

**United States Department of the Interior
Bureau of Land Management**



Environmental Assessment UT-080-08-0238
April 2011

Seep Ridge Road Paving Project Environmental Assessment

Legal Descriptions on Federal Lands:

T. 10 S., R. 20 E., SLM, Utah
 Sec. 11, N $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$;
 Sec. 12, SW $\frac{1}{4}$ SW $\frac{1}{4}$.

T. 11 S., R. 21 E.
 Sec. 6, Lot 1, SE $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$;
 Sec. 7, E $\frac{1}{2}$ E $\frac{1}{2}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$;
 Sec. 17, SW $\frac{1}{4}$ SW $\frac{1}{4}$;
 Sec. 18, NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$;
 Sec. 20, W $\frac{1}{2}$ W $\frac{1}{2}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$;
 Sec. 29, E $\frac{1}{2}$ W $\frac{1}{2}$;
 Sec. 33, W $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$.

T. 12 S., R. 21 E.
 Sec. 4, Lot 3, SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$;
 Sec. 9, N $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$;
 Sec. 10, W $\frac{1}{2}$ SW $\frac{1}{4}$;
 Sec. 15, W $\frac{1}{2}$ SW $\frac{1}{4}$; E $\frac{1}{2}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$;
 Sec. 22, W $\frac{1}{2}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$;
 Sec. 23, SW $\frac{1}{4}$ SW $\frac{1}{4}$;
 Sec. 25, SW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$;
 Sec. 26, S $\frac{1}{2}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$.

T. 12 S., R. 22 E.
 Sec. 30, Lots 3, 4;
 Sec. 31, Lots 1-3, E $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$.



T. 13 S., R. 22 E.

Sec. 4, S $\frac{1}{2}$ SW $\frac{1}{4}$;

Sec. 5, SW $\frac{1}{4}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$;

Sec. 6, Lots 1, 2, SE $\frac{1}{4}$ NE $\frac{1}{4}$;

Sec. 9, N $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$;

Sec. 10, SW $\frac{1}{4}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ S $\frac{1}{2}$;

Sec. 11, W $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$;

Sec. 14, E $\frac{1}{2}$ W $\frac{1}{2}$;

Sec. 23, SW $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$;

Sec. 26, W $\frac{1}{2}$ NE $\frac{1}{4}$;

Sec. 35, SE $\frac{1}{4}$ NW $\frac{1}{4}$.

T. 14 S., R. 22 E.

Sec. 3, SE $\frac{1}{4}$ SE $\frac{1}{4}$;

Sec. 11, S $\frac{1}{2}$ SE $\frac{1}{4}$;

Sec. 14, W $\frac{1}{2}$ E $\frac{1}{2}$;

Sec. 23, N $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$;

Sec. 24, SW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$;

Sec. 25, W $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$.

T. 14 S., R. 23 E.

Sec. 30, Lots 2,3, NE $\frac{1}{4}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$;

Sec. 31, NE $\frac{1}{4}$ NE $\frac{1}{4}$.

T. 15 S., R. 23 E.

Sec. 5, Lot 1, SE $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$;

Sec. 8, E $\frac{1}{2}$ E $\frac{1}{2}$;

Sec. 9, W $\frac{1}{2}$ W $\frac{1}{2}$;

Sec. 16, NW $\frac{1}{4}$ NW $\frac{1}{4}$;

Sec. 22, SW $\frac{1}{4}$ SE $\frac{1}{4}$.

Sec. 35, E $\frac{1}{2}$

All in Uintah County, Utah.

Salt Lake Meridian

Applicants: Uintah County
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Vernal, UT 84078

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Seep Ridge Road Paving Project Environmental Assessment
UT-080-08-0238

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LIST OF EXHIBITS

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- 2 – Soils
- 3 – Drainages
- 4 – Vegetation
- 5 – Mule Deer Habitats
- 6 – Elk Habitats
- 7 – Livestock Data
- 8 – Recreation Data

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the Seep Ridge Road Paving Project as proposed by Uintah County (hereafter referred to as the county). The EA is a site-specific analysis of potential impacts that could result with the implementation of the Proposed Action or an alternative to the Proposed Action. 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. An EA also provides evidence for determining whether a statement of “Finding of No Significant Impact” (FONSI) will be prepared or whether an Environmental Impact Statement (EIS) will be required. A FONSI is a document that briefly presents the reasons why implementation of the Proposed Action or alternatives would not result in “significant” environmental impacts. If the decision maker determines that this project has no “significant” impacts following the analysis in the EA, a Decision Record and FONSI would be prepared approving the selected alternative. If the project is found to have “significant” impacts, an EIS would be prepared.

1.2 BACKGROUND

Seep Ridge Road, located in Uintah County, also known as Uintah County Road (UCR) 2810, has been historically used for a variety of purposes, not limited to hunting, livestock grazing, oil and gas exploration, and recreation. Uintah County currently has a BLM right-of-way (ROW), UTU-69125-35, issued in perpetuity for the road across public lands. The existing grant authorizes a 66-foot width. The road is currently composed of dirt or native material with gravel added in some areas. Uintah County projects a continued substantial increase in light and heavy vehicle traffic on the road, primarily associated with energy development in the Book Cliffs area. Uintah County seeks to amend their existing ROW to address these issues.

1.3 PURPOSE & NEED FOR THE PROPOSED ACTION

BLM’s purpose is to consider amending the county’s existing ROW, as outlined in the county’s application, while also preventing unnecessary degradation to public lands. The BLM would decide whether to grant the ROW amendment, and if so, under what terms and conditions. BLM’s need for the project is to respond to the applicant’s proposal under the Federal Land Policy and Management Act of 1976 (FLPMA). The Vernal Field Office Resource Management Plan (BLM 2008a) lands and realty goals and objectives state that BLM will “Process applications, permits, operating plans, mineral exchanges, leases, and other use authorizations for public lands in accordance with policy and guidance.”

