visitors access the area via U.S. Highway 191 by vehicles, motorcycles, off highway vehicles, and mountain and road bikes. Two well-known viewing areas (Needles Overlook and Anticline Overlook) are located within the Canyon Rims SRMA which provides long-range views of the Colorado River and Canyonlands National Park from a large plateau, as well as opportunities for distant views of mountains, canyons, basins and rock formations, and wide open spaces from the scenic overlooks provided within the recreation area.

The project road network is comprised of two BLM roads totaling 37.7 miles (**Figure 1**). The first 22 miles of road (Needles Overlook Road) from US Highway 191 to the Needles Overlook consist of an asphalt paved surface constructed in 1963, and maintained through numerous crack sealing over the decades. This road is divided into two segments: the first segment is from the Needles Overlook (38.259905° N, -109.695911° W) to the Y-intersection of Anticline Overlook Road (38.257180° N, -109.581699° W); and the second segment is from the Y-intersection with Anticline Overlook Road to US Highway 191 (38.170314° N, -109.379061° W).

The second road (Anticline Overlook Road) is 15.7 miles long and consists of aggregate surface, constructed in 1963, and maintained by grading of the roadway surface on a bi-annual basis. This road begins at the Y-intersection with Needles Overlook Road (38.257180° N, -109.581699° W) and ends at the Anticline Overlook (38.464636° N, -109.627493° W). The roads provide access to two developed, fee campgrounds, four scenic overlooks, and several trailheads. Both roads are classified as Rural Recreational and Scenic Roads. The majority of visitors come to observe the Colorado River's canyon from the overlooks at the edge of the plateau. The Canyon Rims SRMA receives about 85,000 visits per year (BLM 2015b) and, based on historical growth, visitation is expected to increase by approximately 3.1 percent a year (BLM 2016c).

The proposed project will include improvements to rehabilitate, restore, and resurface the existing road primarily to improve public access. Specific proposed roadway improvements by segment include:

Needles Overlook Road Segment 1 (Needles Overlook to the "Y" intersection)

- Clean and seal cracks
- Double chip seal the roadway (with option to do full depth reclamation with an asphalt overlay)
- Pave aprons (entrance areas) to designated routes, campgrounds, and overlooks
- Remove unnecessary guardrail / upgrade other guardrail
- Miscellaneous culvert cleanings / extensions
- Rehabilitate ditches along roadway as needed to clear debris and fix any damaged culverts
- Spot slope flattening
- Signing and striping

Needles Overlook Road Segment 2 ("Y" intersection to US 191)

- Full depth reclamation with an asphalt overlay (in lieu of crack sealing and double chip seal)
- Otherwise, same work items as Segment 1

Anticline Overlook Road

- Rebuild "Y" intersection to a traditional "T" intersection
- Recondition existing aggregate roadway
- Pave roadway and add safety edge
- Add parking area on west leg of intersection
- Add guardrail at two locations
- Miscellaneous culvert cleanings / extensions
- Replace overtopping culvert
- Pave aprons to designated routes, campgrounds, and overlooks.
- Pave and shoulder certain viewing area pullouts
- Widen and pave loop at Anticline Overlook and stripe for angle and Recreational Vehicle (RV) parking
- Signing and striping

Needles Overlook Road Segment 1 Option

- Pulverize and compacting existing asphalt pavement and two-inch overlay with Asphalt Pavement (in lieu of patching, crack sealing, and chip sealing)
- All other work items from Segment 1

1.1.1 Environmental Protection Measures

Environmental protection measures consistent with the BLM Moab Field Office (MFO) Resource Management Plan (RMP) and additional measures integrated into the project plan would reduce impacts to federally-listed species. Measures are listed below and divided into Project plan measures and BLM RMP measures.

Project Plan Measures

1. Areas of temporary vegetation removal would be reseeded with native seed mixes that are approved by the BLM.
2. Construction shall occur during daylight hours (½ hour after sunrise to ½ hour before sunset).
3. Stumps and trunks of trees cut would be left in the area of the project to provide ground litter and woody debris.
4. Some or all of the following erosion control measures would be implemented during project construction:
    a. Preservation of Existing Vegetation, where possible
    b. Stockpile Management
    c. Temporary Stream Crossings
    d. Wind Erosion and Dust Control
    e. Revegetation
    f. Mulch
5. Some or all of the following sediment controls would be implemented during construction:
    a. Storm drain Inlet Protection
    b. Street Sweeping
    c. Stabilized Construction Entrance/Exit

Applicant Committed Measures

1. Prior to project construction:
    a) MSO protocol level surveys will occur in the Lockhart Rim survey area.
    b) Suitable nesting habitat outside the Lockhart Rim survey area, but within 0.5 mile of the project, will be identified.
    c) MSO protocol level surveys will occur in suitable nesting habitat located outside the Lockhart Rim survey area.

2. Temporary or permanent construction activity (including rehabilitation of temporary disturbances) will not occur between March 1 – August 31, within 0.5 miles of occupied suitable nesting habitat.
3. Within six months of project completion, but outside the breeding season for MSO (March 1 – August 31), all areas of temporary disturbance will be rehabilitated to pre-project conditions, to be verified by the BLM. FHWA will develop success criteria specific to invasive weeds and will provide documentation that those success criteria have been met for 3 years.
4. Limit disturbances to and within suitable habitat by staying on designated and/or approved routes.
5. Limit new access routes created by the project.

1.2 Purpose

The BLM and FHWA-CFLHD both share the common goal of improving public access and safety to federal lands. The purpose of the Proposed Action is to enhance public access and safety to Canyon Rims SRMA with improvements to rehabilitate, restore, and resurface the roadway network in the management area. The purpose of the Proposed Action for the BLM, as the land manager of the Canyon Rims SRMA, is to ensure public access meets the national, regional, and local visitor recreation needs. The purpose of the project for the FHWA-CFLHD is to improve the accessibility and safety of the existing transportation network in the management area.

The objective of repairing and improving the existing roadway network within the Canyon Rims SRMA is to reduce annual maintenance costs and issues including pothole repair, gravel replacement, culvert cleaning, and ditch repair. Some of the existing culverts and drainage systems are damaged or clogged, and no longer function properly. Further, existing features within and adjacent to the roadway within the Canyon Rims SRMA present safety and traffic concerns, including steep slopes adjacent to the roadway, unmarked culverts, and overgrown vegetation. Additionally, signs along the roadways within the Canyon Rims SRMA do not meet the required reflectivity standards, which cause additional safety issues. Therefore, the Canyon Rims SRMA Road Improvement Project includes the following objectives:

1. Improve public access to two campgrounds, four scenic overlooks, and two trailheads within Canyon Rims SRMA.
2. Enhance roadway safety to meet current standards and to minimize existing traffic concerns regarding substandard roadway conditions and signage.
3. Decrease annual maintenance costs and minimize operational issues by replacing and repairing drainage infrastructure.

Section 7(a)(1) of ESA of 1973 (as amended) directs all Federal agencies to participate in the conservation and recovery of threatened and endangered species. Section 7(a)(2) of the ESA states that each Federal agency shall consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. The project will be federally funded and FHWA-CFLHD is the lead agency for the Section 7 consultation.

This report evaluates the potential impacts to federally-listed species with potential to occur near the project. Habitat for federally-listed species was evaluated in the field from May 18 – 21, 2015. Identifying federally-listed species with potential to occur and where habitat exists will allow the planning and design staff at FHWA-CFLHD to avoid and minimize impacts to species during the project. The BLM biologists have reviewed this BA and concur with the findings.

1.3 Areas Analyzed

The survey area encompasses both the Anticline and Needles Overlook roads, areas identified in initial design drawings that may incur impacts, and a 25 foot buffer of both. Activities that may result in impacts to habitat within the survey area include slope flattening, culvert work areas, guardrail removal, view area pullouts, and temporary staging. These areas were evaluated for federally-listed species' habitat during field surveys.

A 0.5 mile buffer was applied to the survey area to analyze potential impacts to habitat for MSO, California condor (*Gymnogyps californianus*), yellow-billed cuckoo (YBCU) (*Coccyzus americanus*), and southwestern willow flycatcher (SWFL) (*Empidonax traillii extimus*). Protocol-level surveys were not conducted for any species for this project. **Figure 1** displays both the survey area and the 0.5 mile survey area buffer for this BA. **Table 1** below summarizes the different areas analyzed for the project.

Table 1. Summary of areas evaluated for the project

Area Type	Description	Acreage
Survey Area	• All construction impact areas • 25 foot buffer of construction impact areas • Anticline and Needles Overlook roads • 25 foot buffer of Anticline and Needles Overlook roads	360
0.5 mile Survey Area Buffer	• 0.5 mile buffer of survey area used to analyze impacts to the following species' habitat: o Mexican spotted owl o California condor o Yellow-billed cuckoo o Southwestern willow flycatcher	25,394

2 Location Description

This section provides descriptions of the ecoregion, land resource region (LRR), geology and hydrogeology, climate, and soils identified within the survey area.

2.1 Ecoregion

The distribution of flora is a function of the geology, soils, climate, and water, which correlates with distinct areas identified as ecoregions. Ecoregions are broadly defined areas that share similar characteristics, such as climate, geology, soils, and other environmental conditions and represent ecosystems of regional extent (National Wildlife Federation [NWF] 2015; USFS 2015; World Wildlife Fund [WWF] 2015). The ecoregions mapped by the Environmental Protection Agency (EPA) are the most commonly referenced. The EPA Level I ecoregion is the coarsest level, dividing North America into 15 ecological regions. Level II further divides the continent into 50 regions. The continental U.S. contains 104 Level III ecoregions. The project lies within one Level III EPA Ecoregion, the Colorado Plateaus (Ecoregion 20) (Woods et al. 2001). This ecoregion is defined by the EPA as follows:

"Ecoregion 20 is an uplifted, eroded, and deeply dissected tableland. Its benches, mesas, buttes, salt valleys, cliffs, and canyons are formed in and underlain by thick layers of sedimentary rock. Juniper-pinyon woodland dominates higher elevations and is far more extensive than in the Wyoming Basin (18). Saltbush-greasewood and blackbrush communities are common at lower elevations but are generally absent from the higher Arizona/New Mexico Plateau (22). Summer moisture from thunderstorms supports warm season grasses not found in the Central Basin and Range (13). Many endemic plants occur and species diversity is greater than in Ecoregion 13. Several national parks are located in this ecoregion and attract many visitors to view their arches, spires, and canyons. Major gas and oil fields are found in the Uinta Basin portion of Ecoregions 20c, 20f, and 20g (Woods et al. 2001)."

2.2 Land Resource Region

The U.S. Department of Agriculture, Natural Resources Conservation Service (USDA, NRCS) completed a detailed report documenting the general conditions of land resource areas in the *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin* (NRCS 2006). According to the aforementioned report, the project falls within LRR D – Western Range and Irrigated Region, and Major Land Resource Area (MLRA): 35 – Colorado Plateau, and will be referenced as such.

The project lies within the Canyonlands Section of the Colorado Plateaus Province geologic formation of the Intermontane Plateaus. The Canyonlands Section is comprised of deeply incised canyons, plateaus, mesas, buttes and badlands. Delicate rock forms, such as tall pinnacles, deep alcoves, natural bridges and arches are abundant (University of Utah 2009).

2.3 Geology

Geology of this MLRA is defined as an area that has been structurally uplifted. Rivers flowing across the area cut down into the bedrock as it was being uplifted. Areas of shale, sandstone, limestone, dolomite, and volcanic rock outcrop are extensive. Quaternary and Tertiary lava flows occur in the southwest portion of the MLRA and older lava flows cap plateaus and mesas. There are also isolated volcanic cones and eroded volcanic necks throughout the area (University of Utah 2009).

The MLRA lies within the Upper Colorado-Kane Springs watershed (U.S. Geologic Survey [USGS] Hydrologic Unit Code [HUC] 14030005), which drains toward the Colorado River. Surface water is scarce throughout the area and many streams and rivers are ephemeral. Water is stored in small reservoirs for irrigation purposes and supplies are often inadequate. Groundwater in the vicinity ranges from 65 to 115 feet below ground surface (USGS 2015).

2.4 Climate

Average annual precipitation ranges from six to 18 inches (NRCS 2006) and is approximately nine inches near the project (WRCC 2015). Isolated mountain ranges may receive as much as 30 inches of annual precipitation. Approximately half the annual precipitation occurs from July through September; while April, May and June are the driest months. Most rainfall in the area occurs as high-intensity, convective thunderstorms late in summer. Light snow falls in winter, but does not tend to remain on the ground for long. The average annual temperature ranges from 36 degrees Fahrenheit (ºF) to 66 ºF, decreasing to the north and at the higher elevations. The freeze-free period averages 215 days and ranges from 105 to 320 days, decreasing in length to the north and at the higher elevations (NRCS 2006).

2.5 Soils

Alfisols, Aridisols, Entisols and Mollisols are the dominant soil orders in this MLRA. These soil series are typically well-drained to somewhat excessively drained, and are typically comprised of loams and clays derived from alluvium and mixed eolian deposits. The soils in this area generally are very shallow to very deep. Project-specific soil data consists of the following soil series: Factory, Windwhistle, Mido, Rizno, Begay, Shalako-Anasazi-Rock outcrop, Ignacio-Leanto, Newsrock, Redbank, and Moenkopie series. None of the soils are considered hydric soils in San Juan County, Utah (NRCS 2015).

3 Species List

Data from USFWS Information, Planning, and Conservation System (IPAC) was reviewed to identify special-status species that occur, or have the potential to occur, in the vicinity of the survey area (USFWS 2015a, Appendix B). A list of all ESA threatened, endangered, candidate and proposed species potentially occurring in the survey area is provided in **Table 2**. Based on a desktop review, which included a review of recorded occurrences, known range, and habitat requirements, and site analysis of potential habitat for each species, it was determined that only one species, MSO (*Strix occidentalis lucida)*, is predicted to have habitat within 0.5 miles of the proposed project.

Table 2. Federally-listed species initially evaluated for the project.

Scientific Name	Common Name	USFWS Status	Habitat	Potential to be Impacted by Project	Further Evaluated
Birds					
Centrocercus minimus	Gunnison sage-grouse	FT	Prefers sagebrush and sagebrush/grassland habitats. It feeds mainly on sagebrush and other plant material, although insects are also consumed (UDWR 2015a). May also be found in healthy wetland and riparian areas. Two small areas with populations in eastern Utah, near Monticello (USFWS 2013a).	No; habitat does not exist and populations are not present in area.	No
Coccyzus americanus	Yellow-billed cuckoo	FT	The current distribution of yellow-billed cuckoos in Utah is poorly understood, though they appear to be an extremely rare breeder in	No; suitable habitat is not	No

			lowland riparian habitats statewide. Nesting habitat is classified as dense lowland riparian characterized by a dense sub-canopy or shrub layer within 100 meters (333 feet) of water. Cuckoos may require large tracts (40-80 hectares [100-200 acres]) of contiguous riparian nesting habitat (UDWR 2015a).	present (See **Section 3.1.2**)	
Empidonax traillii extimus	Southwestern willow flycatcher	FE	Found most frequently in riparian habitats, especially in areas of dense willow. It is rare in southern Utah during the summer (UDWR 2015a).	No; suitable habitat is not present (See **Section 3.1.1**)	No
Gymnogyps californianus	California condor	P	Prefers cliffs and brushy areas within mountainous terrain. Often seen roosting on snags, tall open-branched trees, or cliffs (UDWR 2015a).	No; suitable habitat is not present (See **Section 3.1.3**)	No
Strix occidentalis lucida	Mexican spotted owl	FT	Occurs in varied habitat, consisting of mature montane forest and woodland, shady wooded canyons, and steep canyons, which is the primary habitat in Utah. Nests are found in live trees in natural platforms (e.g., dwarf mistletoe brooms), snags, and on canyon walls. Elevation ranges from 4,100 to 9,000 feet (USFWS 2008; UDWR 2015a).	Yes; nesting canyon habitat is nearby and pinyon-juniper foraging habitat is present.	Yes
Fish					
Gila cypha	Humpback chub	FE	Confined to a few white-water areas in Colorado, Green, and White Rivers. Primarily eat insects and other invertebrates, but algae and fishes are occasionally consumed. The species spawns during the spring and summer in shallow, backwater areas with cobble substrate (UDWR 2015a).	No; river habitat is not present (see **Section 3.1.4**)	No
Gila elegans	Bonytail chub	FE	Prefer eddies, pools, and backwaters near swift current in large rivers, mostly in the Colorado River system. Eats insects, zooplankton, algae, and higher plant matter. Spawning in the wild is now rare, but does spawn in the spring and summer over gravel substrate (UDWR 2015a).	No; river habitat is not present (see **Section 3.1.4**).	No
Oncorhynchus clarki stomias	Greenback cutthroat trout	FT	Clear, swift-flowing mountain streams with cover such as overhanging banks and vegetation; juveniles tend to shelter in shallow backwaters; also in lakes (NatureServe 2014).	No; mountain stream habitat is not present.	No
Ptychocheilus lucius	Colorado pikeminnow	FE	Prefer medium to large rivers, ranging from deep turbid rapids to flooded lowlands. Young prefer slow-moving backwaters. The largest minnow in North America (UDWR 2015a).	No; river habitat is not present (see **Section 3.1.4**).	No
Xyrauchen texanus	Razorback sucker	FE	The species prefers slow backwater habitats and impoundments. The largest current concentration of razorback suckers can be found in Lake Mohave (an impoundment), along the Arizona - Nevada border (UDWR 2015a).	No; impoundments and backwater habitat are not present (see **Section 3.1.4**).	No
Plants					
Carex specuicola	Navajo sedge	FT	Restricted to seep, spring, and hanging gardens of Navajo Sandstone (UDWR 2015b). Prefers moist, sandy to silty soils of shady seep-spring pockets or alcoves with somewhat limited soil development at 5,700-6,000 feet (NatureServe 2014).	No; seeps and springs are not present and project would not alter or impact aquifers that support any seeps or springs.	No
FT – Federally Threatened, FE – Federally Endangered, P – Proposed for Listing					

3.1 Explanation of Select Species not Further Analyzed

3.1.1 Southwestern Willow Flycatcher

The SWFL was listed as endangered on March 29, 1995 (*60 FR 10695 10715*), under the ESA of 1973, and Critical habitat was formally designated on July 22, 1997 (*78 FR 343 534)*. No critical habitat has been designated on lands administered by the BLM MFO. The Final Recovery Plan for the SWFL was completed in August of 2002. The SWFL is a riparian obligate species and nests in dense riparian habitat. Although often considered to use only cottonwood-willow associations, it is known to nest in various exotic species in the southwest, such as tamarisk (*Tamarix* spp.) and Russian olive (*Elaegnus angustifolia*). Breeding territories have been found primarily where surface water or saturated soil is present and nests are usually less than 20 meters from water (Johnson 2005).

All of the riparian habitats in the MFO other than the upper Bookcliffs area (near Uintah Reservation, 62 miles northwest of the project) have been assessed for habitat suitability and surveyed for SWFL presence where applicable (BLM, 2016b). There have been approximately 11,200 acres of riparian areas identified that offer some level of SWFL migratory and breeding habitats, with over 9,000 acres potentially suitable for nesting use in the MFO. All SWFL detections have indicated early season migratory use in only the most suitable habitats along the Green, Colorado, and Dolores Rivers. No nesting birds have ever been detected and are not expected to nest on lands administered by the MFO, as survey work indicates SWFL use in the area is typically migratory (BLM, 2016b).

Within 0.5 miles of the project there are eleven patches of riparian habitats identified in the BLM riparian database. There are four reservoirs, several dry washes and several narrow canyons that offer scattered cottonwoods but no under-story. All areas were deemed unsuitable in 2007 and 2008 during SWFL habitat evaluations performed by Bill Sloan with NPS for the Hatch Point and Windwhistle grazing allotments. Due to the lack of suitable SWFL habitats within 0.5 miles of the survey area, activities proposed by this project will have 'no effect' on the SWFL or its habitat (BLM, 2016b).

3.1.2 Western Yellow-billed Cuckoo

The Western YBCU was listed as threatened on October 3, 2014 (*79 FR 59991* 60038) under the ESA of 1973, and critical habitat was formally proposed on August 15, 2014 (*79 FR 48547 48652*). The MFO contains approximately 860 acres of proposed designated critical habitat which in over 30 miles from the survey area. The Final Recovery Plan for the Western YBCU has not been completed.

The YBCU is associated with cottonwoods and riparian cover, which provide nesting and brood-rearing habitat (BLM, 2016b). YBCU are obligate riparian nesters and are restricted to more mesic habitat along rivers, streams, and other wetlands, requiring a minimum 12 acres patch size for breeding and nesting. The YBCU has been recently listed due to loss of riparian habitat from agricultural use, water use, road development and urban development (BLM, 2016b).