1.4 CONFORMANCE WITH BLM LAND USE PLAN(S)

The management of public lands under the jurisdiction of the BLM and resources within the Project Area is directed and guided by the Vernal Field Office (VFO) Record of Decision (ROD) and Resource Management Plan, approved October 2008 (BLM 2008a). The management of public lands under the jurisdiction of the BLM and resources within the Project Area is directed and guided by the Vernal Field Office (VFO) Record of Decision (ROD) and Resource Management Plan, approved October 31, 2008. As stated in the VFO Approved ROD (pg. 86), the BLM’s primary management objectives for the lands and realty programs are to:

- Process applications, permits, operating plans, mineral exchanges, leases, and other use authorizations for public lands in accordance with policy and guidance; and
- Manage public lands to support goals and objectives of other resources programs, respond to public requests for land use authorizations.

Specific lands and realty management decisions pertinent to this proposal include:

- **LAR-15:** All applications to pave routes will be evaluated in site-specific NEPA analysis to determine the need for fencing.
- **LAR 41:** These approved transportation/utility corridors are the preferred location for future major linear ROWs which meet the following criteria: Paved routes *or* routes consisting of more than two lanes.
- **LAR 42:** Major linear ROWs meeting the above thresholds that are proposed outside of the preferred, designated corridors may require a plan amendment.

A review of the Proposed Action and alternatives against the above-stated decisions has determined that the Proposed Action and alternatives would be in conformance with the VFO Approved RMP. Consideration of an amendment to Uintah County's existing Seep Ridge Road ROW would be in conformance with the overall management goals and objectives stated above. The proposed amendment would also be in conformance with specific lands and realty management decisions because the need for fencing of the paved Seep Ridge Road was considered (refer to Section 2.3.3).

1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS

The proposed activity is in conformance with FLPMA, as amended. This EA was prepared by the BLM in accordance with NEPA and in compliance with all applicable regulations and laws passed subsequently, including the President's Council on Environmental Quality (CEQ) regulations, U.S. Department of Interior requirements and guidelines listed in the *BLM Manual Handbook H-1790-1* (BLM 2008b), and Utah BLM NEPA Guidebook (BLM 2010). This EA assesses the environmental effects of the Proposed Action (Alternative A) and alternatives, and also serves to document public participation and consultation conducted with other agencies.

The alternatives considered in this EA are also consistent with the Uintah County General Plan (Uintah County 2007, as amended). The Uintah County Plan generally indicates support for development proposals in its emphasis of multiple-use public land management practices and its emphasis of responsible use and optimum utilization of public land resources. Within the Uintah County General Plan, multiple-use is defined as including, but not being limited to, the following historically and traditionally-practiced resource uses: grazing, recreation, timber, mining, oil and gas development, agriculture, wildlife habitat, and water resources as they become available or as new technology allows.

The State of Utah is obligated by both the Utah Enabling Act and the Utah Constitution to act as a trustee in managing school trust lands. The State Institutional Trust Lands Administration (SITLA) is the independent state agency responsible by law for the management of these lands. The BLM understands that their management decisions affect the ability of the Utah public schools to receive the revenue from the in-held school lands, as intended by Congress when they were granted.

1.6 IDENTIFICATION OF ISSUES

Issues were identified both internally and externally relative to this proposal. Internally, the BLM and Uintah County met on May 19, 2008, to review the elements of the Proposed Action. An Interdisciplinary Team analysis was completed and documented in the Interdisciplinary Team (IDT) Analysis Record Checklist (refer to Appendix A). Those resources identified as not present (NP) in the Project Area or not impacted (NI) were not carried forward into the EA. Resources identified as potentially impacted (PI) are identified below and were carried forward in Chapters 3 and 4 of this EA.

Externally, the Proposed Action was posted to the BLM Environmental Notification Bulletin Board (ENBB) on December 01, 2008. Uintah County conducted a public meeting on September 16, 2008 in Vernal, Utah. Attending this meeting were 12 citizens of which 5 provided comments. In addition, private landowners owning lands over which the Seep Ridge Road crosses were contacted on April 1, 2009, for their issues and concerns on the proposed project. The BLM has coordinated with the affected grazing permittees as to their concerns relative to this project.

Issues identified from both the internal and external scoping exercises are identified below. (Note: The issues listed below follow the presentation in the IDT Checklist.

1.6.1 AIR QUALITY

- Impacts to air quality from fugitive dust created during construction activities.

1.6.2 CULTURAL RESOURCES

- Impacts to historic and prehistoric sites from construction activities within the Project Area.

1.6.3 FLOODPLAINS

- Impacts to Cottonwood Wash and its associated floodplain from proposed construction activities.

1.6.4 INVASIVE PLANTS/NOXIOUS WEEDS

- Impacts to native vegetation communities from introduction and/or expansion of invasive weeds from construction-related vehicles and equipment and the anticipated increase in vehicle traffic on the upgraded roadway.

1.6.5 LANDS/ACCESS

- Impacts to existing authorized easements (e.g., pipelines) that parallel and/or cross the Seep Ridge Road ROW from proposed expansion of and improvements to the existing ROW.

1.6.6 LIVESTOCK GRAZING

- Impacts to grazing operations in the Project Area, including existing range improvements (water facilities, corrals, fences, etc.) from proposed expansion of and improvements to the ROW.

1.6.7 PALEONTOLOGY

- Impacts to paleontological resources from proposed construction activities.

1.6.8 RECREATION (INCLUDING TRAVEL MANAGEMENT)

- Impacts to dispersed as well as planned/designated recreation facilities from improvements to be made to the Seep Ridge Road, especially paving the road and proximity to these facilities.
- Impacts to OHV users from improvements to be made to the Seep Ridge Road.

1.6.9 SOCIO-ECONOMICS

- Impacts from the proposed road improvements on the public's perception of the Book Cliffs as a remote and primitive area.
- Impacts from road improvements to existing law enforcement activities in the Book Cliffs area.
- Impacts to Grand County's annual road maintenance budget from Uintah County's proposed improvements to the Seep Ridge Road.

1.6.10 SOILS

- Impacts to soil resources from increased sedimentation from construction activities.

1.6.11 SPECIAL STATUS ANIMAL SPECIES OTHER THAN USFWS CANDIDATE OR LISTED SPECIES, (e.g. MIGRATORY BIRDS)

- Impacts to sage grouse, white-tailed prairie dog, burrowing owl, raptors and migratory birds from proposed expansion of and improvements to the ROW.
- Impacts to big game species' habitats and traditional free-ranging movements from proposed improvements made to the ROW.
- Impacts to big game individuals from animal/vehicle collisions resulting from expected increased vehicle traffic on the improved roadway.

1.6.12 SPECIAL STATUS PLANT SPECIES OTHER THAN USFWS CANDIDATE OR LISTED SPECIES

- Impacts to Graham beardtongue (*Penstemon grahamii*) from proposed construction activities along the Seep Ridge Road.

1.6.13 THREATENED, ENDANGERED AND CANDIDATE ANIMAL SPECIES

- Impacts to Colorado River system endangered fish and their critical habitat from possible water depletions from the White and Green Rivers.

1.6.14 THREATENED, ENDANGERED AND CANDIDATE PLANT SPECIES

- Potential impacts to clay reed mustard (*Schoenocrambe argillacea*) and Uinta Basin hookless cactus (*Sclerocactus wetlandicus*) in areas adjacent to the current Seep Ridge Road from construction activities.

1.6.15 VEGETATION

- Impacts to native vegetation communities from construction activities.

1.6.16 WATER QUALITY (SURFACE/GROUND)

- Impacts to water quality from increased surface runoff coming off the improved road.
- Potential impacts due to increased amounts of water coming off the paved road.

1.6.17 WATERS OF THE U.S.

- Impacts to the drainages involving waters of the United States from flash runoff events.

1.6.18 WOODLAND/FORESTRY

- Impacts to pinyon-juniper woodlands within the ROW from construction activities.

2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter provides detailed descriptions of the two alternatives for the Seep Ridge Road Paving Project EA. The alternatives assessed in detail in this EA are as follows:

- Alternative A - Proposed Action
- Alternative B - No Action

2.1 ALTERNATIVE A – PROPOSED ACTION

Uintah County proposes to amend its existing ROW UTU-69125-35 to reconstruct and upgrade the Seep Ridge Road as follows:

- Expand the existing ROW width from 66 feet to 150 feet.
- Redesign and reconstruct the existing road to bring it into compliance with current federal (AASHTO Green Book) and Utah Department of Transportation (UDOT) highway standards.
- Upgrade the existing native road base to an all-weather bituminous surface pavement.
- Reclaim and install barriers on existing road segments that would be abandoned due to road realignment.

Upgrade and paving activities of the Seep Ridge Road would begin at a point on the historic Uintah and Ouray Indian Reservation Boundary (located in the NW1/4NW1/4 section 11, T10S, R20E, SLM), and continue in a southerly direction, ending at Uintah County’s southern boundary line (located in the SW1/4SW1/4 section 36, T15S, R24E, SLM) (refer to Exhibit 1 in Appendix F).

The total length of the proposed ROW would involve approximately 44.5 miles, of which approximately 69 percent would involve federal lands; 29 percent would involve State of Utah lands, administered by Utah’s School and Institutional Trust Lands Administration (SITLA); and, 2 percent would involve private lands. Table 2-1.1 provides a comparison between the existing and the proposed dimensions for the Seep Ridge Road.

Table 2.1-1 Comparison of Existing and Proposed Dimensions for the Seep Ridge Road

	Existing ROW	Proposed ROW
Length	45.3 miles	44.5 miles
Width	66 feet	150 feet
Total Acres	362	809.1
Disturbance Acres*	192.3	609.0
Percent of Total Acres	53	89
Acres of Existing Road to be Reclaimed Outside Proposed ROW	0	46.8

*Includes the running road surface

Specifically, the following lands would be involved:

Bureau of Land Management

T10S, R20E, sections 11 and 12
T11S, R21E, sections 6, 7, 17, 18, 20, 29 and 33
T12S, R21E, sections 4, 9, 10, 15, 22, 23, 25 and 26
T12S, R22E, sections 30 and 31
T13S, R22E, sections, 4, 5, 6, 9, 10, 11, 14, 23, 26 and 35
T14S, R22E, sections 3, 11, 14, 23, 24 and 25
T14S, R23E, sections 30 and 31
T15S, R23E, sections 5, 8, 9, 16 and 22

State of Utah

T10S, R20E, sections 13, 24, 25 and 36
T11S, R21E, section 32
T13S, R22E, section 26 and 35
T14S, R22E, section 2
T14S, R23E, section 32
T15S, R23E, sections 16, 21, 22, 26, 27, 35 and 36

Private

T13S, R22E, section 35
T14S, R22E, section 11

The county would obtain amended ROW grants from SITLA for those portions of the Seep Ridge Road crossing state lands. The county would also secure easements and surface use agreements from private land owners for those portions of the road crossing private lands.

2.1.1 CONSTRUCTION ELEMENTS

Upon receipt of needed authorizations, construction activities would begin in the spring of 2011 and could continue for up to 6 years, or until the project is complete.

The county, and its contractors or subcontractors, would adhere to established federal and state road design and construction standards. To ensure public safety and the protection of the surface resources – reconstruction and upgrades would be accomplished to the appropriate standards. Construction design elements would include the following:

- The posted existing speed limit is 35 miles per hour (mph). Design speed would be 55 miles per hour (mph). The proposed posted speed limits would be as follows:
- 35 mph during construction activities
- 35-45 mph while the road’s surface is graveled
- 55 mph after the entire roadway is paved

- The county would install speed limit signs along the length of the Seep Ridge Road. Enforcement of these speeds would be carried out through public education and county law enforcement.
- Maximum grades would not exceed 8 percent; pitch grades for lengths not to exceed 300 feet could be allowed to exceed 8 percent in some cases.
- An estimated 16 culverts would need to be installed along the proposed roadway. These culverts would be sized in accordance with accepted engineering practices, special environmental concerns, and applicable practices adopted under authority of the Federal Clean Water Act. The minimum size for any culvert would be 18 inches and would be designed to accommodate a 100-year storm event without developing a static head of water.
- Culverts would be laid on natural ground or at the original elevation of any drainage crossed. The outlet of all culverts would be at least 1 foot beyond the toe of any slope. Rip-rap or rock would armor the outlet ends of the culvert to prevent soil erosion or to trap sediment.
- Identified segments of the road would involve climbing lanes, i.e., a third lane needed to facilitate slower, heavier traffic. Current AASHTO design criteria state a climbing lane is appropriate if a combination of grade and length of grade reduces the expected speed by 10 miles per hour (mph) or greater for a typical heavy truck. An estimated 27 climbing lanes, involving 14.7 miles of the roadway would be involved. These segments of the road would involve an estimated total of approximately 147.5 acres. (Refer to Appendix B for engineer's typical drawings of the proposed road improvements.)
- Minimize impacts to Cottonwood Wash's 100-year floodplain by adhering to the design standards for culverts, drainage, and storm water standards as set out in this section.
- Ditch grades would be no less than 0.5 percent to provide positive drainage and to avoid siltation.
- Drainage of the inside ditch and sidehill runoff would be provided.
- Water turn-outs would be rock armored.
- In areas where steep slopes occur, proper road design and appropriate erosion control measures (e.g. stabilization barriers, water bars, silt fences, etc.) would be implemented to prevent down slope erosion. Design standards for these structures would be based on the following: Utah Pollutant Discharge Elimination System (UPDES) program; National Pollutant Discharge Elimination System (NPDES) Region 8 EPA; and, BLM/USFS 2007 Gold Book.
- Appendix B provides engineers' typical road cross section and design drawings.