For the purpose of this BA, we will assume that all habitats deemed as suitable SWFL habitats may offer some level of YBCU habitat until further evaluated (BLM, 2016b). Within 0.5 miles of the proposed project the eleven patches of riparian habitats identified in the BLM riparian database offer scattered cottonwoods but no understory in the area. Most are only several acres in size and all only 20-30 meters wide. All areas were deemed unsuitable in 2007 and 2008 during SWFL habitat evaluations performed by Bill Sloan with NPS for the Hatch Point and Windwhistle grazing allotments and therefore do not offer habitats for YBCU. Due to the lack of suitable YBCU habitats within 0.5 miles of the survey area, activities proposed by this project will have 'no effect' on the YBCU or its habitat (BLM, 2016b).

3.1.3 California Condor

The California condor was listed under early endangered species legislation by the USFWS in 1967 (*32 FR 4001, March 11, 1967*) and was "grandfathered" into the ESA in 1973. Critical habitat was designated in 1976 within the state of California; no critical habitat has been designated within the state of UT (*41 FR 41914, September 24, 1976*).

On October 6, 1996, the Service announced its intention to reintroduce California condors into northern Arizona and southern Utah and designated the released birds as a nonessential experimental population (NEP) under Section 10(j) of the ESA (*61 FR 54045 54060, October 16, 1996*). On October 29, 1996, six California condors were released within a designated NEP area in northern Arizona and southern Utah. The area is bounded by Interstate 40 on the south, U.S. Highway 191 on the east, Interstate 70 on the north, and Interstate 15 to U.S. Highway 93 on the west. The proposed project in located within this NEP.

According to the Federal Register (*61 FR 54045 54060, October 16, 1996*) NEPs located outside National Wildlife Refuge System or National Park System lands are treated, for the purposes of section 7 of the Act, as if they are proposed for listing. Thus, for the proposed project, only two provisions of section 7 would apply; section 7(a)(1), which requires all Federal agencies to use their authorities to conserve listed species, and section 7(a)(4), which requires Federal agencies to informally confer with the Service on actions that are likely to jeopardize the continued existence of a proposed species (USFWS 2015b).

USFWS does not foresee that activities in the California condor nonexperimental population area would jeopardize the continued existence of the California condor (*61 FR 54045 54060, October 16, 1996*). That is demonstrated by:

1. Condors utilize remote, canyon habitat;
2. USFWS has never determined that an activity may cause jeopardy of the condor during the time (29 years) that condors have been listed and fully protected in California;
3. The size of the California condor population is expected to increase in the future;
4. Existing land management is compatible with condors;
5. The management strategies identified in the experimental population rule virtually eliminate the possibility of impacts to condors or existing and future activities in the experimental population area.

A significant portion of the California condor experimental population area includes remote wild canyon back country habitat that will provide this population with a natural refugium in which to raise young and will minimize the opportunity for condor conflicts with any ongoing or proposed activities. Also, the condor's requirement for remote inaccessible cliff nesting habitat, wide-ranging foraging patterns, and carrion prey base make them less susceptible to impacts from most human related activities. Consequently, condors released into the experimental population area should be able to coexist with the current and anticipated land, water, or air uses in the area in a compatible manner without conflict (*61 FR 54045 54060, October 16, 1996*).

Within the MFO, where the proposed project is located, there is no known occupancy, roosting, nesting or foraging of the California condor. All activities associated with the proposed project for paving and upgrading will occur within at most 25 feet of the existing road right-of-way (ROW) and will not create any new permanent surface disturbance or any new activity nor will it alter nearby cliff habitat. Due to the lack of any known populations, the lack of any new surface disturbance and rational identified in the Federal Register the activities associate with the Proposed Project are *Not Likely To Jeopardize The Continued Existence the California condor within the NEP*, therefore this specie will not be address further in this BA.

3.1.4 Colorado River Fish Species

Species present within the Colorado River or perennial waters with connection to the Colorado River include humpback chub, bonytail chub, Colorado pikeminnow, and razorback sucker. Critical habitat for

Colorado pikeminnow and razorback sucker has been designated within approximately 1.7 miles west of the survey area, along the Colorado River. Critical habitat for humpback chub and bonytail chub has also been designated along the Colorado River, but approximately 14 miles southwest of the survey area.

All drainage features within the survey area were identified as ephemeral, non-relatively permeable waters (AFW, 2016). Ten drainage features eventually connect to the Colorado River through a series of other ephemeral drainages and/or perennial waters. All of the drainage feature impact areas within the survey area were greater than 4,000 feet from the Colorado River and are not within its 100 year floodplain (AFW, 2016). Due to the lack of suitable habitat for the mentioned fish species within the survey area and the distance of the drainage features from the Colorado River, activities proposed by this project will have 'no effect' on the humpback chub, bonytail chub, Colorado pikeminnow, and razorback sucker or their habitat. Environmental protection measures to reduce sedimentation and erosion of drainage features within the survey area would be implemented as a result of the project and would further reduce the likelihood of any impacts to the Colorado River fish species.

4 Affected Species

4.1 Mexican Spotted Owl

Mexican Spotted Owl was federally listed as threatened under ESA in 1993. Immediately following its listing, a team was appointed to develop the *Mexican Spotted Owl Recovery Plan.* The *Mexican Spotted Owl Recovery Plan* was completed in 1995 and revised in 2012 (USFWS 1995, 2012). The Recovery Plan provides a basis for management actions to be undertaken by land management agencies to remove recognized threats and recover MSO.

MSO range spans western North America, from southern British Columbia to Mexico. In Utah, the species is found in southern and eastern parts of the State, on the Colorado Plateau (UDWR 2015c). The project lies within one of the five Ecological Management Units (EMU) for the MSO; the Colorado Plateau EMU. EMUs span the entire range of MSO and are used to divide up the management of the species across a large area. The Colorado Plateau EMU includes most of eastern and southern Utah, portions of northern Arizona, northwestern New Mexico, and western Colorado. A major habitat feature of this EMU are deep canyons (USFWS 2012a).

MSO can be found in various habitats, including canyonlands and forested highlands throughout the southwestern United States (U.S.) and northern Mexico. In Utah, the species primarily utilizes canyonlands and steep, rocky cliff sides as habitat (UDWR 2015c). Rocky-canyon habitat commonly contains several characteristics: steep canyon walls that extend for at least 0.6 miles (1 km [kilometer]); narrow canyon widths (0.6 mile [<1 km] rim-to-rim); large cliff faces with complex vertical structuring including many ledges and caves which provide cooler, shaded microclimates; geologic layers that form steep, narrow canyons; and late seral and multi-storied canopy forest vegetation, including riparian, mixed-conifer, ponderosa pine, pine-oak forests, or pinyon-juniper woodlands (USFWS 2013b). MSO typically do not migrate out of breeding habitat during winter months, but some have been documented moving up to 99 miles away from the breeding territory in winter months. Vertical movements in elevation may occur, in winter months as the birds tend to go to lower elevations. Further research is needed to gain a better understanding of MSO winter habits and movements (USFWS 2012a).

Foraging habitat includes more landscape variety than other habitats. MSO have been found to use unlogged forests, managed and unmanaged forests, pinyon-juniper woodlands, mixed-conifer and ponderosa pine forests, cliff faces, terraces between cliffs, and riparian areas for foraging (USFWS 2012a). MSO typically forage on small- to medium-sized rodents such as woodrats, deer mice, pocket gophers, and voles but may also consume other items such as bats, rabbits, birds, reptiles, and insects (USFWS 2012a; UDWR 2015c). Diet of the MSO varies by region and those that occupy canyonlands often consume more woodrats and fewer birds (USFWS 2012a). Most studies indicate that generally, spotted owl species forage for nocturnal

prey, which therefore indicates foraging activity occurs at night (Forsman et al. 2004). MSO foraging behavior during nesting season has been found to be concentrated during diurnal hours (Laymon 1991; Delaney et al. 1999a), with most foraging occurring one to three hours before sunrise and one to three hours after sunset (Delaney et al., 1999a). Also, spotted owls have been found to forage opportunistically, if prey is seen during the day while nesting (Forsman et al. 2004).

MSO may also nest in steep, rocky canyons, which is the habitat type found near the project. Nesting habitat includes prominent vertical cliffs, various desert scrub and riparian areas, and complex tributary canyons (USFWS 2012a). MSO pairs defend a larger breeding territory within their home range and tend to have high range fidelity year to year. Local differences in range size occur, contributing to some uncertainty in trends of home range size (USFWS 2012a).

MSO begin courtship in March and lay eggs in March to early April. Typically, they lay one to three eggs per clutch. A second clutch following nest failure is uncommon, but has been documented previously. Incubation of eggs lasts approximately 30 days, and eggs typically hatch in early May. Owlets fledge in early- to mid-June, four to five weeks following hatching, and disperse from the nest location by mid-September to early October. The majority of MSO breed successfully during years with ample resources available, but very few attempt to breed or successfully breed during poor resource years (USFWS 2012a).

MSO populations have been impacted most by alteration of habitat from timber-management and, more recently, stand-replacing wildfires. Drought, climate change, and unhealthy forest conditions all contribute to the increase in larger, more severe fires in MSO habitat. Other factors that decrease habitat suitability and therefore impact populations includes domestic and wild ungulate grazing, recreation, fuels reduction treatments, resource extraction and development, predation, starvation, accidents (cars), disease, and parasites (USFWS 2013b).

5 Affected Habitat

5.1 Habitat Present

The USFWS recognizes two models, the 1997 Willey-Spotskey's MSO Habitat Model and the 2000 Willey-Spotskey's MSO Habitat Model, to be used as tools to identify and protect MSO habitat (Willey-Spotskey 1997, 2000). The 1997 model is recognized as an overestimate of all habitats in almost all cases, whereas the 2000 model may underestimate owl habitat, particularly foraging, winter, and dispersal habitat. The USFWS recommends a multi-tool approach, using the 1997 model for large scale planning efforts and the 2000 model to identify possible areas that may provide nesting and roosting habitat where activity centers may be located (USFWS 2012a). The 1997 model foraging and nesting habitat data and the 2000 model nesting habitat data were used for the purposes of this project and is presented in **Figure 2**. Additionally, field investigations were performed from May 18 to 21, 2015 to confirm the presence of habitat designated in the models within the 25 foot survey area, where direct impacts of the project may occur.

Based on the 1997 Willey-Spotskey Habitat Model Data, the 0.5 mile buffer of the survey area provides foraging habitat for MSO (Willey-Spotskey 1997). Additionally, field surveys conducted by biologists within the 25 foot survey area and consultation with the BLM confirmed the presence of foraging habitat (BLM 2015a). Foraging habitat for MSO is present primarily along the western side of the Anticline Overlook Road and along the Needles Overlook Road from the Y-intersection westward (**Figure 2**). Foraging habitat consists of scattered Colorado Plateau pinyon-juniper woodlands and some pinyon-juniper shrubland areas. The woodland areas are comprised of larger pinyon and juniper trees that would provide perching sites for foraging MSO. Pinyon-juniper shrubland areas are intermixed with the woodland areas but contain overall shorter or stunted vegetation, but only provides low-quality foraging habitat for MSO as the pinyon-juniper shrubs do not provide adequate heights for hunting and foraging vantage points. Rodent burrows and tracks were found throughout the pinyon-juniper woodlands and shrublands, indicating potential prey species are present within these habitat areas. Cliff faces are also available near the project

and could provide foraging habitat for the species. The minimum distance between the survey area and cliff faces is approximately 90 to 95 feet and occurs at both the Anticline and Needles Overlooks.

Within the 0.5 mile buffer of the survey area, the 1997 and 2000 Willey-Spotskey MSO Habitat Models indicate that nesting habitat overlaps with parts of the Needles Overlook and Anticline Overlook areas and is found throughout the Canyon Rims SRMA. Canyon walls and cliffs nearby were identified as nesting habitat in the model to produce the output seen in **Figure 2**. Nesting habitat is present below the rims, along steep canyon walls and cliff faces that are located approximately 90 to 95 feet, within the 0.5 mile buffer of the survey area, at both the Anticline and Needles Overlooks. Nesting habitat for MSO was not identified within the survey area during field surveys, but within 0.5 miles, suitable nesting habitat is confirmed to be present by BLM biologists (BLM 2015a). **Table 3** indicates the potential MSO habitats depicted by both Willey-Spotskey MSO Habitat models within 0.5 miles of the survey area and in the Canyon Rims SRMA. Note that nesting habitat from the 1997 and 2000 data was combined and dissolved to eliminate modeled nesting habitat overlaps from the two models.

Table 3. 1997 and 2000 Willey-Spotskey MSO Habitats within and near the Project.

Area Name	MSO Modeled Habitats in acres (Willey and Spotskey 1997 & 2000)	
	Nesting (1997 & 2000 combined)	Foraging (1997)
Canyon Rims SRMA	14,996	23,489
Canyon Rims SRMA Critical Habitat	14,156	7,175
0.5 mile Survey Area Buffer	2,818	4,835
0.5 mile Survey Area Buffer Critical Habitat	2,546	569

Potential nesting habitats found within a 0.5 mile of the project in found in four areas:

- Portions of 4.7 miles of the most northern seven miles of the Anticline Overlook Road (the gravel road leading to the Anticline Overlook Lockhart Rim Survey Area) and a small portion of the Kane Creek-upper main Survey Area
- The last three and a half miles of paved road leading to the Needles Overlook (not evaluated or surveyed)
- A 2.1 mile section of paved road adjacent to a side drainage of Hart's Draw (not evaluated or surveyed)
- Another 1.25 mile section of paved road adjacent to another side drainage of Hart's Draw (Windwhistle/Harts Draw Survey Area).

5.2 Surveys

The following information is presented in order to provide a general history of MSO surveys and activity within the 0.5 mile buffer of the survey area of the Anticline Overlook Road where the gravel road will be upgraded to a paved road. All modeled habitats within 0.5 miles of the Anticline Overlook Road have been assessed for suitability, with the majority of the suitable habitats found within the Lockhart Rim Survey Area and a remaining very small portion (approximately 25 acres) within the of the Kane Creek Upper Main Survey Area. The Lockhart Rim Survey Area, developed in response to a seismic project, was surveyed in 2012 and 2013; audial calls were detected from a lone male. The location of these calls is southeast of Pyramid Butte and west of Dripping Springs, approximately 1.5 miles from the project. This male has been determined to have a mate due to behavior, but the mate was not been identified during surveys. The area the male called from has been determined to be a PAC due to his behavior. The Kane Creek-upper main Survey Area, developed in response to grazing renewals and recreational activities, was last surveyed in 2015 and 2016 and no MSOs where identified. (BLM 2015a, 2016a). **Figure 3** displays previously surveyed areas near the Anticline Overlook Road where the road will be paved and the location of the PAC 1.5 miles from the project.

Within 0.5 miles of the Needles Overlook Road, where project activities include improvements to the currently paved road, a small portion the Needles Overlook Road 0.5 mile buffer intersects with the Windwhistle/Harts Draw Survey Area. This survey area was developed for the renewal of the grazing permit in that area. Suitable habitats were protocol surveyed in 2006 and 2007 and informal 'sweeps' were performed in 2011, 2012, and 2016. No owls have been detected. These informal 'sweeps' are designed to actively look for MSOs using a strategy is similar to one employed by Canyonlands National Park (Schelz et al. 2003)

No PACs or MSO detections have been identified within 0.5 miles of the project (BLM 2015a).

5.3 Habitat and Survey Summary

- Suitable nesting habitat occurs within a 0.5 mile buffer of the project;
- Suitable foraging habitat occurs within a 0.5 mile buffer of the project;
- No PACS are known that exist adjacent to, or overlap, the 0.5 mile buffer of the project;
- Protocol-level surveys for MSO have been conducted in the following locations within the 0.5 mile buffer of the project along the Anticline Overlook Road:
    - A portion of the Lockhart Rim Survey area overlaps the 0.5 mile buffer of the project at the north end of the project (Anticline Overlook Road). Surveys were last conducted in 2013 and a PAC was designated as a result of this survey but the PAC is not within the 0.5 mile buffer of the project. Because three years have passed, the BLM is scheduled to conduct surveys in this area again in 2017 and 2018. Surveys for MSO are current for this area.
    - Kane Upper Creek Main survey area overlaps the 0.5 mile buffer of the project on the northeast side of Anticline Overlook Road. Surveys were last conducted in 2015, and results are valid through 2018. Survey results for the 2015/2016 survey effort were negative.
- The Windwhistle/Harts Draw Survey Area overlaps with a portion of the paved Needles Overlook Road where protocol surveys where performed in 2006 and 2007 and informal 'sweeps' were performed in 2011, 2012, and 2016. Survey results for the 2006/2007 survey effort and following 'sweeps' were negative.
- There is unevaluated modeled suitable nesting habitat along two segments of the paved Needles Overlook Road (within the 0.5 mile buffer), that will be evaluated and surveyed as needed if proposed activities occur during the nesting season as per the Environmental Protection Measures (**Section 1.1.1**).
- Environmental Protection Measures (**Section 1.1.1**) will be applied to all above mentioned Surveys Areas as applicable.

5.4 Critical Habitat

On August 31, 2004 the USFWS issued a final rule designating critical habitat for the MSO (*69 FR 53182*). Critical habitat boundaries were expanded with the final rule. Within the critical habitat boundaries, critical habitat only includes protected or restricted habitat (USFWS 1995, 2012). Critical habitat is designated by identifying Primary Constituent Elements (PCEs) that provide physical and biological features necessary for the species' survival (USFWS 2012a).

PCEs related to Canyon Habitat include one or more of the following:

- Presence of water (often providing cooler air temperature and often higher humidity than the surrounding areas;
- Clumps or stringers of mixed-conifer, pine-oak, pinyon-juniper, and/or riparian vegetation;

- Canyon walls containing crevices, ledges, or caves; and
- High percentage of ground litter and woody debris (USFWS 2012a).

PCEs related to the Maintenance of Adequate prey species include:

- High volumes of fallen trees or other woody debris;
- A wide range of tree and plant species, including hardwoods; and,
- Adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration (USFWS 2012a).

PCEs for Forest Structure are also available, but do not relate to the habitat available in the vicinity of the project.

Critical Habitat (CP-14) boundaries for MSO overlaps with areas of the project (**Figure 3**). Critical Habitat was likely designated in this general area due to the presence of canyon walls, the proximity of the Colorado River as a water source, and the presence of pinyon-juniper woodlands, and meets the PCEs described for Canyon Habitat. **Table 3** indicates the potential MSO habitats depicted by both Willey-Spotskey MSO Habitat models located within critical habitats within the 0.5 miles of the survey area and in the Canyonlands SRMA

6 Anticipated Effects

This section describes the expected effects of the project based on 50 percent level of design. The disturbance areas are defined broadly enough that impacts are not anticipated to exceed those limits as the design progresses. Disturbance areas at the 50 percent design stage of the project are smaller than the 25 foot survey area defined in **Section 1.3, Areas Analyzed**.

The existing 'roadway prism' is the existing land surface already occupied by the paved and gravel roads, the road shoulder, areas now used for parking, pull offs, culverts, guardrails, intersections, entryways to campgrounds and other faculties or other disturbed areas associated with road use.

New disturbance areas are used to evaluate impacts to the species analyzed and are considered in this section as either temporary or permanent. Permanent disturbance areas consist of new ground disturbance that will last beyond the construction timeframe, and include areas associated with new or expanded guardrails, culverts, slope flattening, parking areas, and intersection improvements. The Anticline and Needles Overlook Roads and existing roadway prism disturbances were not considered a permanent disturbance because these areas are currently disturbed. Temporary disturbance areas are those that occur during the construction timeframe, but will be rehabilitated back to existing conditions upon project completion, and are comprised of staging areas and 25 foot buffers of project activities such as slope flattening and culvert work areas, where it is likely the contractor will require additional room for construction. A 25 foot temporary disturbance buffer was applied to Anticline Overlook Road to account for temporary construction disturbance while paving and shouldering the roadway. Temporary impacts outside of the existing roadway prism during repaving activities on Needles Overlook Road are not anticipated.

Direct effects are those effects caused by the proposed action and that occur at the time of the action. Examples of direct effects include, but are not limited to: mortality, harm or injury, failed breeding attempts, interference with food resources and migration patterns, loss or degradation of habitat, and displacement resulting from construction-related activities. Areas of construction that do not have connection to species habitats or occur when the species is not present are not anticipated to produce any direct effects to any species or their habitats.

Indirect effects are "those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur" (50 CFR § 402.02). Indirect effects are typically associated

with the operation of the facility (e.g., bridges and roadways). Examples of indirect effects include, but are not limited to: increased vehicle capacity, vehicle collision mortality, noise and vibration, changes in the availability or use of the foraging habitat or availability of prey, and altered access to sensitive areas.