2.1.2 OTHER PROJECT ELEMENTS

All staging areas would be located on state lands along the Seep Ridge Road and within the proposed ROW. Staging areas would accommodate stockpiled materials, equipment and vehicle parking and batch sites for processing of the paving material. To the extent reasonable, excavated cut and fill material will be used on site. Any additional needed mineral materials (gravel, sand, etc.) would be acquired from private, county, or state sources. No mineral materials would be acquired from federal lands. Any material delivered to these sites would be properly stored.

During periods of extreme wildfire conditions (i.e., prolonged dry periods with high temperatures, presence of dried or “flashy fuels”), extreme caution would be used in performing reconstruction and/or upgrade activities. Woody debris, created by reconstruction activities, would be either removed from the site or mulched and redistributed over the disturbed area during reclamation activities.

Sanitary facilities would be onsite at all times during construction and installation. Sewage would be placed in portable chemical toilets. The toilets would be pumped or replaced regularly utilizing a licensed contractor. Toilet contents would be delivered to an approved wastewater treatment facility in accordance with state and county regulations.

All refuse (e.g. trash and other solid waste, including cans, paper, etc.) generated during the reconstruction and upgrade activities would be contained in enclosed receptacles, removed from the location promptly, and hauled to an authorized disposal site. No potentially adverse materials or substances would be left onsite.

All project-related activities involving hazardous materials would be conducted in a manner that minimizes potential environmental impacts. Current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances that are used in the course of construction and upgrade operations would be maintained on-site by the project supervisor.

No chemicals subject to reporting under SARA Title III (hazardous material) in an amount greater than 10,000 pounds would be used, produced, stored, transported, or disposed of in association with the Proposed Action. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of in association with the Proposed Action. Any spills of potential hazardous substances would be reported immediately to the appropriate surface managing agency (SMA) and regulatory authorities, and would be promptly cleaned up and removed to an approved disposal site.

Water would be used to control fugitive dust created during reconstruction and upgrade operations. The water would be secured by Uintah County from existing Water Right No. 41-3523. Information on this water right is outlined in Table 2.1-2.

Table 2.1-2 Source of Water for the Seep Ridge Road Paving Project

Owner	State Permit No.	Source	Permitted Amount (Acre-Feet)	Priority Date
Uintah Water Conservancy District	41-3523	Green River	33,560	8/07/1958

Utah Division of Water Rights. 2009

Construction of the proposed improvements to the road would require approximately 424 acre-feet of water over the 6-year period (or approximately 71 acre-feet per year). In accordance with the 1987 Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (USFWS 1987), this water right is a historic depletion (permitted prior to January 1988).

2.1.3 RECLAMATION

Reclamation would be completed on approximately 367 acres of proposed disturbance and 46.8 acres of the existing Seep Ridge Road alignment that would be closed. Details of the reclamation and weed control plans are set out in Appendix C.

2.1.4 MAINTENANCE AND OPERATION

On completion of the Proposed Action, the county would conduct regular inspections of the road and the ROW and complete needed repair and maintenance actions as scheduled or identified. The Seep Ridge Road would be maintained and kept open year-round.

2.1.5 BEST MANAGEMENT PRACTICES AND APPLICANT-COMMITTED PROTECTION MEASURES

The actions described below would be implemented to reduce the potential environmental impacts of the Proposed Action. These Best Management Practices (BMPs) and applicant-committed protection measures are based upon guidelines developed by the BLM in consultation with the county and the appropriate SMA.

2.1.5.1 Cultural Resources

- A Class III cultural resources survey was conducted by SWCA Environmental Consultants (Johnson 2009) in April 2009. The area of potential effects (APE) for the new road improvements and construction of new road segments, as it applies to cultural resource impacts, consists of a 300 foot wide corridor extending 150 feet on both sides of center line of the proposed road for the entire 45 miles of the roads corridor. The entire corridor was surveyed by an archaeologist walking 15 meter transects, which is considered to be 100% coverage, in an effort to identify and record cultural resources within the APE. Prior to the cultural resource survey, a literature review was performed in order to collect information on previously recorded cultural resources in and around the APE. The literature review area extended 1,200 feet on both sides of the 300 foot corridor. In addition, previously recorded cultural resources within the APE were revisited during the survey.
- Cultural resource sites determined “eligible” for listing on the National Register of Historic Places (NRHP) would be avoided by any surface disturbing activities associated with reconstruction operations where possible. Sites eligible for the NRHP that cannot be avoided are addressed in chapter 3 and 4 of this document.
- Additionally, areas identified as having a high probability of encountering potentially significant subsurface archaeological materials and any eligible sites that are not directly impacted by construction but are within the 300 feet of the cultural resource APE would require a qualified archaeologist to monitor surface disturbance activities.
- If previously unidentified cultural material is encountered during construction work in the immediate area will stop and the BLM archaeologist called to investigate. Work in the area will not resume until the site has been recorded and/or mitigated.
- The county will inform their employees, contractors and subcontractors about relevant federal regulations intended to protect cultural resources.

2.1.5.2 Paleontological Resources

- If paleontological resources are uncovered during ground-disturbing activities, the county would suspend all operations that would further disturb such materials and would immediately contact the appropriate SMA. A determination would be made by the

SMA's authorized officer as to what mitigation may be necessary for the discovered paleontological material before construction can resume at that location.

2.1.5.3 Soils

- No construction activities would be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 3 inches deep in a straight line of travel, the soil would be deemed too wet to adequately support the equipment, and construction activities would cease until drier or frozen soil conditions exist.
- As stated in Section 2.1.1, the county would adhere to established federal and state road design and construction standards and implement BMPs that would minimize impacts to soil and water resources. These BMPs include proper grade, culvert size and placement, ditch grades, drainages, installation of water turn outs and storm water standards under current National Pollutant Discharge Elimination System, specifically installation of stabilization barriers, water bars, silt fences, etc.)

2.1.5.4 Invasive Plants/Noxious Weeds

- Per the Weed Control Plan (refer to Appendix C), conduct a pre-construction noxious weed inventory along the entire ROW. The result of this inventory would include GPS location and associated field notes indicating the type and size of each infestation. This data would be formulated into a report and submitted to the appropriate SMA.
- Preparation of a Pesticide Use Proposal would be completed as required by the VFO Approved RMP. Control of invasive plants and noxious weeds on state and private lands would be consistent with direction from the appropriate SMA.
- All disturbed surface areas would be monitored annually for the presence of noxious weeds. If monitoring showed the presence of noxious weeds, the county would be responsible for treating these areas. Control measures would be conducted before seed set annually. Monitoring and treatment would be conducted annually until reclamation and weed ratification was deemed successful by the appropriate SMA.
- All vehicles and equipment coming from outside the Uinta Basin associated with the Proposed Action would be power washed to remove seed and plant materials before entering the Project Area.

2.1.5.5 Special Status Animal Species Other than USFWS Candidate or Listed Species, (e.g. Migratory Birds)

- Prior to any new surface-disturbing reconstruction activities between January 1 and August 31, all areas on BLM lands within 1.0 mile of the proposed surface disturbance would be surveyed for the presence of raptor nests. If occupied raptor nests are found, new surface disturbance related construction would not occur within the species-specific protective radius of the active nest during the species-specific nesting season, as set out in Attachment 2 the *Best Management Practices for Raptors and Their Associated Habitats in Utah* (BLM 2008a, Appendix A).
- The road would be regularly inspected by county personnel to remove wildlife carrion from the Seep Ridge Road, shoulders and ROW area to reduce the likelihood of vehicle collisions with carrion-feeding raptors and scavengers.

- In October 2009, Uintah County and UDWR signed an interlocal cooperative agreement (refer to Appendix H). The agreement is the culmination of several meetings among local, state and federal entities. The purpose of the agreement is to assure that improvements to the Seep Ridge Road in Uintah County does not negatively impact the resident deer herd. As a product of the agreement, the county and UDWR committed to conduct a five-year study (begun in November 2009) to determine an estimate of deer road kills along the entire portion of the road. UDWR and the county will reach an agreement as to an acceptable loss limit as a baseline. If the study reveals the number of deer road kills exceeds the agreed-upon acceptable loss limit, then the county agrees to provide mutually agreed-upon mitigation measures. The specific mitigation measures will be determined by the BLM, UDWR, the county, and other experts, as needed. These measures could include speed reduction, seasonal adjustments, fencing, crossing structures or other appropriate measures. The county also agrees to plan and install six mule deer crossing structures for deer along the Seep Ridge Road at locations determined in coordination with the UDWR.

2.1.5.6 Livestock Grazing

- Where reconstruction activities cross existing livestock fences or would involve existing cattleguards, the following would be implemented:
- All fences would be braced before being cut and a temporary gate would be installed. All fences would be restored to functional condition or replaced with like fencing immediately after project completion in that area to assure livestock do not trespass onto adjacent grazing allotments.
- If the roadway project is determined to interfere with livestock operations, the county would work cooperatively with the appropriate SMA and the affected livestock operator to negotiate a resolution to the situation.
- Upgrade to expand 4 existing cattleguards to 40 foot widths. Locations for these cattleguards are: NW¹/₄NW¹/₄ section 11, T10S, R20E; SE¹/₄SW¹/₄ section 31, T12S, R22E; NE¹/₄NE¹/₄ section 23, T14S, R22 E; and NE¹/₄NE¹/₄ section 27, T15S, R23E.
- If the reconstruction activities would destroy or reduce the functionality of existing animal watering ponds/reservoirs (i.e., disrupt water from entering into the catchment ponds from either the drainage and/or apron area) within the immediate vicinity of the ROW, such structures would be replaced or restored to functional condition as determined appropriate by the SMA. Specifically, in coordination with the livestock operators and the appropriate SMA, the following specific actions would be completed:
- Maintain up to 12 existing watering ponds/reservoirs that would be affected by the proposed upgrades. Site-specific maintenance activities on these sites would be determined by the appropriate SMA. No new surface disturbance would be associated with these maintenance activities.
- Construct 1 new reservoir outside of the proposed ROW in the Sand Wash Allotment in section 26, T15S, R23E. The county would construct the new watering pond/reservoir to current construction standards set out in BLM Manual 9100. Estimated new surface disturbance associated with the new watering pond/reservoir would involve about 2 acres.
- Move the Monument Ridge Pasture Corral (currently located at the junction of the Seep Ridge and Monument Ridge Roads in the NW¹/₄NW¹/₄ section 26, T15S, R23E) approximately 350 feet east to a site outside the proposed ROW. The existing corral

would be dismantled. The new corral would have the same dimensions as the current corral and would be built to current construction standards set out in BLM Manual 9100. Approximately 2 acres of new surface disturbance would be involved with this relocation.

- The county would install warning signs and would post advisory lowered speeds of 40 mph along the road to warn of free-roaming livestock and in areas of concentrated wildlife.

2.1.5.7 Lands/Access

- Flag persons and signs will warn the public of any travel delays due to construction. Detours, when needed, would be appropriately marked and the general public notified in advance via public announcements of any closures of the Seep Ridge Road.
- The county acknowledges the existing authorizations for surface and possible buried pipelines located within the existing Seep Ridge Road ROW. When construction activities affect the placement of any of these lines, the grantor will be consulted before any surface disturbance is initiated that could compromise the integrity of the pipeline. The county will work with the authorized operator to minimize disruptions to ongoing pipeline operations and ensure the continued functionality of the pipeline(s).
- All roads intersecting with the Seep Ridge Road will be restructured to provide safe access for heavy trucks and or vehicles pulling trailers. Intersections of the area's major roads with the Seep Ridge Road will be further enhanced by building to grade and installing paved "aprons" sufficient to allow safe and proper travel by slow-moving, low-slung vehicles and trailers.