6.1 Mexican Spotted Owl Effects

The Moab 2008 RMP requires protocol MSO surveys prior to temporary actions within suitable and critical MSO habitats and if nesting MSO are detected (within 0.5 miles of the project), the project would be delayed until outside the nesting season (March 1 – August 31). This requirement will ensure temporary construction actions will not occur within the 0.5 mile nesting buffer where MSO could be actively nesting, therefore, no direct impacts to nesting MSO are predicted to occur.

Direct Effects: The majority of the project would occur within the existing roadway footprint, so little to no ground disturbance would occur as a result of the project. Permanent and temporary vegetation removal would occur as a result of various construction activities, including slope flattening, modifying/creating parking areas, using staging areas, intersection improvements, and culvert replacement and extensions along both Anticline Overlook Road and Needles Overlook Road. Tree and shrub removal that could provide foraging habitat for MSO would occur as a result from the project. It is estimated that a total of 3.7 acres of permanent and 18.7 acres of temporary disturbance would occur to foraging habitat designated by the 1997 Willey-Spotskey MSO Habitat Model (**Figure 4**). The total 22.4 acres of impacted foraging habitat represents 0.1 percent of the total 23,489 acres of available foraging habitat identified by the 1997 Willey-Spotskey Habitat Model available within the Canyon Rims SRMA. Additionally the total represents less than 0.5 percent of the 4,835 acres of foraging habitat within the 0.5 mile buffer of the survey area (**Table 3**).

It is estimated that up to 5.8 acres of pinyon-juniper shrubs and up to 46 individual pinyon-juniper trees would be removed from the project. Thirty individual pinyon-juniper trees and 2.7 acres of pinyon-juniper shrubs are located within 1997 Willey-Spotskey-identified foraging habitat (**Figure 4**). The tree and shrub areas removed are directly adjacent to the roadway and are unlikely to be used frequently by foraging MSO. Foraging habitat close to the roadway may increase the risk of vehicular collision with MSO. Therefore, the removal of this habitat could potentially lower the chances of MSO being struck by vehicles.

Direct effects to foraging MSO would not occur from noise or visual disturbance during construction due to the implementation of Environmental Protection Measures (**Section 1.1.1**) that restrict project activities if MSO occupancy occurs.

Indirect temporary and long-term effects may also occur to MSO from the removal of vegetation that provides habitat for prey, which subsequently could lower the availability of prey for MSO foraging near the project. However, these impacts are estimated to be 0.1 percent of the habitats in the area and therefore are expected to be negligible.

Table 4: Foraging habitat impact calculations.

Foraging Habitat Impacted by Project Activities (acres)		Area Name	Foraging Habitat Available (acres)	Foraging Habitat Impacted by Project Activities (percent)		
Temporary	Permanent			Temporary	Permanent	Total
3.7	18.7	0.5 mile Survey Area Buffer	4,835	0.08%	0.39%	0.47%
		Canyon Rims SRMA	23,489	0.02%	0.08%	0.1%

Cliff faces that could provide nesting habitat for MSO are located adjacent to both the Anticline and Needles Overlooks (within approximately 90 to 95 feet). Portions of the Anticline Overlook and associated MSO nesting habitat falls within the Lockhart Rim and Kane Creek survey area and a short segment of the Needles Overlook Road falls in the Windwhistle survey area. Past survey efforts (**Section 5**) have not identified MSOs within 0.5 miles of the project. These surveys cover the best nesting habitats in this area, though there is some limited potential habitats (according to the Willey-Spotskey models) that have not

been evaluated or surveyed yet. The project location is approximately 7,920 feet (1.5 miles) from the closest MSO PAC, which is greater than the USFWS guidance of limiting activity within 2,640 feet (0.5 miles) of a known PAC during breeding season (March 1 to August 31) (BLM 2016a). Additionally, Environmental Protection Measures that involve conducting protocol-level surveys for nesting individuals as required by the BLM MFO 2008 RMP, would be conducted for the project and proper mitigation measures would be implemented if nesting owls were found within 0.5 miles of the project (**Section 1.1.1**). Therefore, direct effects from the proposed project would not impact nesting individuals.

Indirect Effects from Visitation and Recreation Use Increases: The project is not expected to result in an increase in visitation to the Canyon Rims SRMA, as access into the area will not change, but the current visitation use within the SRMA, as discussed below, may change as a result of paving a now graveled Anticline Overlook Road. The Canyon Rims SRMA encompasses approximately 101,531 acres and receives about 85,000 visits per year (BLM 2015b). Visitors access the area via U.S. Highway 191 to enjoy the two well-known viewing areas (Needles Overlook and Anticline Overlook) that provide long-range views of the Colorado River and Canyonlands National Park, as well as opportunities for distant views of mountains, canyons, basins and rock formations, and wide open spaces. An extensive system of unpaved routes originally created by the oil and gas and livestock industries traverse 335 miles of the SRMA (BLM 2002). Main access into the Canyon Rims SRMA is via the paved Needles Overlook Road.

The Canyon Rims SRMA experiences low to moderate visitation and recreation use that typically consist of unique driving experiences and visitation that varies with seasons. Historical use for the area has reached or exceeded 85,000 visitors annually (BLM 2015b) Annual increases of approximately 3.1 percent are estimated based on years of historical data (BLM 2016c) More recent traffic counter data indicates an estimated 85,000 visitors in 2015 (BLM 2015b). The most recent data from the BLM on visitation to the Canyon Rims SRMA is provided in **Table 5**.

Table 5: Visits and Visitor Days by RMA (1 Oct 2015 – 30 Sep 2016)

Site	Current Assess	Primary Site Type	Visits	Visitor Days	Percent of Use
Anticline Overlook	Gravel	Scenic Overlook	2,452	460	2.3%
Dispersed Use	Entire Area	Dispersed Use	60,244	12,035	58.9%
Hatch Point Campground	Gravel	Campground	790	757	3.7%
Needles Overlook	Paved	Scenic Overlook	25,600	2,720	13.3%
Windwhistle Campground	Paved	Campground	4,658	4,464	21.8%
Total			93,744	20,436	

Along the western portion of the SRMA, where the proposed project is located, prime MSO habitats are found below steep cliffs in the canyons below. Both overlooks are above sheer canyon walls that rise typically 1,200 feet and at a minimum of 900 feet. There are no roads that allow for motorized or mechanized access to the canyons below within this area. Access to Lockhart Canyon, Harts Draw and their side canyons occurs from other areas.

Below is a discussion of current and future visitation and recreational use in the Canyon Rims SRMA. However, due to the steep and extensive canyon walls, much of these uses have not nor are expected to encroach upon the habitats below the rim.

Implementation of this project is not expected to increase visitation or the rate of visitation increases over the BLM projected 3.1 percent annual increase into the Canyon Rims SRMA, as access from Highway 191

will remain the same. (BLM 2016c) Most visitors to the area visit one of the two overlooks, and, as noted in Table 5 above, the Anticline Overlook, which is accessible by a gravel road only, receives approximately 10 percent of the visitation that the Needles Overlook, located adjacent to the paved road, receives. Likewise, the Hatch Point Campground (gravel road access only) receives approximately 17 percent of the use that the Windwhistle Campground (paved road access) receives. The lower use of the Anticline Overlook and the Hatch Point Campground is undoubtedly due to gravel road access and the considerable distance from the main highway, resulting in lengthy travel time. Most of the travel that occurs to the two overlooks consists of day trips from Moab by seasonal tourists that have limited time to spend in the Canyon Rims SRMA.

There is the potential that if the Anticline Overlook Road is paved, visitors may choose to additionally or alternately visit the Anticline Overlook due to the easier access, but the additional distance limits the amount of travel that can occur during the typical day trips from Moab, where most visitors stay. Most tourists that visit this area are on day trips and the additional travel to the Anticline Overlook may not be attractive to many visitors. Because of this, it is not expected that visitation to the Anticline Overlook will ever reach the same level as seen at the Needles Overlook. Any additional tourism travel along the now graveled Anticline Overlook Road would only be an expansion of the normal use now occurring on the Needles Overlook Road. This expanded use is expected to be mostly visitors driving along the road to the Anticline Overlook and will not infiltrate into the surrounding area. Camping at Windwhistle Campground is typically more attractive than the Hatch Point Campground as Windwhistle Campground offers running water, has easier and quicker access to Highway 191, and is located in a very picturesque setting. Therefore, minimal increases are expected at the Hatch Point Campgrounds

The Needles Overlook Road is already paved, and repaving the road is not expected to increase visitation. Expanded visitor use on to the Anticline Overlook Road may result in noise levels changing. Noise levels can range from "natural ambient" (<50 decibels [dB]) to "very low" (51–60 dB) (USFWS 2006) and vehicle noise levels range from moderate levels of 71-80 dB (passenger vehicles and street-legal motorcycles) to high levels of 81-90 dB (high speed highway traffic including RVs, large trucks and buses) (USFWS 2006). Although the ambient noise levels within the survey area have not been measured, it is assumed to be in the range of "natural ambient" (<50 decibels [dB]) to "very low" (51–60 dB) unless vehicles are traveling on the gravel road. Noise levels from vehicle travel may reach moderate levels of 71-80 dB (passenger vehicles and street-legal motorcycles). Levels of 81-90 dB (high speed highway traffic including RVs, large trucks and buses) are not anticipated due to speed and weight restrictions. Vehicles currently traveling on the Needles Overlook Road would likely be closer to moderate levels because of the low speed limit and type of vehicle whereas, paving of the Anticline Overlook Road is not expected to increase noise levels above the current 'moderate levels' of vehicle noise. Paving this road may increase the occurrence frequency of vehicle noise as visitor use expands. Likewise, noise levels at the Hatch campground would remain relatively the same but the frequency of noise may increase as the campground experiences additional use.

Noise levels from road-maintenance equipment (rock crusher, loader, bulldozer/roller and grader) were evaluated in mixed-conifer forests to evaluate potential impacts to MSO. Results found that sound levels were greater in trees than on the ground at all distances, sound levels decreased with distance, and sound levels were greater in meadows than in forests at comparable distances. MSOs may able to hear all sound sources tested at distances of 1,312 feet (0.25 miles) or less (Delaney & Grubb 2004). Additionally MSO seem to be flushed by noise with lower frequency range. For instance, MSO were flushed by chainsaw noise (≤46 dB) which were much lower than helicopter noise levels that flushed owls (≥92 dB) (Delaney et al. 1999b). Based on studies mentioned above, noise from "moderate" vehicular traffic near suitable MSO habitat would travel less through the pinyon-juniper woodlands where foraging habitat exists.

Additionally, in 2012 the Moab BLM in coordination with Patara Oil and Gas LLC preformed noise emission surveys in the Lisbon Oil Field to investigate noise outputs from various gas well compressors and the noise emissions into suitable MSO habitats in the canyons below. The survey was in response to Patara constructing a test sound building to reduce gas compression noise emission. The inventory sites

were adjacent and above the breeding habitat but somewhat below the rims of the canyons. The settling is somewhat similar to the Canyon Rims area though nesting habitats at Canyon Rims have greater distances due to the taller canyon walls and much larger canyon system. Less noise deflection off the canyon walls in the Canyon Rims area into the bottom is expected as all activities related to the road are fully above the canyon walls. During this work, it was determined the noise levels of 80 decibels, at 150 feet from the source decreased to below 45 decibels except for in the direction of the wind where 200 feet was needed to reduce noise to the same level. Readings were taken at various levels below the source with a calibrated Type 1 instrument (used when high accuracy and repeatability is required).

Noise level from traffic are predicted to be less than 80 decibels and would be expected to dissipate to below 45 decibels within 150 feet; therefore less than 15 acres of nesting habitat may continue to be impacted by levels of noise above 45 decibels but at a more frequent rate. The three areas along the Anticline Overlook Road where this would occur would be at the Anticline Overlook, the Dripping Spring Overlook and the head of a side canyon just south of Dripping Spring. These areas represent less than 0.5 percent of the breeding habitat within 0.5 miles of the project. Increases in noise frequency in these limited areas are expected to be negligible due to the overall availability of suitable habitats for potential MSO dispersal and therefore in significant.

In addition to noise, visual disturbance from expanded visitor use of the Anticline Overlook Road may occur. Visual impacts are reported to be more influential than auditory disturbances to raptor species (USFWS 2004). Research indicates that the majority of MSO become alerted by hikers at 180 ft. and flush when individuals approach 79 to 39 feet. Based on studies mentioned, visual disturbance from vehicles would potentially impact foraging MSO present near the Anticline Overlook Road if nesting was to occur within 0.5 miles of the road. As of 2013 no known nesting MSOs are present near the project based on historical surveys and the closest PAC is approximately 1.5 miles from the project. Less than 0.5 percent of the nesting habitat identified in the 0.5 mile buffer of the project is within 200 feet from the road. Increases in visual disturbance in these small areas is considered insignificant considering the overall availability of suitable habitats for MSO dispersal. Therefore, visual disturbance are not expected to impact known nesting individuals.

Table 5 indicates that approximately 60 percent of the use along these two roads is dispersed use. Dispersed uses include vehicle use that did not travel to any of the developed recreational areas (overlooks or campgrounds) in the area. This use would include any travel related to grazing, ranching, oil, gas and mineral activities, property and home owners, federal, state and county employees, sightseeing, four wheeling and ATV use to name a few activities. Though dispersed use currently is less after the intersection of the now graveled road, dispersed use by most of the mentioned users is not expected to change as a resulting paving as gravel roads do not interfere with most of these uses. With the exception, possibly of the causal sightseers not traveling to recreational area, unwilling to travel graveled roads who may now readily drive on the paved road. These causal sightseers are not expected to venture far from the newly paved road; those impacts from these users are captured in the above discussion on noise emission and visual disturbances.

A smaller number of visitors enjoy a semi-primitive motorized experience by touring the backcountry by four-wheel drive and OHVs and occasionally these visitors may camp. Backcountry vehicle touring and camping occurs along the extensive system of 335 miles of unpaved routes originally created by the oil and gas and livestock industries (BLM 2002). The Anticline Overlook Road provides exclusive access to approximately 122 miles of these unpaved routes. The conversion of the Anticline Overlook Road from gravel to a paved surface would make these roads easier to access but it is not expected that the gravel road currently deters these backcountry visitors from seeking out and exploring semi-primitive motorized areas. Therefore, paving the Anticline Overlook Road is not expected to result in measureable expansion of backcountry touring and camping in the vicinity of the now graveled Anticline Overlook Road.

Hiking occurs on two developed hiking trails: the Windwhistle Nature Trail and the Trough Springs Hiking Trail, which are accessed from the Needles Overlook Road. The Hatch Wash Canyon system to the north

of the SRMA is accessed by hikers and backpackers seeking remote recreation experiences (BLM, 2002). This area can be accessed from side roads that originate from Highway 191 or from the Anticline Overlook Road. These roads that provide access to the Hatch Wash Canyon system and other remote areas, are difficult to travel on with many requiring 4WD vehicles and demand fairly lengthy travel times. The conversion of the Anticline Overlook Road from gravel to pavement would make these side roads easier to access initially, but due to the lengthy travel time and the difficulty of traveling on these road, it is not expected that there would be an increase in backcountry use because user would still need 4WD vehicles to travel on these access roads Therefore paving the Anticline Overlook Road is not expected to result in a measureable expansion of use by hikers and backpackers seeking remote recreation experiences in the Hatch Wash Canyon system or other remote areas accessible from the Anticline Overlook Road.

6.1.1 Determination

Direct impacts to nesting and foraging MSO are predicted to be negligible and therefore *discountable* due to required protocol MSO surveys prior to construction activities that would result in delaying the project to outside the nesting season (March 1 – August 31) if nesting owls are detected.

Indirect effects to MSO foraging habitat may occur from permanent vegetation removal after construction resulting in less prey habitat; however, these impacts are estimated to be 0.1 percent of the habitats in the area and therefore are expected to be negligible and *insignificant*.

Current travel on the Anticline Overlook Road is approximately 10 percent of what occurs on the Needles Overlook Road. Once paved, visitor use along the Anticline Overlook Road may increase, but this increase is not expected to reach levels similar to that on the Needles Overlook Road due to the extensive travel time and limited ability of tourists to visit both areas. Paving of the Anticline Overlook Road is not expected to increase noise levels above the current vehicle noise but may increase the frequency of vehicle noise and visual encounters as visitor use expands onto the newly paved road. Likewise, noise levels at the Hatch Campground would remain relatively the same but the frequency of noise and visual encounters may increase as the campground experiences additional use. Noise level from traffic is predicted to be at or below 45 decibels within approximately 150 feet of the road, and visual impacts are reduced at 180 feet from the road. Therefore 0.5 percent of the nesting habitat within 0.5 miles of the Project would experience negligible and *insignificant* effects from noise and visual disturbance that are not expected to reduce overall availability of suitable habitats for potential MSO dispersal.

As discussed above, increase use from semi-primitive motorized touring, backcountry camping and backpackers seeking remote recreation experiences is not expected as these users typically are not deterred by gravel roads, therefore any impacts are expected to be negligible and *insignificant*.

Dispersed use is not expected to change as a resulting paving as gravel roads do not interfere with most of these uses, with the exception, possibly of the causal sightseers. Therefore any impacts are expected to be negligible and *insignificant*.

Environmental Protection Measures (**Section 1.1.1**) would be implemented to reduce and eliminate some impacts. Based on this analysis, it is concluded that the project *may affect, but is not likely to adversely affect* MSO.

6.2 Critical Habitat Effects

Within the MSO critical habitat boundaries (CP-14), approximately 6,061 acres of critical habitat are located within 0.5 miles of the project. Approximately 2,946 acres of this habitat was not defined as habitat by the Willey-Spotskey MSO Habitat models (1997 and 2000). It consists of is sparsely scattered juniper trees, treeless sagebrush flats and open grasslands often bisected by dry, rocky drainages lined with junipers and do not contain any PCEs for either Canyon Habitat or Maintenance of Adequate prey species. Therefore this area does not possess any habitat attributes or PCEs that would provide physical and biological features necessary for MSO occupancy or use.

The remaining 3,115 acres of critical habitat within the 0.5 mile buffer of the project overlaps with the Willey and Spotskey Model (1997) and portions of this area may contain PCEs related to Canyon Habitat and Maintenance of Adequate prey. Of the 3,115 acres there are approximately 2,546 acres of potential nesting and 569 acres of potential foraging habitat within the 0.5 mile buffer of the project, according to the Willey and Spotskey Model (1997).

Direct project disturbances will impact 63 acres of designated critical habitat within the MSO critical habitat boundaries (CP-14); 45 acres of temporary and 18 acres of permanent disturbance. All habitats within the 63 acres is directly adjacent to the existing roadway, has had some level of past disturbance, and is not located on or adjacent to canyon walls containing crevices, ledges, or caves. Trees are limited, randomly occurring along the road, not in clumps or stringers and no riparian or mesic areas exist in the vicinity. Therefore PCEs related to Canyon Habitat are not found within the 63 acres of project impacts. Maintenance of Adequate prey PCEs are also absent as woody debris is lacking, invasive species such as cheatgrass (*Bromus tectorum*) dominate areas near the roads and parking area, and a diverse plants community is not found in the vicinity of the road. Additionally, approximately 58 acres of the 63 acres do not overlap with any habitats depicted by the Willey-Spotskey MSO Habitat models (1997 and 2000).

The remaining identified critical habitat that overlaps with project impact areas and the Willey-Spotskey MSO Habitat models (1997 and 2000) includes approximately 4.7 acres, which does not offer any PCEs as noted above; trees are limited and random, there are no riparian or mesic areas in the vicinity, woody debris is lacking, typically cheatgrass dominates these areas and a diverse plants community is not found in the vicinity of the road.

These 4.7 acres will incur surface disturbances that include the removal of trees as a result of the project. Of the 4.7 acres, three acres would be temporarily impacted and 1.7 acres would be permanently impacted. Trees that will be removed are located adjacent to well-traveled roads and are not expected to provide habitat support to any adjacent nesting or foraging habitats due, in part, to their proximity to long-existing disturbed areas and the lack of PCEs in this area. The three acres of temporary impacts would have active revegetation that would include reseeding with native seed mixes to stabilize soil and reduce weed infestation. The 1.7 acres of permanent impacts would be lost to permanent road surfaces or structures as mentioned above. As mentioned previously (**Section** Error! Reference source not found.), 30 trees and 2.7 acres of pinyon-juniper shrubland are planned for removal within the disturbance areas. Of those, only 12 trees and 0.8 acres of pinyon-juniper shrubland overlap with critical habitat and designated Willey-Spotskey foraging habitat (1997, 2000).

Project disturbance on 63 acres of designated critical habitat within the MSO critical habitat boundaries (CP-14) are *discountable* as the 63 acres where impacts will occur do not offer any PCEs for MSO. Additionally, the presence the roadway near trees to be removed may increase the risk of MSO landing in a tree and being struck by vehicles. Therefore, the removal of these trees could potentially lower the chances MSO-vehicle collisions.