2.1.5.8 Recreation

- The county would move the existing Buck Canyon kiosk (located at the head of Buck Canyon in the SE¼SW¼ section 30, T12S, R22E). The Buck Canyon kiosk site includes both an information kiosk and a self-contained rest room. These facilities need to be moved to allow for realignment of the proposed road. These structures would be relocated within the proposed expanded ROW, in close proximity to their current location, and involve approximately 1 acre.
- As with livestock grazing, the county would install warning signs and would post an advisory lowered speed limit of 40 mph along the road warning of areas of concentrated OHV use and recreational activity in the vicinity of existing recreation sites and known areas of dispersed camping.

2.1.6 SUMMARY OF THE PROPOSED ACTION

The dimensions of the Project Area would be 44.5 miles in length and 150 feet in width, involving 809.1 acres. All surface disturbing activities would be limited to these dimensions, i.e., no disturbance would occur outside the 150-foot width. Of the 44.5 miles, approximately 29.8 miles would accommodate 2 lanes of traffic and the remaining 14.7 miles would be increased to 3 lanes to provide climbing lanes for slow moving traffic. The total running surface of the proposed road would involve 150.84 acres (86.69 and 64.15 acres respectively for the 2- and 3-lanes). Thus, approximately 658.26 acres would be involved in areas of cut and fill and construction activities to provide ditches, shoulders, erosion control structures, etc. For the purposes of this EA, the Project Area includes the total 809.1 acres associated with the ROW; the proposed relocation of the Monument Ridge Pasture Corral and the construction of 1 stock watering

pond/reservoir on federal lands, the estimated Project Area for the Proposed Action, would involve approximately 4 acres, for a total project acreage of 813.1 acres. In addition, the Proposed Action would close and reclaim approximately 46.8 acres of existing roadway outside the proposed ROW that would no longer be needed. Table 2-1.3 provides a summary of the surface ownership, project dimensions and estimated surface disturbance associated with the Proposed Action.

Table 2.1-3 Summary of the Proposed Action’s Project Dimensions and Estimated Surface Disturbance, by Surface Ownership

	Federal	State	Private	Total
Overall Dimensions				
Road (in miles)	30.5	12.7	1.3	44.5
Percent of Project	68.4	28.7	2.9	100
ROW Area (150’ width)	550.0	234.1	25	809.1
Applicant-Committed Measures				
Watering Pond	2	0	0	2
Relocation of Corral	2	0	0	2
Estimated Total Acres of Surface Disturbance	554	234.1	25	813.1
Acres of Existing Road to be Reclaimed	29.1	17.7	0	46.8

2.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, the application for an amendment to the county’s existing ROW UTU - 69125-35 would be denied, and the county would not be authorized to complete upgrades to the Seep Ridge Road outside of the existing 66-foot ROW width. The county would continue to complete needed maintenance to the existing native material roadway, ensuring the road remains open year-round. Water would be used during maintenance activities to control and/or eliminate fugitive dust. As with the Proposed Action, water needed for such activities would be acquired from a Historic Depletion Source.

The water right would be secured by Uintah County from a water right obtained in 1958 by the Uintah Conservancy District. Annual maintenance activities could require approximately 40 acre-feet of water per year. It is unlikely that the county would pave the existing roadway under its current ROW authorization because paving the existing roadway would not correct those road segments needing to be upgraded to current safety design standards.

2.3 ALTERNATIVE C – BUCK CANYON TERMINUS

Alternative C would allow Uintah County to construct an all-weather bituminous paved surface road beginning at a point on the historic Uintah and Ouray Indian Reservation Boundary (located in the NW1/4NW1/4 section 11, T10S, R20E, SLM); and continue in a southerly direction, ending at the intersection of the Buck Canyon Road (located in the SW1/4SW1/4 section 30, T12S, R22E, SLM) (refer to Exhibit 1 in Appendix F).

The total length of the proposed ROW under Alternative C would involve approximately 19.6 miles, of which approximately 74 percent would involve federal lands; 26 percent would involve State of Utah lands, administered by Utah’s School and Institutional Trust Lands Administration (SITLA). Table 2-3-1 provides a comparison between the existing and the proposed dimensions for the Seep Ridge Road.

All applicable construction and project elements, as described in the proposed action above, would apply to this alternative with construction/improvements ending at the Buck Canyon intersection. In areas where re-routing of the road would isolate existing road segments, those areas would be closed and subject to reclamation as described in the attached reclamation plan in Appendix C.

Table 2.3-1 Comparison of Existing and Proposed Dimensions for Terminating at Buck Canyon

	Federal	State	Private	Total
Overall Dimensions				
Road (in miles)	14.5	5.1	0	19.6
Percent of Project (Alternative C)	74	26	0	100
ROW Area (150' width in Acres)	263.1	92.5	0	355.6
Applicant-Committed Measures				
Watering Pond	2	0	0	2
Estimated Total Acres of Surface Disturbance	265.1	92.5	0	357.6
Acres of Existing Road to be Reclaimed	16.8	10.5	0	27.3

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

2.4.1 AN ALTERNATIVE TO INCLUDE THE ADDITION OF A 10-FOOT ATV/MOUNTAIN BIKE TRAIL WITHIN THE EXPANDED ROW OF THE PROPOSED ACTION

- The trail was not identified as a key element of the county's need for the Proposed Action Alternative.
- The ATV/mountain bike trail created more safety concerns and heightened possible conflicts between the ATV and potential mountain bike users of the trail.

2.4.2 AN ALTERNATIVE TO FENCE THE ENTIRE ROW TO EXCLUDE LIVESTOCK AND/OR WILDLIFE

- Segments of comparable paved, 2-lane highways in the Uintah Basin, portions of U.S. Highway 191 in Indian Canyon and portions of Colorado Highway 139 over Douglas Pass are presently unfenced.
- Although vehicle accident records are kept for Uintah County, initially no animal/vehicle collisions data were known. This absence of data is being corrected by an on-going 5-year study (refer to Section 2.1.4). Criteria under which fencing the ROW would be considered is outlined in Appendix H.