6.2.1 Determination

Trees and vegetation near the roadway would be removed within 63 acres of designated MSO critical habitat boundaries (CP-14) as a result of the project. All habitats within the 63 acres is directly adjacent to the existing roadway and has had some level of past disturbance. As discussed above, impacts are expected to be *discountable*, as no PCEs are found within these 63 acres; there are no canyon walls containing crevices, ledges, or caves, trees are limited, randomly occurring, not in clumps or stringers and no riparian or mesic areas exist in the vicinity, woody debris is lacking, invasive species such as cheatgrass dominates this area, and a diverse plants community is not found in the vicinity of the road. Additionally approximately 58 acres of the 63 acres does not overlap with any habitats depicted by the Willey-Spotskey MSO Habitat models (1997 and 2000). It is anticipated that the project would *not result in the destruction or adverse modification* of MSO Critical habitat.

7 Summary

The Canyon Rims Road Improvement project will require paving a gravel road, repaving an existing paved road, slope flattening, intersection and parking area improvements, culvert cleaning, improving pullouts, and replacing guardrails. The project purpose includes improved access to recreation areas within the SRMA, enhancing safety, and reducing annual maintenance costs.

MSO is the only federally-listed species with potential to occur within the survey area. Habitat for the species is limited to areas near the Needles Overlook Road westward of the Y-intersection and along the west side of the Anticline Overlook Road. Foraging habitat overlaps with the project impact area, but no nesting habitat is present within the impact area. Nesting habitat exists within the steep canyon walls that exist as close as 90 to 95 feet from the project impact area. Permanent vegetation removal would occur along the roadside, and low-quality foraging habitat would be removed as a result of the project. No increase in visitor use into the Canyon Rims SRMA is expected but, the Anticline Overlook Road could experience increases in the frequency of noise and visual disturbance in the area. However, this is not expected to indirectly disturb foraging or nesting MSO that use the area. Protocol-level MSO surveys would be conducted prior to implementation of the project to ensure no nesting MSO are present near the project when construction activities occur. Critical habitat is present and overlaps with parts of the project. A total of 63 acres of critical habitat overlaps with project disturbance areas, but no critical habitat PCEs related to Canyon Habitat and Maintenance of Adequate Prey would be altered as a result of the project. Only minimal low-quality foraging habitat directly adjacent to the roadway would be removed.

As a result, it is concluded that the project *may affect, but is not likely to adversely affect* the MSO and it is anticipated that the project would *not result in the destruction or adverse modification* of MSO critical habitat.

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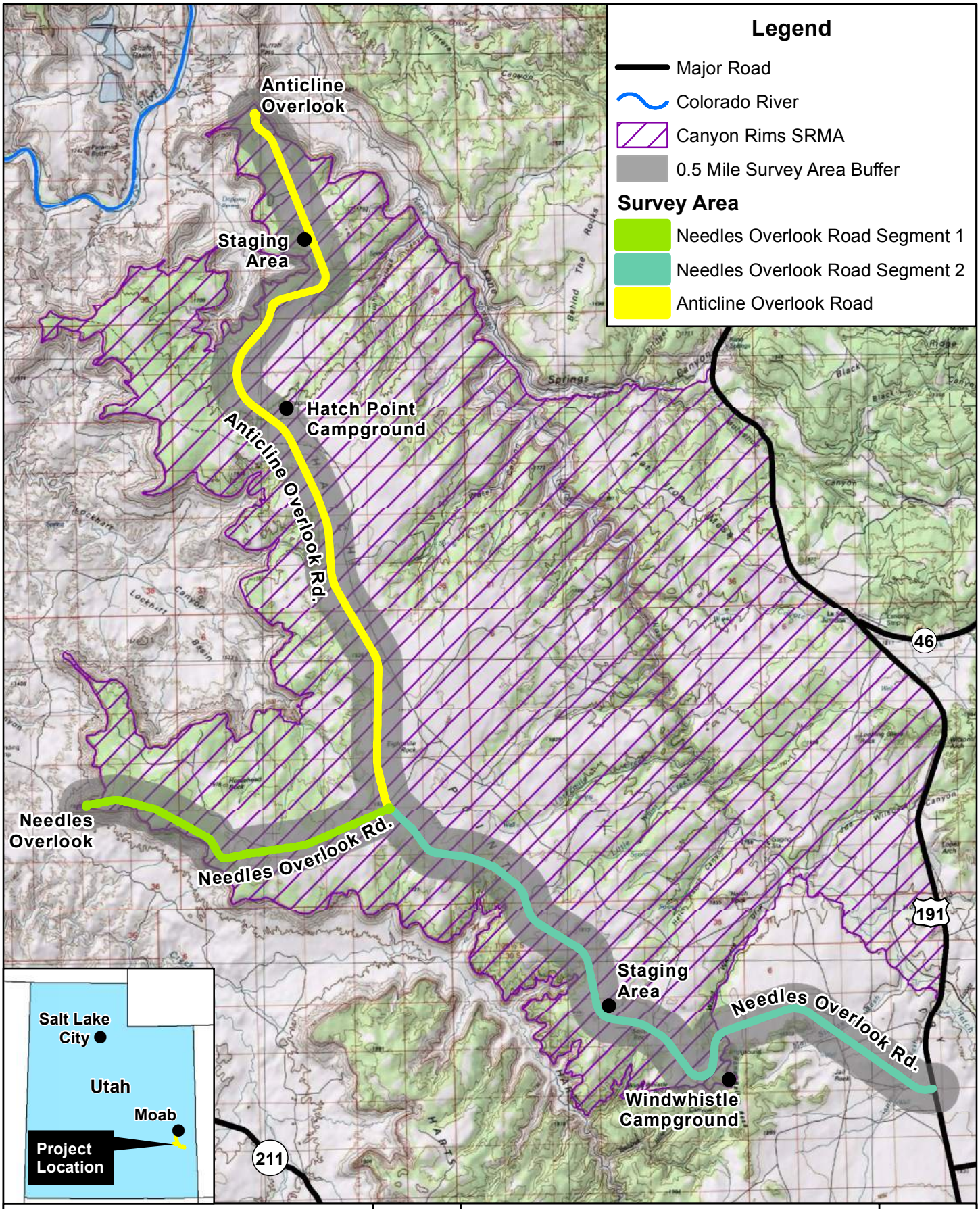
APPENDIX A: MAPS



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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

Project Overview

FIGURE 1

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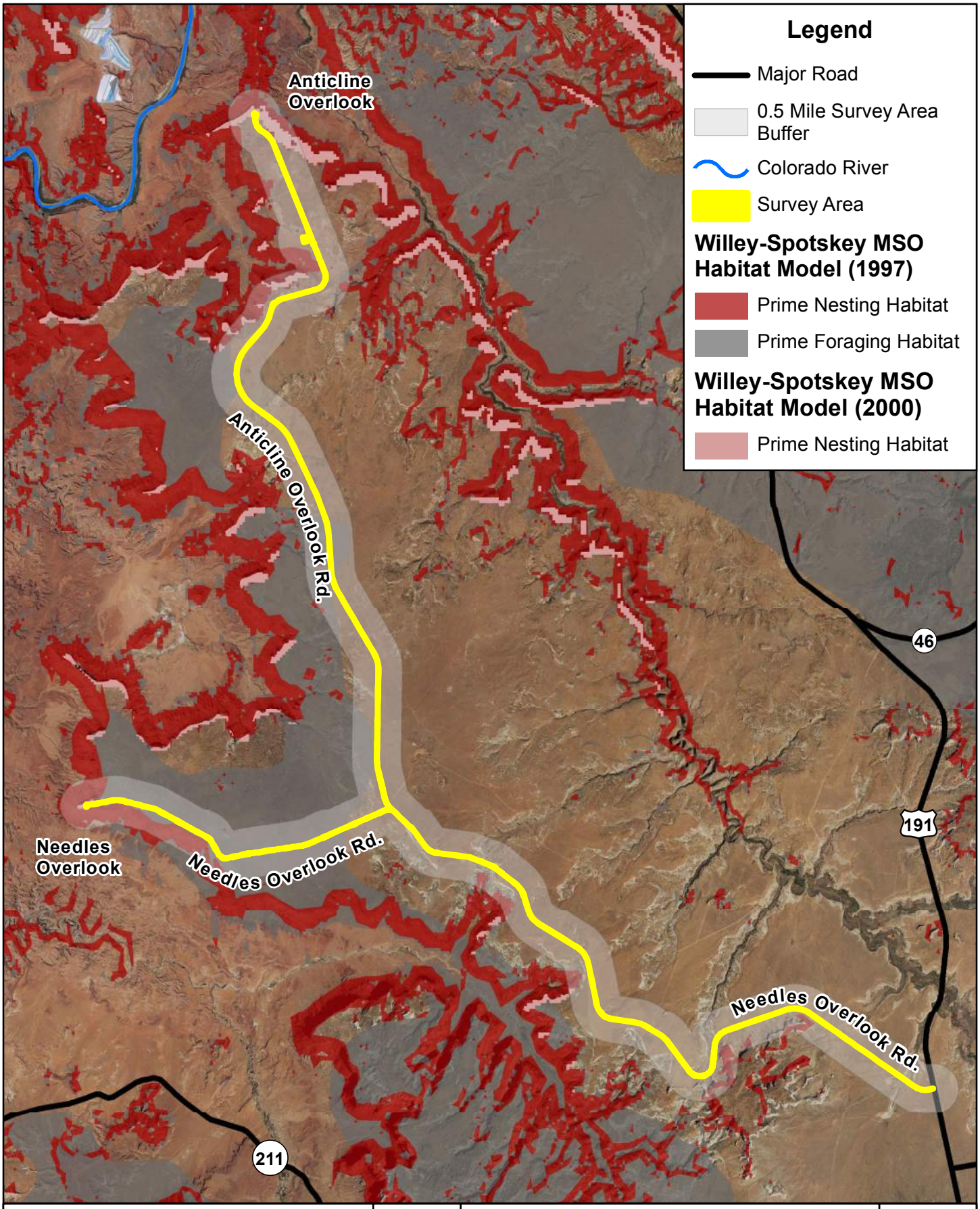

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Canyon Rims SRMA Road Network
San Juan County, Utah

Overview of 1997 & 2000 Willey-Spotskey's MSO Habitat Model Data

FIGURE **2**

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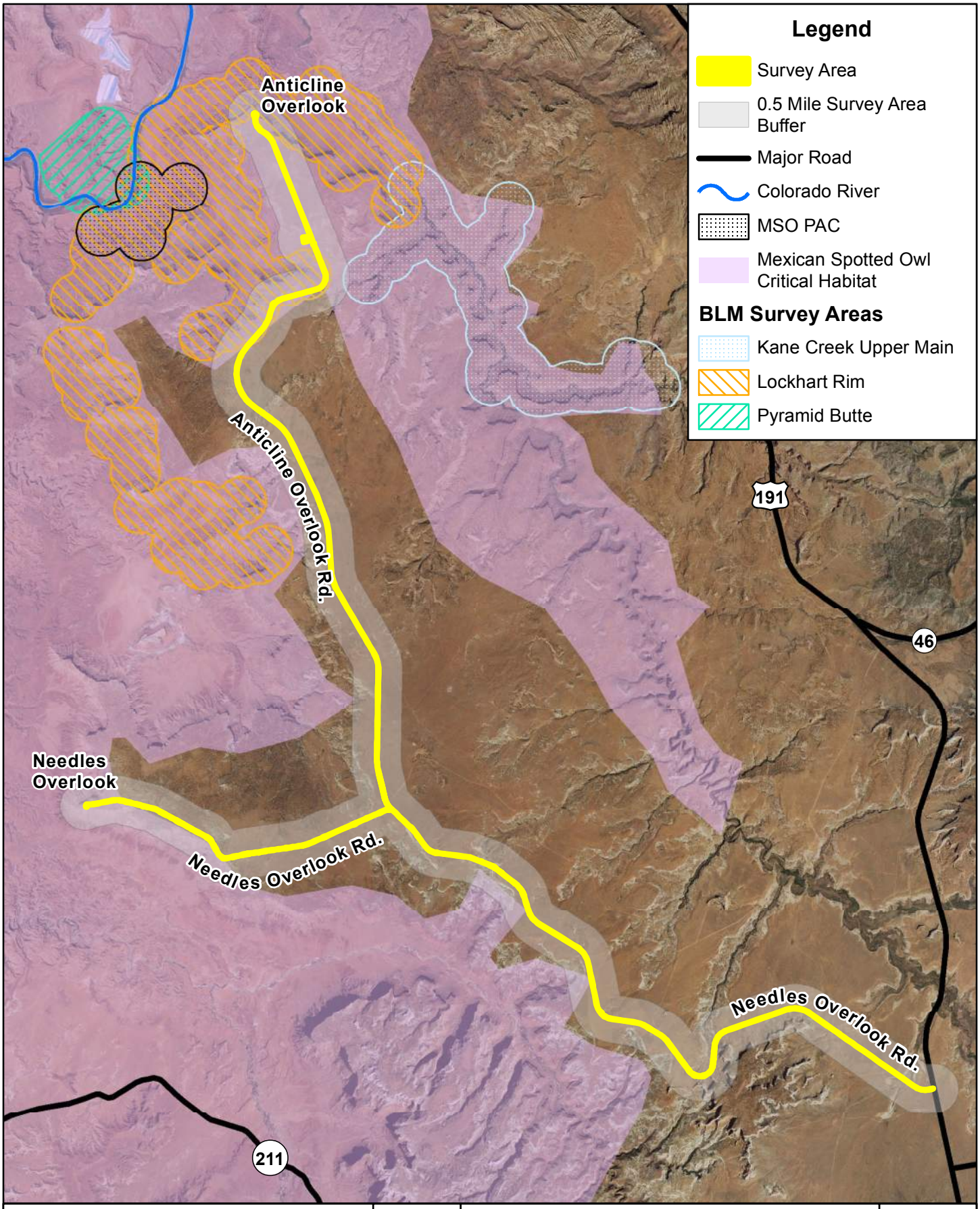

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Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Critical Habitat, BLM MSO Survey Areas, and MSO PACs

FIGURE 3

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Page 1 of 21

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San Juan County, Utah

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FIGURE
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Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

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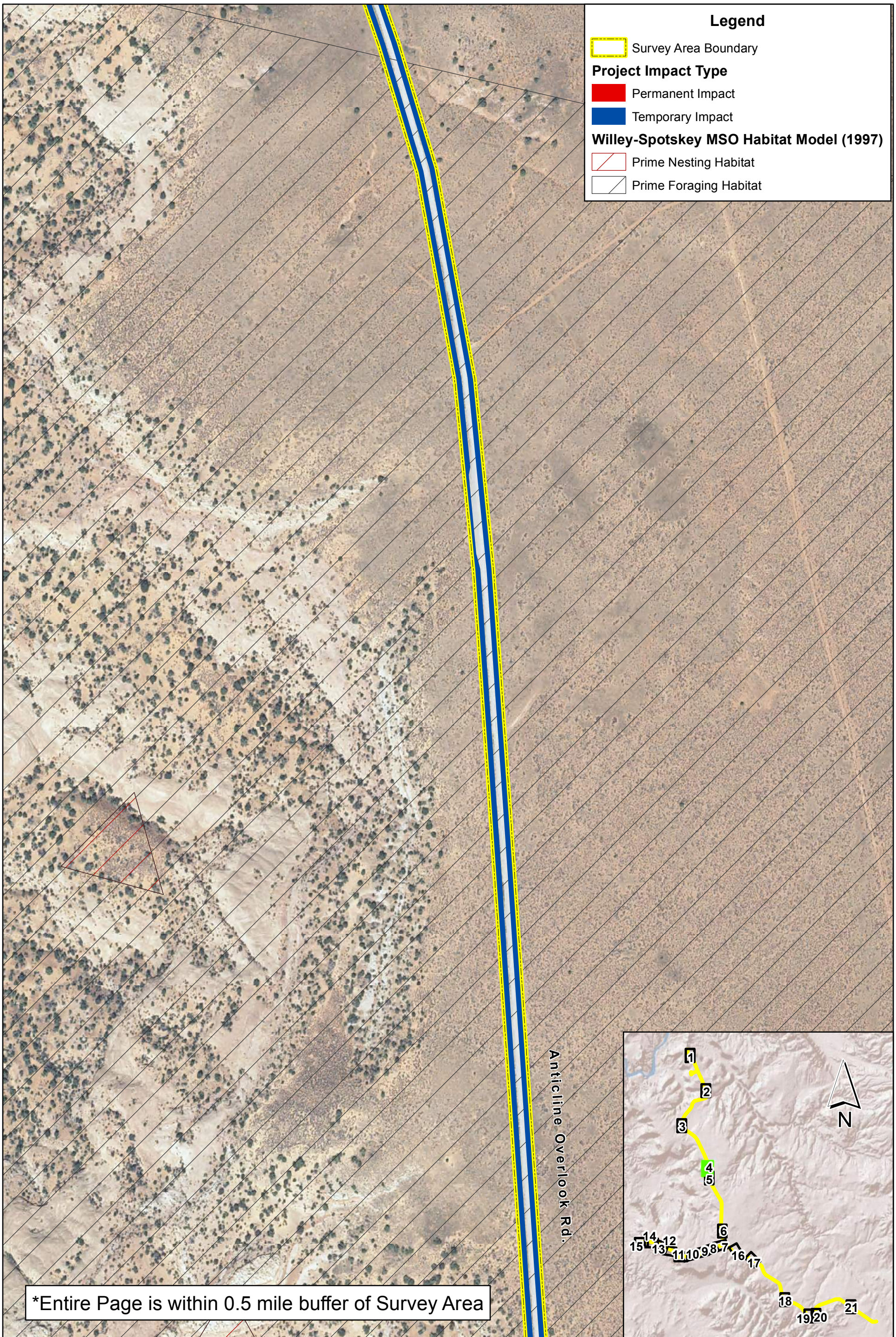

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San Juan County, Utah

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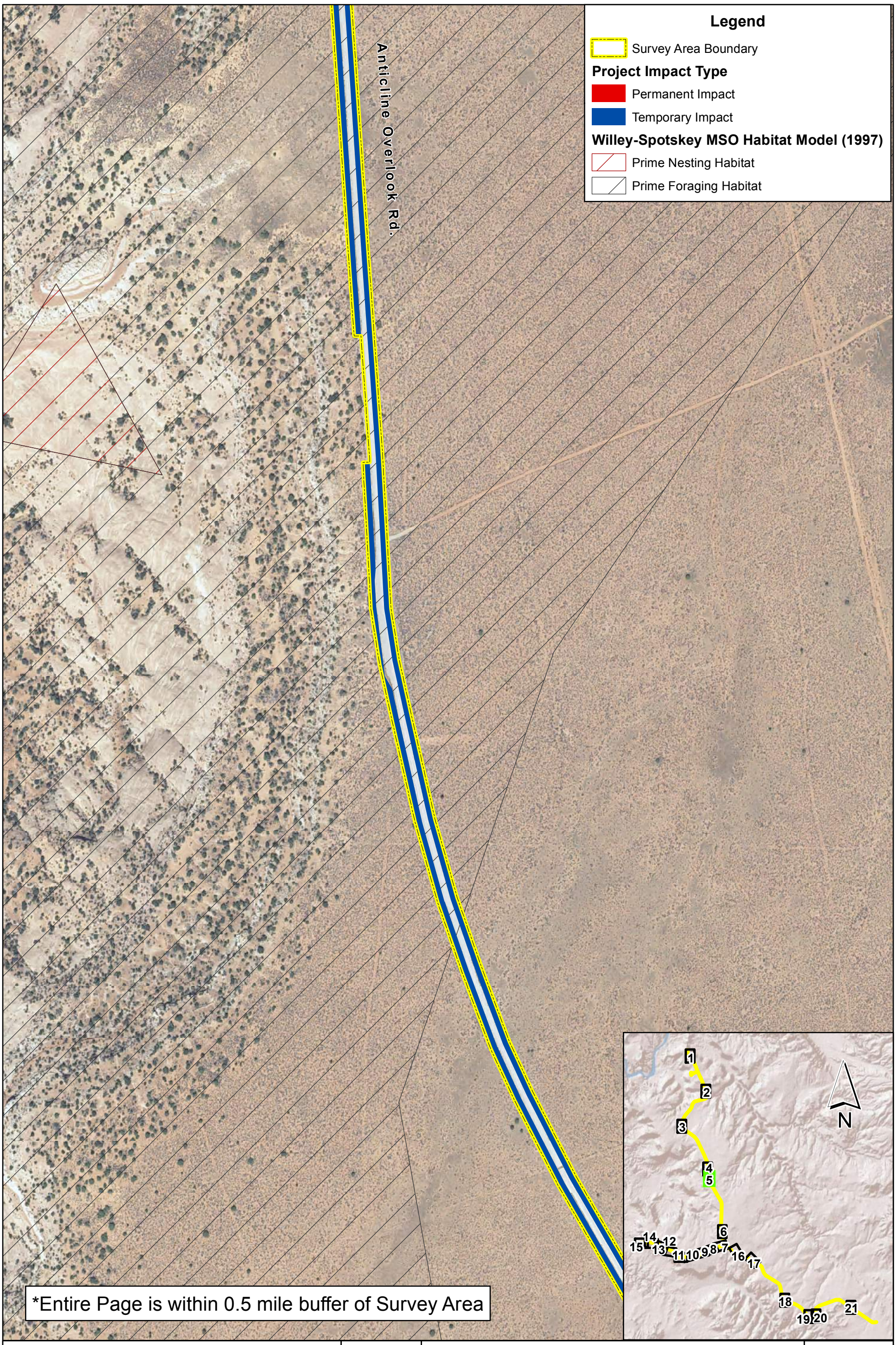