3.0 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter presents the potentially affected environment (i.e., the physical, biological, social, and economic values and resources) of the Project Area, and provides the baseline for comparison of impacts/consequences described in Chapter 4.

The Project Area is characterized by low rolling hills and rock outcrops representative of the high desert plains at the lowest to mid-elevations and tabletops with deeply incised drainages and canyons at the highest elevations. The vegetation in the Project Area is typical of the Uinta Basin floristic region, where precipitation and soil parent material are controlling factors for plant composition. Vegetation ranges from sparse desert shrubs and grasses in the lowest elevations to woodland and conifer forest areas at the highest elevations. Elevations for the Project Area range between 5,050 feet, at the northern end of the Project Area, and approximately 8,000 feet at its southern end, at the Uintah-Grand County line.

Resources considered in this EA include the environmental elements identified as “PI” in the IDT Analysis Record Checklist (refer to Appendix A). Other environmental elements were considered but were dismissed from further analysis because the resource was not present in the Project Area, because the alternatives would have no substantial impacts on the environment, or because the specific actions and BMPs set out in the county’s Proposed Action, described in Chapter 2, would reduce the impacts of the alternatives to negligible levels.

3.2 AIR QUALITY

3.2.1 WINDS AND ATMOSPHERIC STABILITY

The climate in the Project Area is characterized as arid, with cold winters and hot summers. Annual precipitation ranges from 8 inches (at the northern end of the Project Area) to more than 24 inches (at the southern end of the Project Area) and is dependent largely on elevation and aspect. Temperature inversions are common in the lower elevation areas of the Uinta Basin. Inversions commonly occur in winter when snow accumulation on the ground combines with short daylight hours. In summer, inversions dissipate rapidly when early morning sunlight warms the air near the ground surface. Inversions can hinder air pollutant dispersion by preventing dust and emissions from mixing with the ambient air in the vertical direction (BLM 2008c).

The transportation and dilution of air pollutants, including fugitive dust, are primarily a function of wind speed and direction. Winds dictate the direction in which pollutants are transported. As wind speed increases, the dispersion of emitted pollutants also increases, thereby reducing pollutant concentrations. Monthly wind data recorded from 1997 to present at the BLM’s Upper Sand Wash Remote Access Weather Station (RAWS), approximately 0.5 miles north of the Seep Ridge Road in section 10 T13S, R22E, indicates that the prevailing winds are out of the south-southwest.

3.2.2 AIR QUALITY

National Ambient Air Quality Standards (NAAQS) have been promulgated by EPA for the purpose of protecting human health and welfare with an adequate margin of safety. Pollutants for which standards have been set and apply to the proposed action include ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), and particulate matter less than 2.5 microns in diameter (PM_{2.5}). When an area is demonstrated through air monitoring as meeting the NAAQS it is designated as attainment. Conversely if

an area is demonstrated through air monitoring as not meeting the NAAQS it is designated as nonattainment. If an area does not have enough air monitoring to make a NAAQS determination it is designated as unclassified and regulated as an attainment area.

The NAAQS have been recently revised for the ozone, NO₂, and PM_{2.5} standards. The changes reflect a stricter ozone standard (lowered from 0.08 ppm to 0.075 ppm), the implementation of a 1 hour averaging time standard for NO₂, and a stricter PM_{2.5} 24-hour standard (lowered from 65 µg/m³ to 35 µg/m³).

Fugitive dust is the most prominent air pollutant related to this project, and is intermittent depending on winds and dust-causing activities. The VFO Approved RMP states that the Vernal Planning Area, including the Project Area, is located in a region designated as unclassifiable for Particulate Matter less than 10 microns in diameter (PM₁₀) (BLM 2008a). Particulate matter varies greatly in shape, size and chemical composition, and can be made up of many different materials, including dust.

Ozone Air Monitoring

Active ozone monitoring in the Uinta Basin (which includes the project area) began in the summer of 2009 at the Ouray and Redwash monitoring sites previously referenced. Both of these monitoring sites have recorded numerous exceedences of the 8 hour ozone standard during the winter months (January through March). The maximum 8 hour average recorded to date is 0.123 ppm, well above the current ozone NAAQS of 0.075 ppm. This data has recently been released by EPA.

Apparently, high concentrations of ozone are being formed under a “cold pool” process whereby stagnate air conditions with very low mixing heights form under clear skies with snow-covered ground and abundant sunlight that, combined with area precursor emissions (NO_x and VOCs), create intense episodes of ozone. Based on the first year of monitoring these episodes occur only during the winter months (January through March). This phenomenon has also been observed in similar types of locations in Wyoming, and has contributed to a proposed nonattainment designation for Sublette County.

The National Park Service also operates an ozone monitor in Dinosaur National Monument during the summer months. No exceedences of the current ozone NAAQS have been recorded at this site.

3.3 CULTURAL RESOURCES

The area of potential effect (APE) is defined as 45 miles of roadway defined as the Seep Ridge road project, with a 300 foot corridor (150 feet either side of center). An additional 4 acres were allotted for the relocation of the Monument Ridge Pasture Corral and the construction of 1 watering pond/reservoir on federal land to mitigate the loss of a stock pond along the Seep Ridge Road.

A Class III cultural inventory was conducted by SWCA on part of the APE in 2008. It was later determined that the area surveyed was not adequate and SWCA was asked to go back and survey the entire APE. In April 2009, SWCA completed an intensive cultural inventory across the entire APE.

Ten archaeological sites were recorded within the APE; five of the sites were recommended as eligible to the NRHP. The other five sites were recommended as “not-eligible” to the NRHP. All eligible sites were avoidable under the current road design except site 42Un1779, which is a large lithic scatter.