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Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

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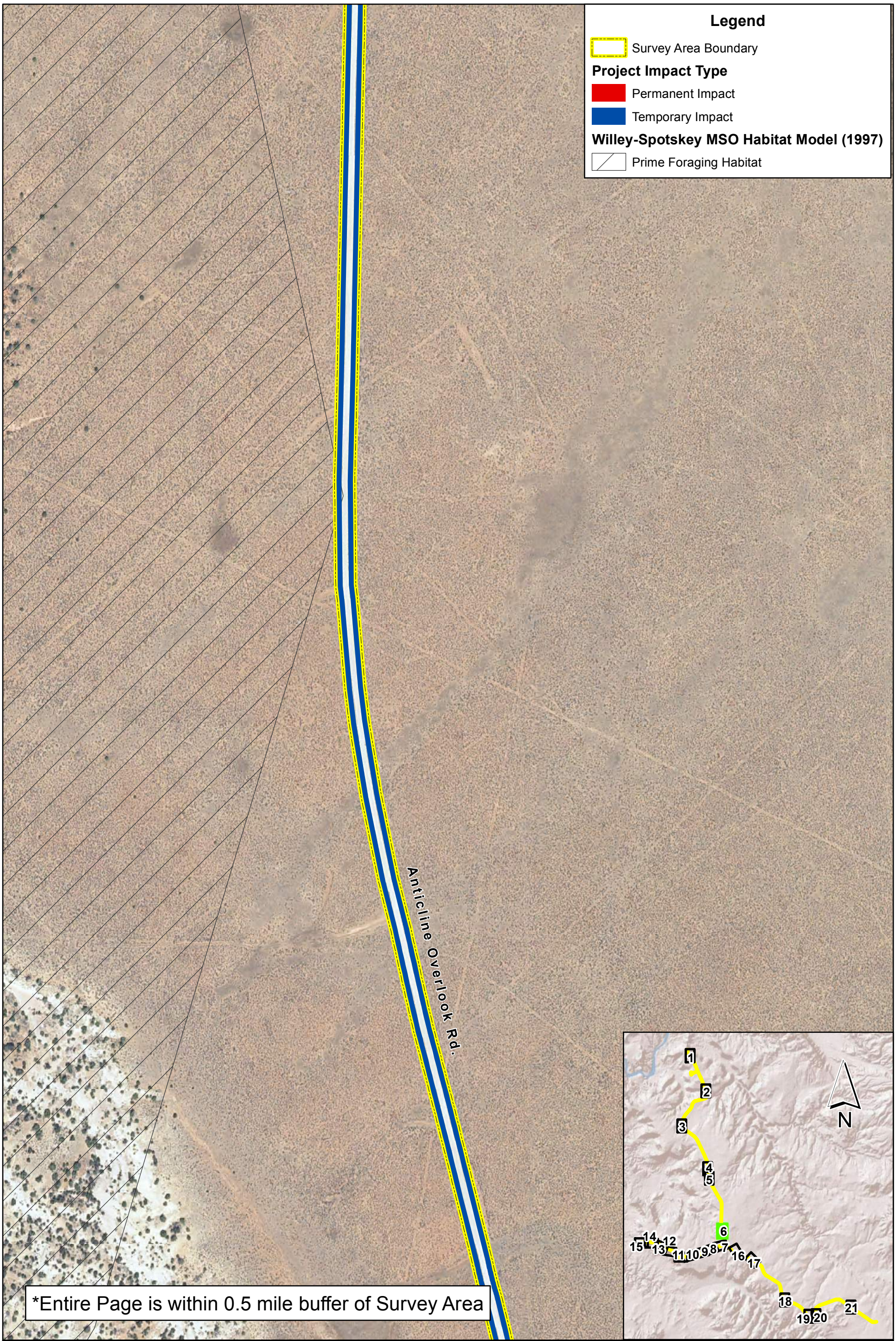

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Canyon Rims SRMA Road Network
San Juan County, Utah

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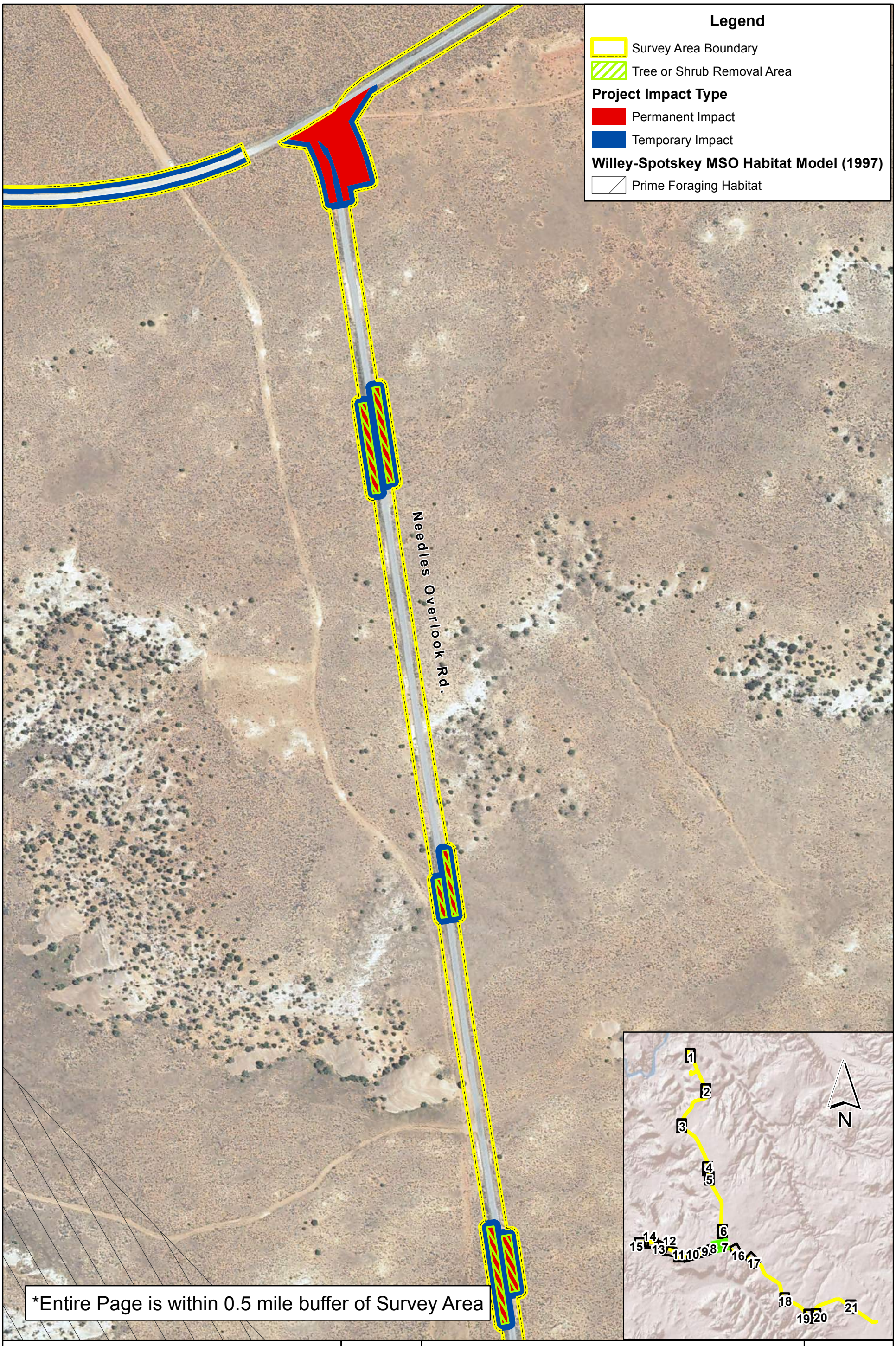

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Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

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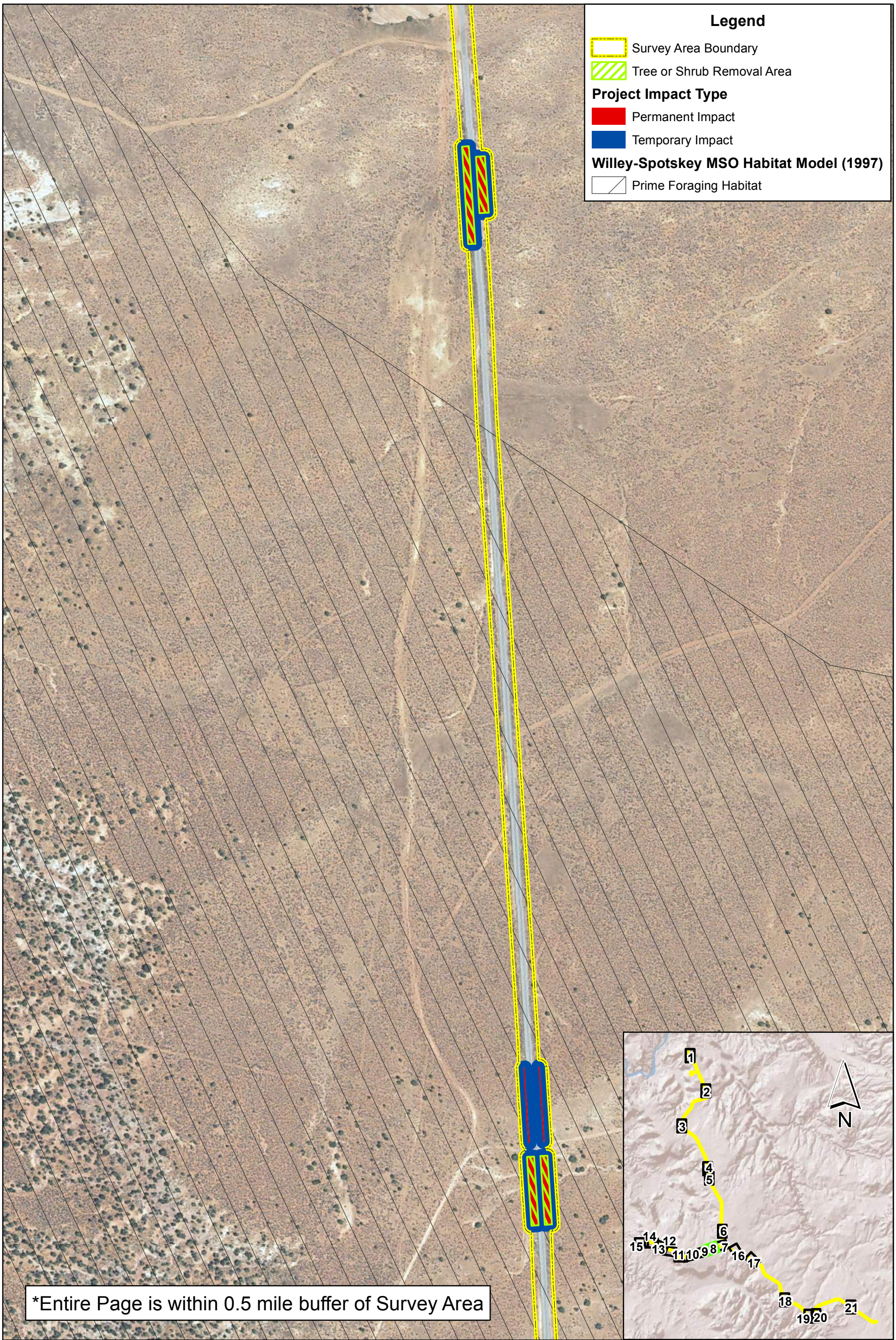

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

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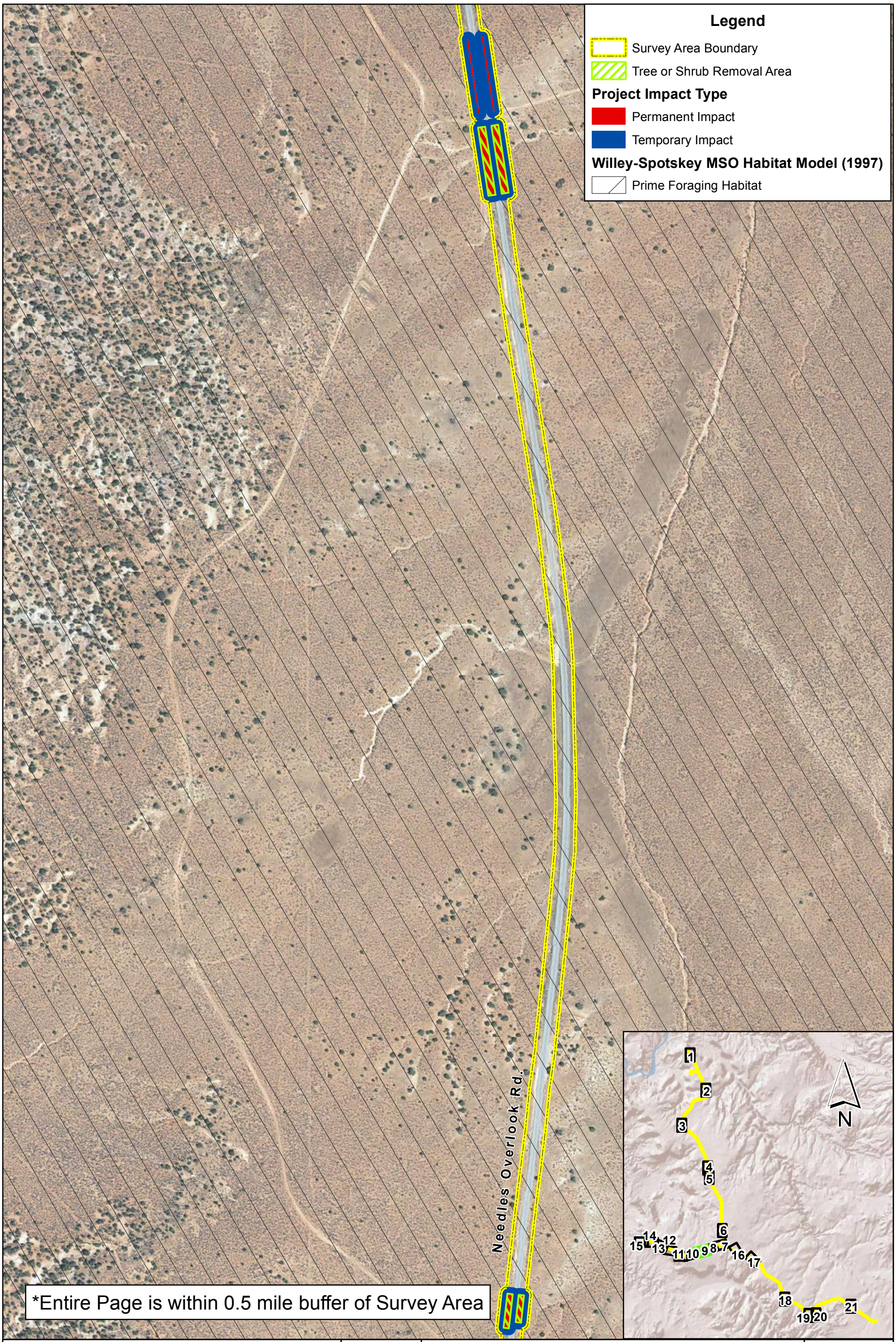

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

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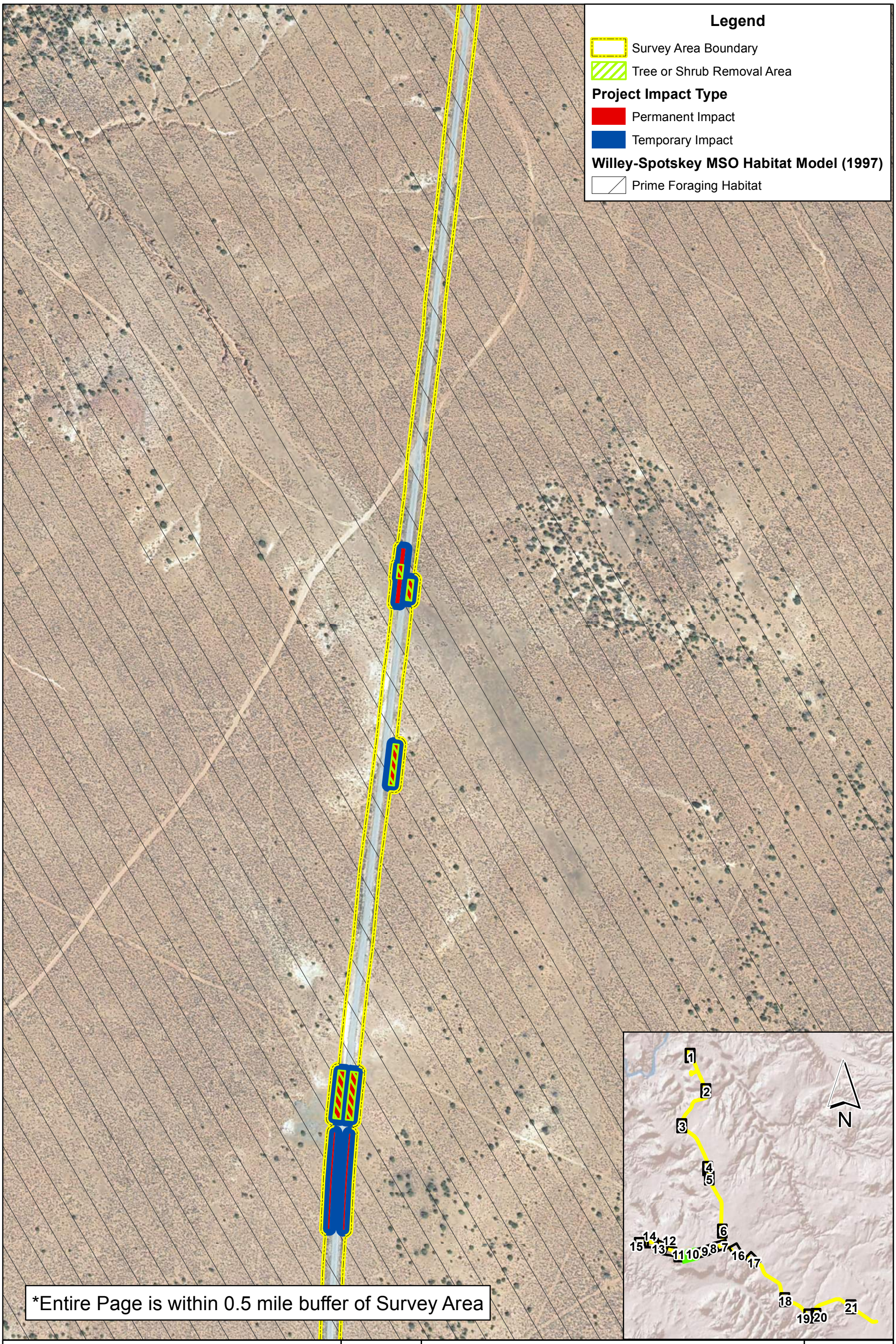

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

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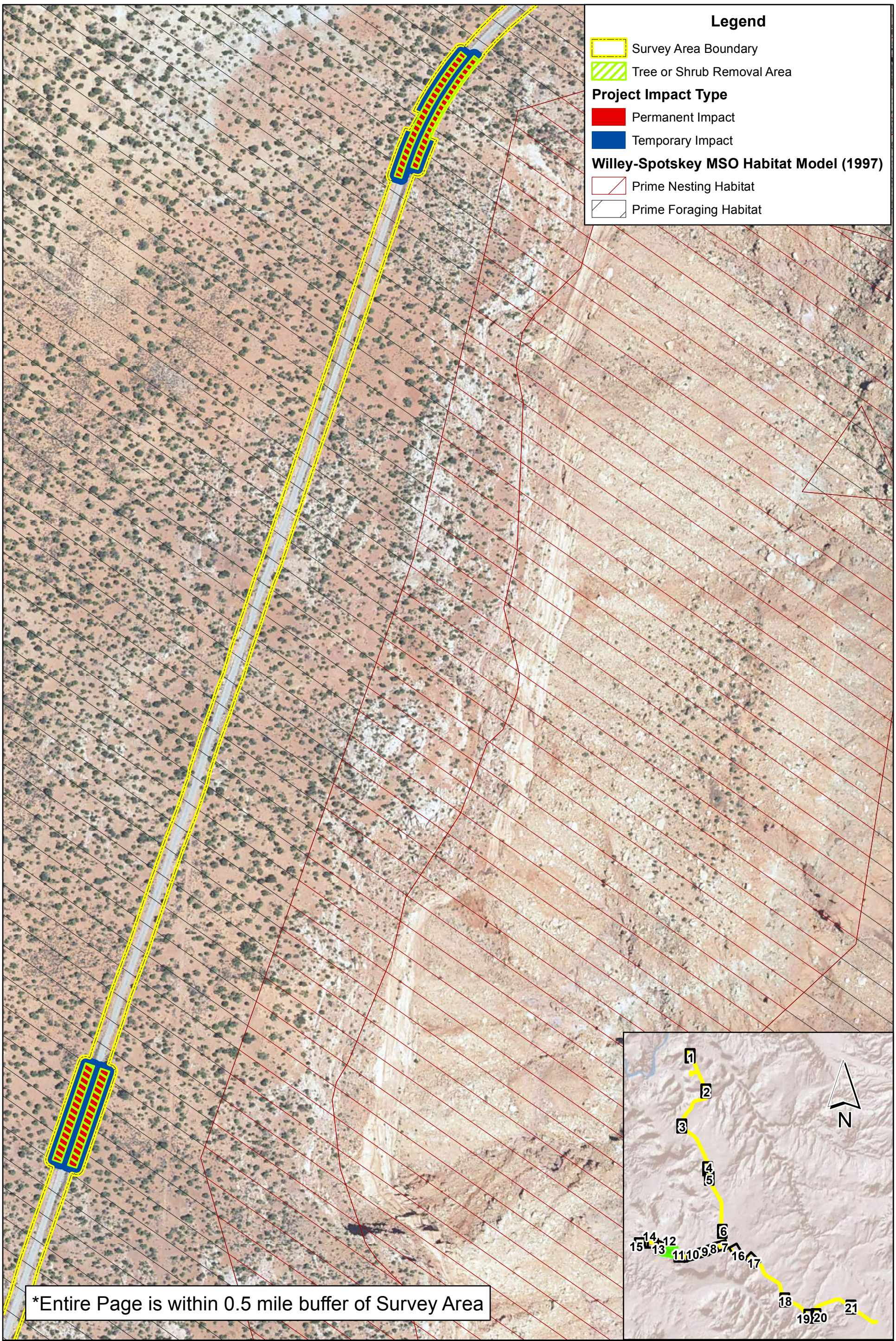

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

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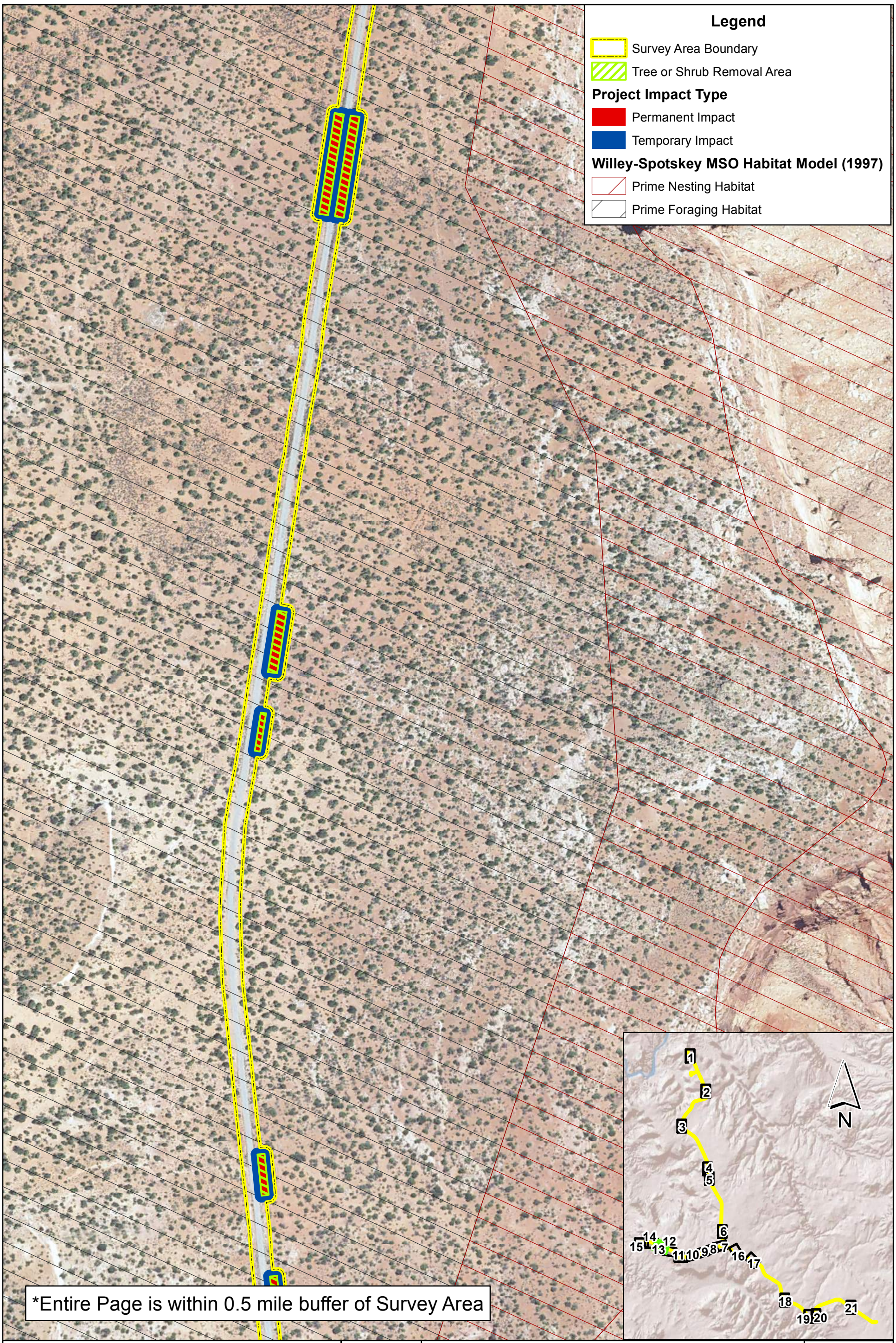

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

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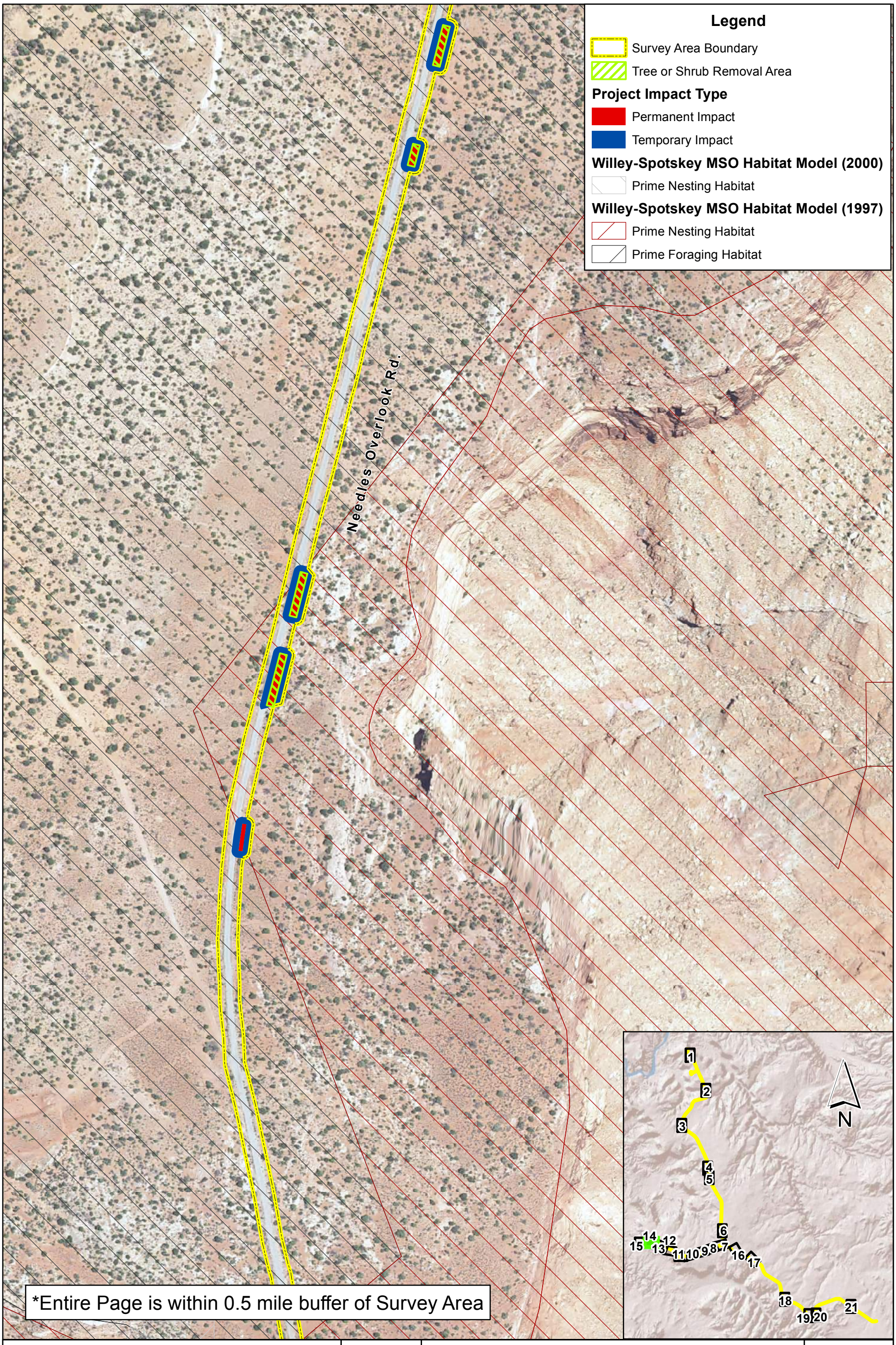

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

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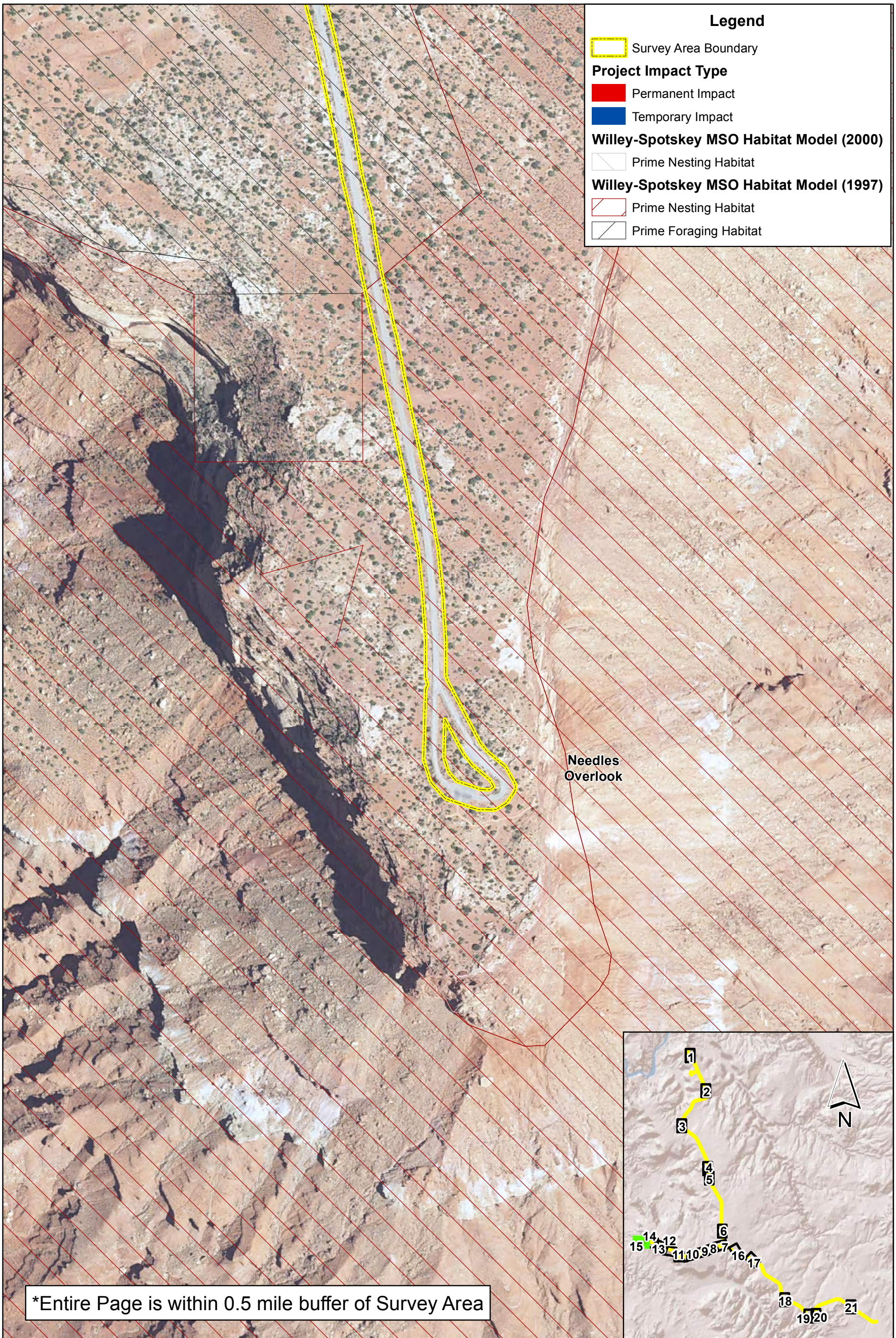

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Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

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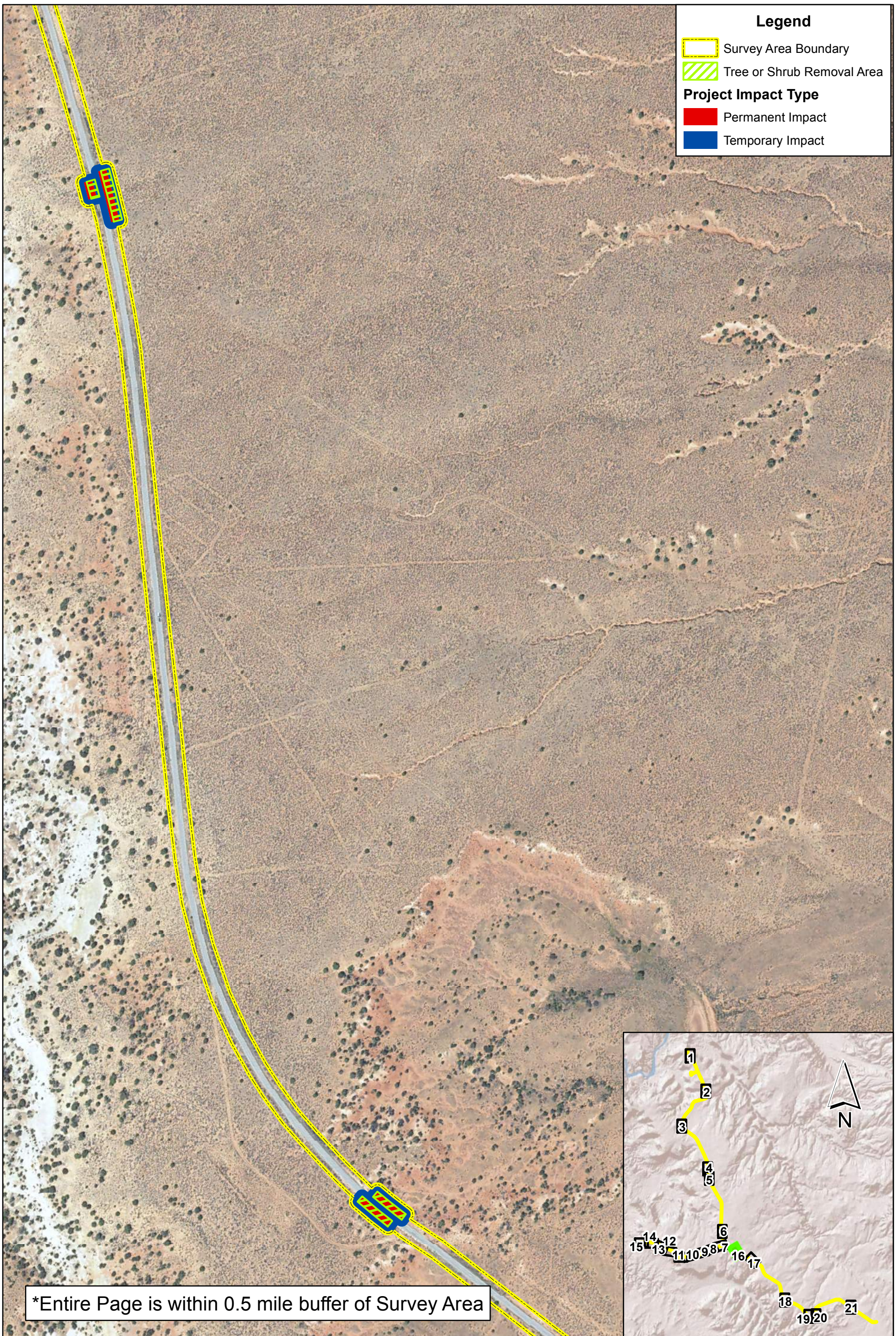

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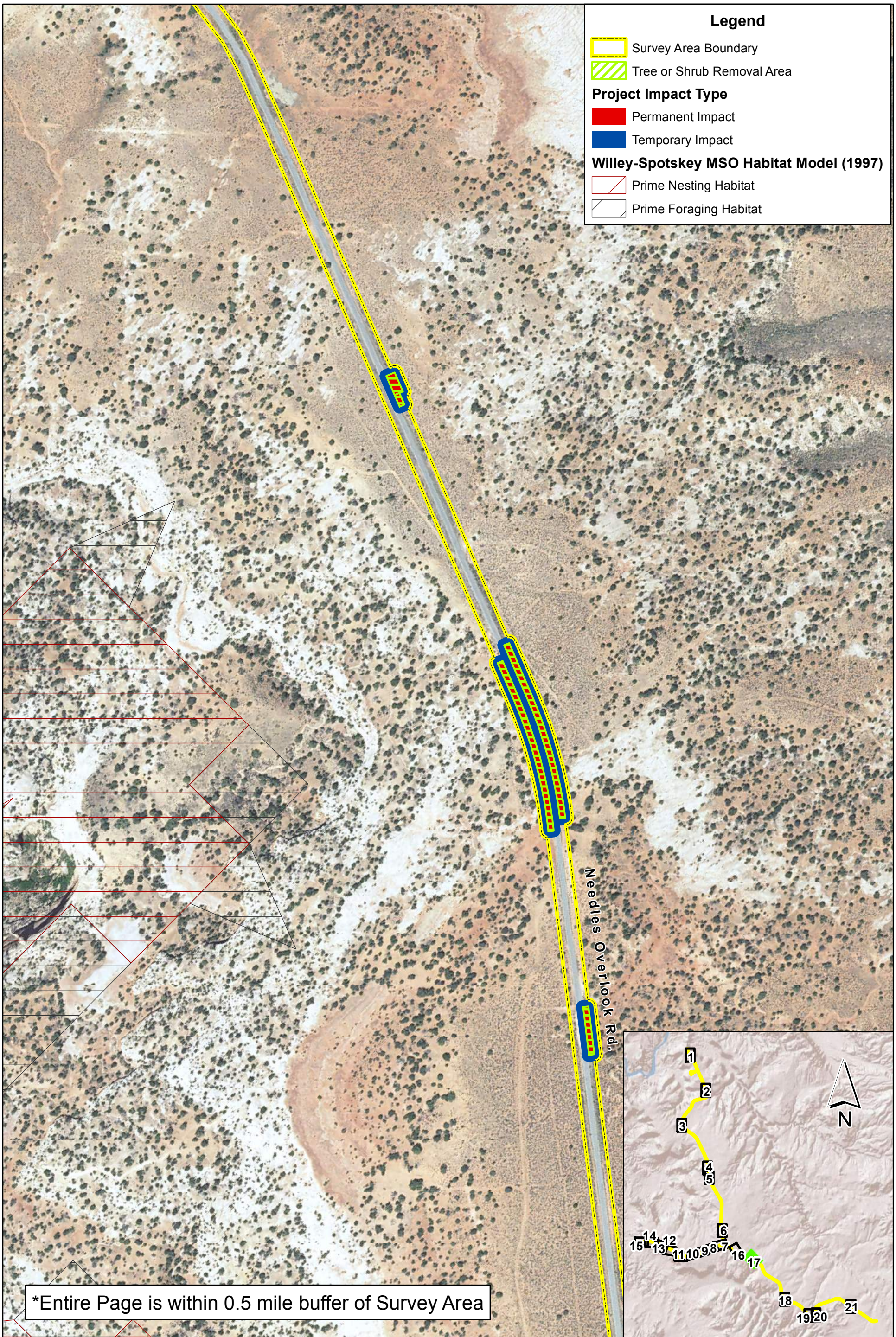
Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

amec foster wheeler



0 0.06 0.12 Miles

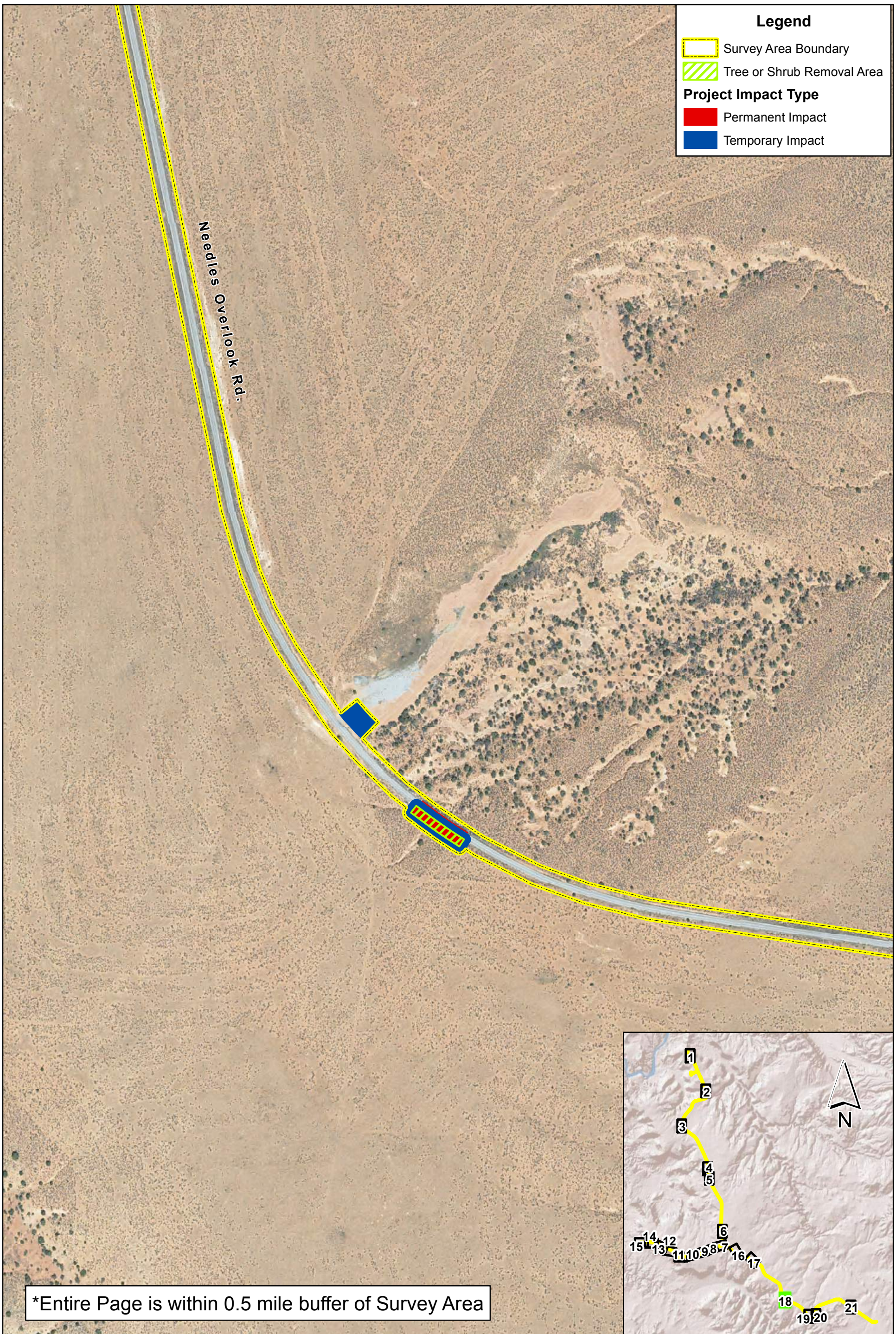
Job No.:	32781001
PM:	MG
Date:	9/19/2016
Scale:	1" = 700

Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

amec foster wheeler



0 0.06 0.12 Miles

Job No.:	32781001
PM:	MG
Date:	9/19/2016
Scale:	1" = 700

N

Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

amec foster wheeler

0 0.06 0.12 Miles

Job No.:	32781001
PM:	MG
Date:	9/19/2016
Scale:	1" = 700

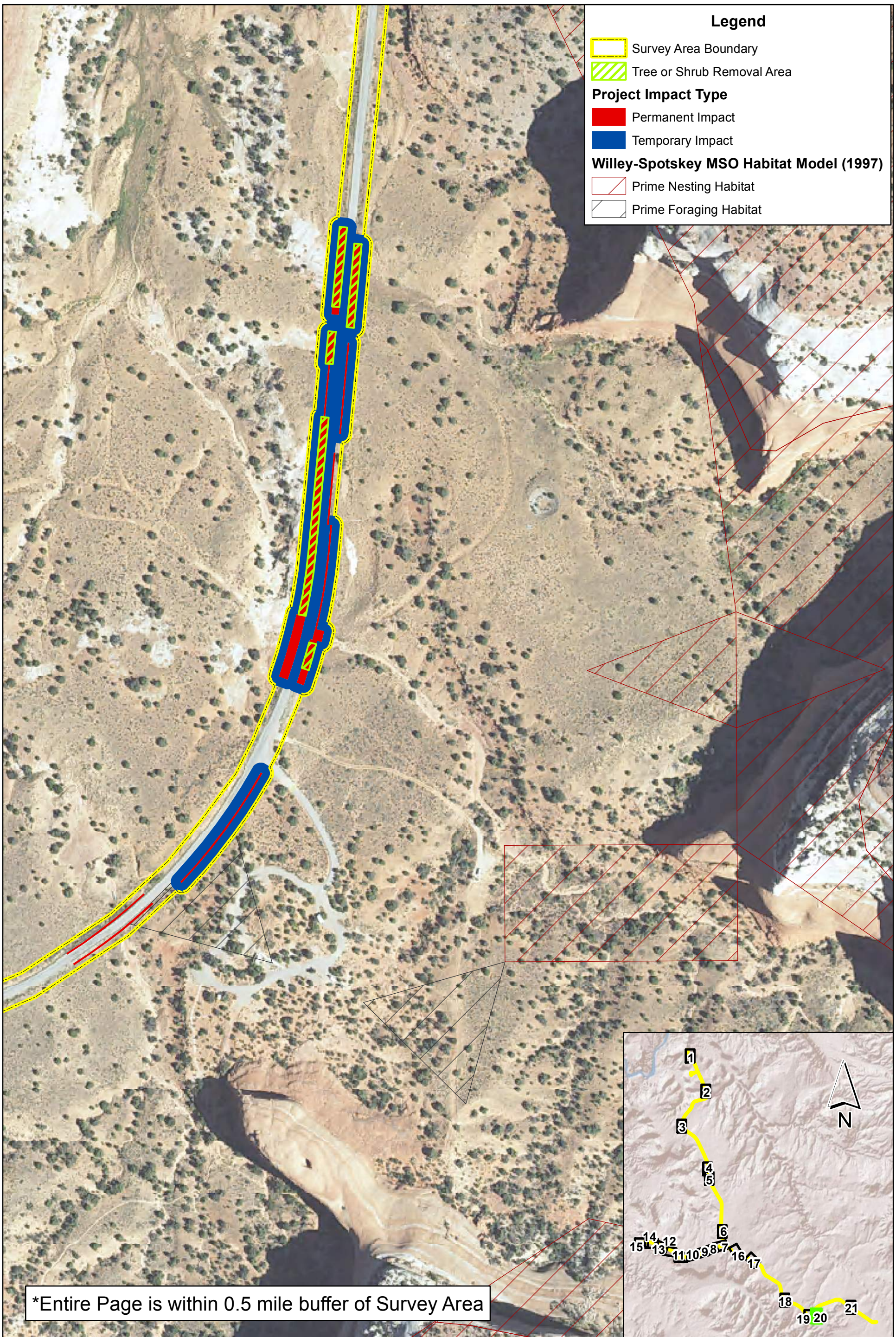
N

Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

amec foster wheeler



0 0.045 0.09 Miles

Job No.:	32781001
PM:	MG
Date:	9/19/2016
Scale:	1" = 700

N

Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE 4

amec foster wheeler

0 0.025 0.05 Miles

Job No.:	32781001
PM:	MG
Date:	9/19/2016
Scale:	1" = 700

N

Federal Lands Transportation Program UT FTBL 7133(1)
Canyon Rims SRMA Road Network
San Juan County, Utah

MSO Habitat Impacts Maps

FIGURE
4

amec foster wheeler

APPENDIX B: USFWS IPAC RESULT

U.S. Fish and Wildlife Service

Trust Resources List

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

Utah Ecological Services Field Office
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UT 84119
(801) 975-3330
http://www.fws.gov
http://www.fws.gov/utahfieldoffice/

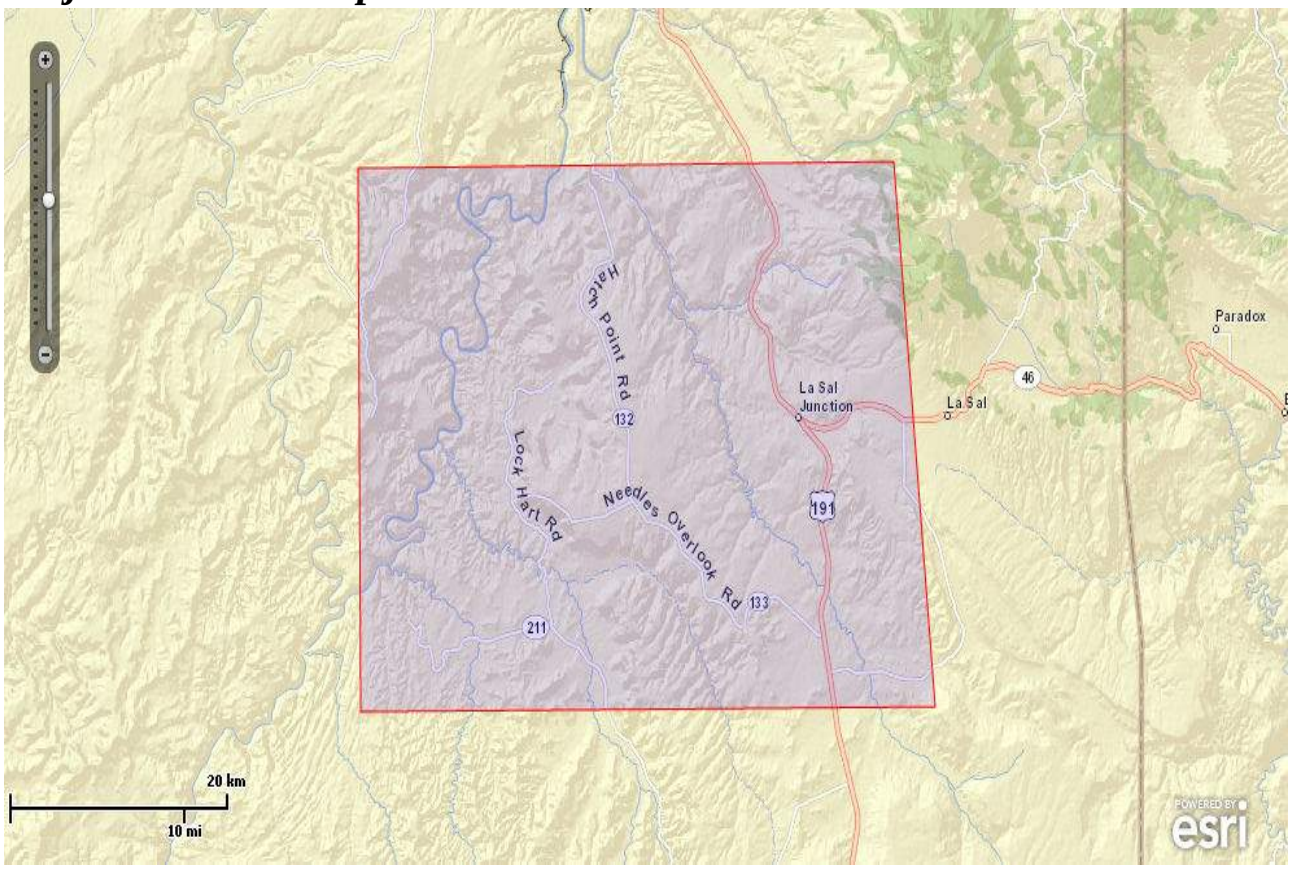
Project Name:

Canyon Rims IPAC Results

U.S. Fish and Wildlife Service

Trust Resources List

Project Location Map:



Project Counties:

San Juan, UT

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-109.8709339 38.4712908, -109.3037647 38.4755914, -109.2598194 38.1231731, -109.8681873 38.119932, -109.8709339 38.4712908)))

Project Type:

Transportation

U.S. Fish and Wildlife Service

Trust Resources List

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of **11** threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Note that **1** of these species should be considered only under certain conditions. See the second table below for a list of these species and the conditions under which effects should be considered. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

Birds	Status		Has Critical Habitat	Contact
Gunnison sage-grouse (*Centrocercus minimus*) Population: entire	Proposed Endangered	species info	Proposed critical habitat	Utah Ecological Services Field Office
Mexican Spotted owl (*Strix occidentalis lucida*) Population: Entire	Threatened	species info	Final designated critical habitat	Utah Ecological Services Field Office
Southwestern Willow flycatcher (*Empidonax traillii extimus*) Population: Entire	Endangered	species info	Final designated critical habitat	Utah Ecological Services Field Office
Yellow-Billed Cuckoo (*Coccyzus americanus*) Population: Western U.S. DPS	Proposed Threatened	species info	Proposed critical habitat	Utah Ecological Services Field Office
Fishes				
Bonytail chub (*Gila elegans*) Population: Entire	Endangered	species info	Final designated critical habitat	Utah Ecological Services Field Office
Colorado pikeminnow (*Ptychocheilus lucius*) Population: Entire, except EXPN	Endangered	species info	Final designated critical habitat	Utah Ecological Services Field Office
Greenback Cutthroat trout (*Oncorhynchus clarki stomias*) Population: Entire	Threatened	species info		Utah Ecological Services Field Office

Trust Resources List

Humpback chub (*Gila cypha*) Population: Entire	Endangered	species info	Final designated critical habitat	Utah Ecological Services Field Office
Razorback sucker (*Xyrauchen texanus*) Population: Entire	Endangered	species info	Final designated critical habitat	Utah Ecological Services Field Office
Flowering Plants				
Navajo sedge (*Carex specuicola*)	Threatened	species info	Final designated critical habitat	Utah Ecological Services Field Office

Species that should be considered in an effects analysis for your project under specified conditions:

Birds				
California condor (*Gymnogyps californianus*) Population: U.S.A. (specific portions of Arizona, Nevada, and Utah)	Experimental Population, Non-Essential	species info	condition info	Utah Ecological Services Field Office

Critical habitats within your project area: (View all critical habitats within your project area on one map)

The following critical habitats lie fully or partially within your project area.

Birds	Critical Habitat Type
Mexican Spotted owl (*Strix occidentalis lucida*) Population: Entire	Final designated critical habitat
Fishes	
Colorado pikeminnow (*Ptychocheilus lucius*) Population: Entire, except EXPN	Final designated critical habitat
Razorback sucker (*Xyrauchen texanus*) Population: Entire	Final designated critical habitat

U.S. Fish and Wildlife Service

Trust Resources List

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: http://www.fws.gov/migratorybirds/RegulationsandPolicies.html.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html.

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: http://www.fws.gov/migratorybirds/CCMB2.htm.

For information about conservation measures that help avoid or minimize impacts to birds, please visit:
http://www.fws.gov/migratorybirds/CCMB2.htm.

Migratory birds of concern that may be affected by your project:
There are **18** birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to the ECOS Help Desk.

U.S. Fish and Wildlife Service

Trust Resources List

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
Bald eagle (*Haliaeetus leucocephalus*)	Yes	species info	Wintering
Brewer's Sparrow (*Spizella breweri*)	Yes	species info	Breeding
Burrowing Owl (*Athene cunicularia*)	Yes	species info	Breeding
Cassin's Finch (*Carpodacus cassinii*)	Yes	species info	Year-round
Ferruginous hawk (*Buteo regalis*)	Yes	species info	Wintering, Year-round
Golden eagle (*Aquila chrysaetos*)	Yes	species info	Year-round
Gray vireo (*Vireo vicinior*)	Yes	species info	Breeding
Gunnison sage-grouse (*Centrocercus minimus*)	Yes	species info	Year-round
Juniper Titmouse (*Baeolophus ridgwayi*)	Yes	species info	Year-round
Lewis's Woodpecker (*Melanerpes lewis*)	Yes	species info	Year-round
Loggerhead Shrike (*Lanius ludovicianus*)	Yes	species info	Year-round
Long-Billed curlew (*Numenius americanus*)	Yes	species info	Breeding
Olive-Sided flycatcher (*Contopus cooperi*)	Yes	species info	Breeding
Pinyon Jay (*Gymnorhinus cyanocephalus*)	Yes	species info	Year-round
Prairie Falcon (*Falco mexicanus*)	Yes	species info	Year-round
Sage Thrasher (*Oreoscoptes montanus*)	Yes	species info	Breeding
Williamson's Sapsucker (*Sphyrapicus thyroideus*)	Yes	species info	Breeding

Willow Flycatcher (*Empidonax traillii*)	Yes	species info	Breeding

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

Data Limitations, Exclusions and Precautions
The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Exclusions - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

U.S. Fish and Wildlife Service

Trust Resources List

Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

The following wetland types intersect your project area in one or more locations:

Wetland Types	NWI Classification Code	Total Acres
Freshwater Emergent Wetland	PEMA	0.3366
Freshwater Emergent Wetland	PEMC	5.1752
Freshwater Emergent Wetland	PEMB	192.7436
Freshwater Emergent Wetland	PEMCh	10.6282
Freshwater Emergent Wetland	PEMAh	5.851
Freshwater Forested/Shrub Wetland	PSSAh	2.4001
Freshwater Forested/Shrub Wetland	PSSA	8.1076
Freshwater Forested/Shrub Wetland	PSSB	11.8276
Freshwater Forested/Shrub Wetland	PSSC	30.7612
Freshwater Pond	PUBFx	12.7321
Freshwater Pond	PABFh	24.2077
Freshwater Pond	PUSC	115.7987
Freshwater Pond	PUSA	1.2395
Freshwater Pond	PUSAh	16.5616
Freshwater Pond	PUSCh	27.6964
Freshwater Pond	PUSCx	41.011
Freshwater Pond	PABF	0.1685
Freshwater Pond	PABFx	0.491
Lake	L1UBHh	54.6865

Trust Resources List

Lake	L2USCh	5.94
Lake	L2USKx	144.1101
Lake	L2USCx	42.1759
Riverine	R3UBH	10630.1464
Riverine	R4SBC	8.6332
Riverine	R4SBA	150.1611
Riverine	R4SBJ	55.7941
Riverine	R3USC	171.4948
Riverine	R3USA	56.5134

Appendix G. Visual Contrast Rating Worksheets

Form 8400-4

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

Date: 11/05/2015

District/ Field Office: Moab Field Office

Resource Area: Canyon Rims SRMA

Activity (program): Transportation

SECTION A. PROJECT INFORMATION

1. Project Name Canyon Rims Road	4. Location Township___27 S__	5. Location Sketch
2. Key Observation Point KOP-1	Range_____21 E___	See Attached Map
3. VRM Class	Section____34_____	

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat to rolling terrain	Simple forms created b vegetative patterns, patchy	Plateau and unpaved roadway
LINE	horizontal	Weak, horizontal lines in background	straight, linear, vertical, horizontal
COLOR	Light greens, tans, browns, and light yellows	Light to dark green, some light yellows, mottled	Light Brown and gray
TEX-TURE	Smooth to Medium	Smooth to medium	smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	flat	N/A	smooth
LINE	linear	N/A	Straight, curvy, and l inear
COLOR	Grays to light browns	N/A	Gray –roadway Signage, brown, green, white
TEX-TURE	Smooth	N/A	Smooth, uniform, fine

SECTION D. CONTRAST RATING __SHORT TERM _X_LONG TERM

1. DEGREE OF CONTRAST		FEATURES											
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE
ELEMENTS	FORM				X				X			X	
	LINE				X				X			X	
	COLOR				X				X			X	
	TEXTURE				X				X			X	

2. Does project design meet visual resource management objectives? _X__Yes ___No
(Explain on reverses side)

3. Additional mitigating measures recommended
_X_Yes ___No (Explain on reverses side)

Evaluator's Names — Date
Bryan Morse — 11/20/2015

Comments from item 2.

KOP-1 was chosen since it is located on the unpaved portion of roadway associated with the Anticline Overlook Road and a likely place the general public would be able to view the proposed project while driving southeast along the roadway. From this location within the project site, the existing roadway disturbance would slightly be changed with the proposed improvement of paving the roadway. The chip seal would be planned to use similar color of the surrounding landscape and no vog (black tar sealant) would be used in the construction of the project to limit the visual intrusion of the existing roadway. The improvements to the roadway and signage would introduce slight visual impacts along this segment that would be visible by the public, but would not likely impact the scenic quality of that of the existing conditions of the site. As proposed, the project would meet the proposed management objectives of VRM II for this area.

Additional Mitigating Measures (See item 3)

1. All new structures should be painted using dark greens or dark browns similar to Beetle, Juniper Green, or Shadow Gray as found on the BLM Standard Environmental Color Chart CC-001to reduce visibility from areas most likely to be viewed by the public.
2. Vegetation removed during construction phase should be used as vertical mulching on any areas with surface disturbance.
3. Surface disturbance should be kept to the minimum required to make roadway improvements. Surface disturbance should be minimized as much as possible.
4. Maintenance on existing structures should include painting with similar dark colors when necessary to reduce the cumulative impacts of the site.

Photograph: KOP-1

Project: Canyon Rims Road	**Date**: 11/05/2015
Location : KOP-1	**Photo ID**: DSC 0135
UTM East:0622035	**UTM North**:4252686
View: Facing southwest	

Proposed site of existing roadway as viewed from approximately 3.5 miles south of Anticline Overlook viewing area. This road would be traveled to access the Anticline Overlook area and other recreational resources along the northern portion of the project area. The existing roadway is unpaved and surrounding vegetation consists of primarily of grasses, shrubs, and sparse trees.

From this Key Observation Point (KOP) the viewshed can be divided into three distinct boundaries: the foreground, middle ground, and background. The foreground consists of flat sandy soils sparsely populated with grasses and shrubs with predominate colors of light yellow, light tans, and greens. The middle ground and background are comprised of flat areas with some rolling hills covered with sage brush with a smooth to moderate texture and tan colors.

Form 8400-4

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

Date: 11/05/2015

District/ Field Office: Moab Field Office

Resource Area: Canyon Rims SRMA

Activity (program): Transportation

SECTION A. PROJECT INFORMATION

1. Project Name Canyon Rims Road	4. Location Township___28 S__	5. Location Sketch See Attached Map
2. Key Observation Point KOP-2	Range_____21 E___	
3. VRM Class	Section____5_____	

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat to rolling terrain	Simple forms created b vegetative patterns, patchy	Plateau and unpaved roadway
LINE	horizontal	Weak, horizontal lines in background	straight, linear, vertical, horizontal
COLOR	Light greens, tans, browns, and light yellows	Light to dark green, some light yellows, mottled	Light Brown and gray
TEX-TURE	Smooth to Medium	Smooth to medium	smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	flat	N/A	smooth
LINE	linear	N/A	Straight, curvy, and l inear
COLOR	Grays to light browns	N/A	Gray –roadway Signage, brown, green, white
TEX-TURE	Smooth	N/A	Smooth, uniform, fine

SECTION D. CONTRAST RATING __SHORT TERM _X_LONG TERM

1. DEGREE OF CONTRAST		FEATURES											
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE
ELEMENTS	FORM				X				X			X	
	LINE				X				X			X	
	COLOR				X				X			X	
	TEXTURE				X				X			X	

2. Does project design meet visual resource management objectives? _X__Yes ___No
(Explain on reverses side)

3. Additional mitigating measures recommended
_X_Yes ___No (Explain on reverses side)

Evaluator's Names — Date
Bryan Morse — 11/20/2015

Comments from item 2.

KOP-2 was chosen since it is located on the unpaved portion of roadway associated with the Anticline Overlook Road and a likely place the general public would be able to view the proposed project while driving northwest along the roadway. From this location within the project site, the existing roadway disturbance would slightly be changed with the proposed improvement of paving the roadway. The chip seal would be planned to use similar color of the surrounding landscape and no vog (black tar sealant) would be used in the construction of the project to limit the visual intrusion of the existing roadway. The improvements to the roadway and signage would introduce slight visual impacts along this segment that would be visible by the public, but would not likely impact the scenic quality of that of the existing conditions of the site. As proposed, the project would meet the proposed management objectives of VRM II for this area.

Additional Mitigating Measures (See item 3)

1. All new structures should be painted using dark greens or dark browns similar to Beetle, Juniper Green, or Shadow Gray as found on the BLM Standard Environmental Color Chart CC-001to reduce visibility from areas most likely to be viewed by the public.
2. Vegetation removed during construction phase should be used as vertical mulching on any areas with surface disturbance.
3. Surface disturbance should be kept to the minimum required to make roadway improvements. Surface disturbance should be minimized as much as possible.
4. Maintenance on existing structures should include painting with similar dark colors when necessary to reduce the cumulative impacts of the site.

Photograph: KOP-2

Project: Canyon Rims Road	**Date**: 11/05/2015
Location : KOP-2	**Photo ID**: DSC 0137
UTM East:0620174	**UTM North**:4248246
View: Facing northwest	

Proposed site of existing roadway as viewed from approximately 6.5 miles south of Anticline Overlook viewing area. This road would be traveled to access the Anticline Overlook area and other recreational resources along the northern portion of the project area. The existing roadway is unpaved and surrounding vegetation consists of primarily of sparse grasses, shrubs, and trees.

From this Key Observation Point (KOP) the viewshed can be divided into three distinct boundaries: the foreground, middle ground, and background. The foreground consists of red and brown sandy to rocky soils sparsely populated with grasses and shrubs with predominate colors of red, grays, light tans, and greens. The middle ground and background are comprised of flat to rolling hills covered with sage brush, grasses, and trees with a smooth to moderate texture and tan, yellow, green, and red colors.

Form 8400-4

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

Date: 11/05/2015

District/ Field Office: Moab Field Office

Resource Area: Canyon Rims SRMA

Activity (program): Transportation

SECTION A. PROJECT INFORMATION

1. Project Name Canyon Rims Road	4. Location Township___28 S__	5. Location Sketch See Attached Map
2. Key Observation Point KOP-3	Range_____21 E___	
3. VRM Class	Section____8_____	

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat to rolling terrain	Simple forms created b vegetative patterns, patchy	Plateau and unpaved roadway
LINE	horizontal	Weak, horizontal lines in background	straight, linear, vertical, horizontal
COLOR	Light greens, tans, browns, and light yellows	Light to dark green, some light yellows, mottled	Light Brown and gray
TEX-TURE	Smooth to Medium	Smooth to medium	smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	flat	N/A	smooth
LINE	linear	N/A	Straight, curvy, and linear
COLOR	Grays to light browns	N/A	Gray –roadway Signage, brown, green, white
TEX-TURE	Smooth	N/A	Smooth, uniform, fine

SECTION D. CONTRAST RATING __SHORT TERM _X_LONG TERM

1. DEGREE OF CONTRAST		FEATURES											
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE
ELEMENTS	FORM				X				X			X	
	LINE				X				X			X	
	COLOR				X				X			X	
	TEXTURE				X				X			X	

2. Does project design meet visual resource management objectives? _X__Yes ___No
(Explain on reverses side)

3. Additional mitigating measures recommended
_X_Yes ___No (Explain on reverses side)

Evaluator's Names — Date
Bryan Morse — 11/20/2015

Comments from item 2.

KOP 3 was chosen since it is located on the unpaved portion of roadway associated with the Anticline Overlook Road and a likely place the general public would be able to view the proposed project while driving southeast along the roadway. From this location within the project site, the existing roadway disturbance would slightly be changed with the proposed improvements of paving the roadway. The chip seal would be planned to use similar colors of the surrounding landscape and no vog (black tar sealant) would be used in the construction of the project to limit the visual intrusion of the existing roadway. The improvements to the roadway and signage would introduce slight visual impacts along this segment that would be visible by the public, but would not likely impact the scenic quality of that of the existing conditions of the site. As proposed, the project would meet the proposed management objectives of VRM II for this area.

Additional Mitigating Measures (See item 3)

1. All new structures should be painted using dark greens or dark browns similar to Beetle, Juniper Green, or Shadow Gray as found on the BLM Standard Environmental Color Chart CC-001to reduce visibility from areas most likely to be viewed by the public.
2. Vegetation removed during construction phase should be used as vertical mulching on any areas with surface disturbance.
3. Surface disturbance should be kept to the minimum required to make roadway improvements. Surface disturbance should be minimized as much as possible.
4. Maintenance on existing structures should include painting with similar dark colors when necessary to reduce the cumulative impacts of the site.

Photograph: KOP-3

Project: Canyon Rims Road	**Date**: 11/05/2015
Location : KOP-3	**Photo ID**: DSC 0138
UTM East:0621024	**UTM North**:4247207
View: Facing southeast	

Proposed site of existing roadway as viewed from approximately 7.5 miles south of Anticline Overlook viewing area. This road would be traveled to access the Anticline Overlook area and other recreational resources along the northern portion of the project area. The existing roadway is unpaved and surrounding vegetation consists primarily of grasses, shrubs, and sparse trees.

From this Key Observation Point (KOP) the viewshed can be divided into three distinct boundaries: the foreground, middle ground, and background. The foreground, middle ground and background areas consists of flat sandy soils sparsely populated with grasses and shrubs with predominate colors of light brown and tans, light yellow, and greens.

Form 8400-4

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

Date: 11/05/2015

District/ Field Office: Moab Field Office

Resource Area: Canyon Rims SRMA

Activity (program): Transportation

SECTION A. PROJECT INFORMATION

1. Project Name Canyon Rims Road	4. Location Township___28 S__	5. Location Sketch See Attached Map
2. Key Observation Point KOP-4	Range_____21 E___	
3. VRM Class	Section____34_____	

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat to rolling terrain	Simple forms created b vegetative patterns, patchy	Plateau and unpaved roadway
LINE	horizontal	Weak, horizontal lines in background	straight, linear, vertical, horizontal
COLOR	Light greens, tans, browns, and light yellows	Light to dark green, some light yellows, mottled	Light Brown and gray
TEX-TURE	Smooth to Medium	Smooth to medium	smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	flat	N/A	smooth
LINE	linear	N/A	Straight, curvy, and linear
COLOR	Grays to light browns	N/A	Gray –roadway Signage, brown, green, white
TEX-TURE	Smooth	N/A	Smooth, uniform, fine

SECTION D. CONTRAST RATING __SHORT TERM _X_LONG TERM

1. DEGREE OF CONTRAST		FEATURES											
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE
ELEMENTS	FORM				X				X			X	
	LINE				X				X			X	
	COLOR				X				X			X	
	TEXTURE				X				X			X	

2. Does project design meet visual resource management objectives? _X__Yes ___No
(Explain on reverses side)

3. Additional mitigating measures recommended
_X_Yes ___No (Explain on reverses side)

Evaluator's Names — Date
Bryan Morse — 11/20/2015

Comments from item 2.

KOP-4 was chosen since it is located on the unpaved portion of roadway associated with the Anticline Overlook Road and a likely place the general public would be able to view the proposed project while driving north along the roadway. From this location within the project site, the existing roadway disturbance would slightly be changed with the proposed improvements of paving the roadway. The chip seal would be planned to use similar colors of the surrounding landscape and no vog (black tar sealant) would be used in the construction of the project to limit the visual intrusion of the existing roadway. The improvements to the roadway and signage would introduce a slight visual impact along this segment that would be visible by the public, but would not likely impact the scenic quality of that of the existing conditions of the site. As proposed, the project would meet the proposed management objectives of VRM II for this area.

Additional Mitigating Measures (See item 3)

1. All new structures should be painted using dark greens or dark browns similar to Beetle, Juniper Green, or Shadow Gray as found on the BLM Standard Environmental Color Chart CC-001to reduce visibility from areas most likely to be viewed by the public.
2. Vegetation removed during construction phase should be used as vertical mulching on any areas with surface disturbance.
3. Surface disturbance should be kept to the minimum required to make roadway improvements. Surface disturbance should be minimized as much as possible.
4. Maintenance on existing structures should include painting with similar dark colors when necessary to reduce the cumulative impacts of the site.

Photograph: KOP-4

Project: Canyon Rims Road	**Date**: 11/05/2015
Location : KOP-4	**Photo ID**: DSC 0109
UTM East:0622204	**UTM North**:4243342
View: Facing north	

Proposed site of existing roadway as viewed from approximately 9 miles south of Anticline Overlook view area. This road would be traveled to access the Anticline Overlook area and other recreational resources along the northern portion of the project area. The existing roadway is unpaved and surrounding vegetation consists of grasses, shrubs, and sparse trees.

From this Key Observation Point (KOP) the viewshed can be divided into three distinct boundaries: the foreground, middle ground, and background. The foreground, middle ground, and background areas consist of flat sandy soils sparsely populated with grasses and shrubs with predominate colors of light red, light brown to tan, and greens.

Form 8400-4

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

Date: 11/05/2015

District/ Field Office: Moab Field Office

Resource Area: Canyon Rims SRMA

Activity (program): Transportation

SECTION A. PROJECT INFORMATION

1. Project Name Canyon Rims Road	4. Location Township___29 S__	5. Location Sketch See Attached Map
2. Key Observation Point KOP-5	Range_____21 E___	
3. VRM Class	Section____26_____	

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat to rolling terrain	Simple forms created b vegetative patterns, patchy	Plateau and unpaved roadway
LINE	horizontal	Weak, horizontal lines in background	straight, linear, vertical, horizontal
COLOR	Light greens, tans, browns, and light yellows	Light to dark green, some light yellows, mottled	Light Brown and gray
TEX-TURE	Smooth to Medium	Smooth to medium	smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	flat	N/A	smooth
LINE	linear	N/A	Straight, curvy, and linear
COLOR	Grays to light browns	N/A	Gray –roadway Signage, brown, green, white
TEX-TURE	Smooth	N/A	Smooth, uniform, fine

SECTION D. CONTRAST RATING __SHORT TERM _X_LONG TERM

1. DEGREE OF CONTRAST		FEATURES											
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE
ELEMENTS	FORM				X				X			X	
	LINE				X				X			X	
	COLOR				X				X			X	
	TEXTURE				X				X			X	

2. Does project design meet visual resource management objectives? _X__Yes ___No
(Explain on reverses side)

3. Additional mitigating measures recommended
_X_Yes ___No (Explain on reverses side)

Evaluator's Names — Date
Bryan Morse — 11/20/2015

Comments from item 2.

KOP-5 was chosen since it is located on the paved portion of roadway associated with the Needles Overlook Road and a likely place the general public would be able to view the proposed project while driving northeast along the this segment of roadway. From this location within the project site, the existing roadway disturbance would slightly be changed with the proposed improvements of repaving the roadway, but these changes would be negligible since the roadway is currently paved. The chip seal would be planned to use similar colors of the surrounding landscape and no vog (black tar sealant) would be used in the construction of the project to limit the visual intrusion of the existing roadway. The improvements to the roadway and signage would introduce a slight visual impact along this segment that would be visible by the public, but would not likely impact the scenic quality of that of the existing conditions of the site. As proposed, the project would meet the proposed management objectives of VRM II for this area.

Additional Mitigating Measures (See item 3)

1. All new structures should be painted using dark greens or dark browns similar to Beetle, Juniper Green, or Shadow Gray as found on the BLM Standard Environmental Color Chart CC-001to reduce visibility from areas most likely to be viewed by the public.
2. Vegetation removed during construction phase should be used as vertical mulching on any areas with surface disturbance.
3. Surface disturbance should be kept to the minimum required to make roadway improvements. Surface disturbance should be minimized as much as possible.
4. Maintenance on existing structures should include painting with similar dark colors when necessary to reduce the cumulative impacts of the site.

Photograph: KOP-5

Project: Canyon Rims Road	**Date**: 11/05/2015
Location : KOP-5	**Photo ID**: DSC 0158
UTM East:0623559	**UTM North**:4235068
View: Facing northeast	

Proposed site of existing paved roadway as viewed from approximately .25 miles west of the “Y” intersection. This road would be traveled to access the Needles Overlook area and other recreational resources along the western portion of the project area. The existing roadway is paved and surrounding vegetation consists primarily of grasses, shrubs, and sparse trees.

From this Key Observation Point (KOP) the viewshed can be divided into three distinct boundaries: the foreground, middle ground, and background. The foreground and middle ground consist of flat sandy soils populated with grasses and shrubs with sparse trees with predominate colors of light tans and grays, yellow, and greens. The background is comprised of flat to rolling hills covered with sage brush and trees with smooth to moderate textures with tans, reds, and green colors.

Form 8400-4

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

Date: 11/05/2015

District/ Field Office: Moab Field Office

Resource Area: Canyon Rims SRMA

Activity (program): Transportation

SECTION A. PROJECT INFORMATION

1. Project Name Canyon Rims Road	4. Location Township___29 S__	5. Location Sketch See Attached Map
2. Key Observation Point KOP-6	Range_____21 E___	
3. VRM Class	Section____26_____	

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat to rolling terrain	Simple forms created b vegetative patterns, patchy	Plateau and unpaved roadway
LINE	horizontal	Weak, horizontal lines in background	straight, linear, vertical, horizontal
COLOR	Light greens, tans, browns, and light yellows	Light to dark green, some light yellows, mottled	Light Brown and gray
TEX-TURE	Smooth to Medium	Smooth to medium	smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	flat	N/A	smooth
LINE	linear	N/A	Straight, curvy, and linear
COLOR	Grays to light browns	N/A	Gray –roadway Signage, brown, green, white
TEX-TURE	Smooth	N/A	Smooth, uniform, fine

SECTION D. CONTRAST RATING __SHORT TERM _X_LONG TERM

1. DEGREE OF CONTRAST		FEATURES											
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE
ELEMENTS	FORM				X				X			X	
	LINE				X				X			X	
	COLOR				X				X			X	
	TEXTURE				X				X			X	

2. Does project design meet visual resource management objectives? _X__Yes ___No
(Explain on reverses side)

3. Additional mitigating measures recommended
_X_Yes ___No (Explain on reverses side)

Evaluator's Names — Date
Bryan Morse — 11/20/2015

Comments from item 2.

KOP-6 was chosen since it is located on the paved portion of roadway associated with the Needles Overlook Road and a likely place the general public would be able to view the proposed project while driving southwest along the this segment of roadway. From this location within the project site, the existing roadway disturbance would slightly be changed with the proposed improvements of repaving the roadway, but these changes would be negligible since the roadway is currently paved. The chip seal would be planned to use similar colors of the surrounding landscape and no vog (black tar sealant) would be used in the construction of the project to limit the visual intrusion of the existing roadway. The improvements to the roadway and signage would introduce a slight visual impact along this segment that would be visible by the public, but would not likely impact the scenic quality of that of the existing conditions of the site. As proposed, the project would meet the proposed management objectives of VRM II for this area.

Additional Mitigating Measures (See item 3)

1. All new structures should be painted using dark greens or dark browns similar to Beetle, Juniper Green, or Shadow Gray as found on the BLM Standard Environmental Color Chart CC-001to reduce visibility from areas most likely to be viewed by the public.
2. Vegetation removed during construction phase should be used as vertical mulching on any areas with surface disturbance.
3. Surface disturbance should be kept to the minimum required to make roadway improvements. Surface disturbance should be minimized as much as possible.
4. Maintenance on existing structures should include painting with similar dark colors when necessary to reduce the cumulative impacts of the site.

Photograph: KOP-6

Project: Canyon Rims Road	**Date**: 11/05/2015
Location : KOP-6	**Photo ID**: DSC 0159
UTM East:0623691	**UTM North**:4235126
View: Facing southwest	

Proposed site of existing paved roadway as viewed from approximately .25 miles west of the “Y” intersection. This road would be traveled to access the Needles Overlook area and other recreational resources along the western portion of the project area. The existing roadway is paved and surrounding vegetation consists primarily of grasses, shrubs, and sparse trees.

From this Key Observation Point (KOP) the viewshed can be divided into three distinct boundaries: the foreground, middle ground, and background. The foreground consists of rolling sandy soils populated with sparse grasses and shrubs with predominate colors of light tans and grays, yellow, and greens. The middle ground and background are comprised of flat to rolling hills covered with sage brush and sparse trees with smooth to moderate textures with gray and green colors.