Table 3.3-1 Cultural Resources Recorded or Updated within the Area of Proposed Effect (APE)

Site No.	Description	National Register Eligibility
42Un0646	Prehistoric lithic scatter composed of debitage (flakes) with tools in a 29 meter x 31 meter area.	Not Eligible
42Un1779	Prehistoric lithic scatter with features and tools.	Eligible
42Un1782	Prehistoric campsite composed of hearth features and debitage in a 90 meter x 20 meter area.	Eligible
42Un2487	Historic Buck Canyon Road with no associated historic artifacts.	Eligible
42Un5506	Historic campsite composed of tin cans, glass, several diagnostic artifacts, and modern debris in a 56 meter x 30 meter area.	Not Eligible
42Un7040	Multi-component site consisting of an historic debris scatter and small prehistoric flake scatter. Several diagnostic historic artifacts and historic features with one historic and prehistoric artifact concentration are present. Total site area is approximately 50 x 50 meters.	Eligible
42Un7041	Historic debris scatter with several diagnostic artifacts in an approximate 25 meter squared area.	Not Eligible
42Un7633	Prehistoric flake and ceramic sherd scatter with chipped stone tools in an approximate 57 meters x 42 meter area.	Eligible
42Un7634	Multi-component site consisting of an historic debris scatter and prehistoric flake scatter. Several diagnostic historic artifacts and one prehistoric flake concentration are present. Total site area is approximately 79 x 67 meters.	Not Eligible
42Un7635	Historic Monument Ridge Road Corral with no associated artifacts. Corral measures 154 feet x 109 feet	Not Eligible

An alternative route to the west of site 42Un1779 was specifically surveyed in the 2009 report to allow avoidance of the large “eligible” lithic site. A new site, 42Un7633, was identified during that cultural inventory and was determined to be eligible.

3.4 PALEONTOLOGY

The Project Area contains three mapped bedrock geologic units (Cashion 1973), all of which are of middle Eocene age: lower Uinta Formation, and Parachute Creek and upper Douglas Creek members of the Green River Formation. In addition to these units, Holocene-age alluvium and colluvium were observed during the field survey conducted for this project. The geology of these units is described in greater detail in the technical reports prepared for the paleontological resource survey (Daitch et al. 2008).

The paleontological sensitivity of each geologic unit to be affected was evaluated using the Potential Fossil Yield Classification System (PFYC), adopted as policy by the BLM (BLM 2007). This system classifies geologic units based on the relative abundance of vertebrate fossils or scientifically-important invertebrate and plant fossils and their sensitivity to adverse impacts. This classification is applied to a geologic formation, member, or other distinguishable unit. This new classification system recognizes that although substantial fossil localities may occasionally occur in a geologic unit, a few widely spaced localities do not necessarily indicate a higher class. Instead, the relative abundance of substantial

localities is intended to be the major determinant for the class assignment. Table 3.4-1 outlines the PFYC designations for the affected geologic units for this project.

Table 3.4-1 Paleontological Sensitivities of Geologic Units within the Project Area

Geologic Unit	Map Symbol*	Age	Typical Fossils	PFYC
Alluvium and colluvium	Qa	Holocene	Unfossilized remains of modern taxa, too young to contain fossils.	Class 2
Uinta Formation, lower Member	Tul	Eocene	Locally abundant plants (leaves, seeds, wood); invertebrates (insects, mollusks); and a highly diverse and scientifically important vertebrate fauna (reptiles, mammals)	Class 5
Green River Formation, Parachute Creek Member	Tgp	Middle Eocene	Ichnofossils (insect, bird and mammal tracks, inferred spider web with spiders and insects, and bird feathers); invertebrates (insects and mollusks); plans (leaves and wood); vertebrates (fish and less common reptiles and mammals)	Class 4/5
Green River Formation, upper Douglas Creek Member	Tgdu	Middle Eocene	Plants (leaves and wood); invertebrates (mollusks and arthropods); vertebrates (uncommon but include fish, reptiles, mammals)	Class 3

*Map abbreviations from Cashion 1973.

Daitch et al. conducted a field survey for the Proposed Action in 2008. A summary of their findings included:

- A total of 7 previously recorded fossil localities occur within one mile of the area of potential effect (APE) of the Proposed Action. Of these seven, only one occurs within the APE. This locality was identified during 2005 and consists of turtle shell fragments and bone fragments, possibly mammal.
- Three new fossil localities and five new fossil occurrences were identified and recorded from both the Uinta Formation and Parachute Creek Member of the Green River Formation (Daitch et al 2008). Fossils from the localities included plant leaf impressions and mammal bone fragments. Fossil occurrences included fragmentary plant fossils, wood impressions, turtle shell fragment and indeterminate bone fragments.

3.5 SOILS

The development of soils is governed by many factors, including climatic conditions (the amount and timing of precipitation, temperature, and wind), the parent material that the soil is derived from, topographic position (slope, elevation, and aspect), geomorphic processes, and vegetation type and cover. For evaluation of potential environmental impacts to soils, the key attributes are erosion potential and ease of reclamation after soil disturbance.

Soil mapping conducted by the U.S. Department of Agriculture's National Resource Conservation Service (USDA-NRCS) typically provides information about each soil type within the mapped area that can be used to evaluate the erosion potential and reclamation potential of each soil unit. These data include the slope and hydrologic group for erosion potential, and soil pH, salinity, clay content, and sodium-adsorption ratio for reclamation potential.

The USDA-NRCS soil data for Uintah County identifies 34 soil map units within the Project Area (USDA-NRCS 2006 and 2007). Exhibit 2 in Appendix F provides a map of the soils involved in the Project Area.

Of the 34 identified soil map units, 11 are characterized as having their maximum slopes (40 percent slopes or greater) within the range classified as being highly susceptible to erosion. These soils primarily include rock outcrop formations that are resistant to erosion and/or contain slopes with soils that are defined as having low to moderate water erosion potential ($K_w < 0.20$). Soils map units with a maximum slope greater than 40 percent are 12, 36, 39, 85, 151, 198, 233, 234, 259, 263, and 264.

Of the soil map units identified within the Project Area, nine have a water erosion potential (K_w) value within the range defined as having high water erosion potential (or $K_w \geq 0.32$). Soil map units with a maximum K_w greater than 0.32 are: 21, 29, 31, 78, 138, 257, 263, 266, and 270.

Most soil map units within the Project Area with moderate to high water erosion potential ($K_w \geq 0.20$), have maximum slopes ranging from 2 to 25 percent (low to moderate susceptibility to erosion). Soil map units that are most susceptible to erosion based on both slope and water erosion potential values are soil map units 29, 31, 42, and 201, involving approximately 130 acres, or 16 percent of the Project Area.

Soil map units 29 and 31 are the most susceptible to erosion of the 30 soil map units identified within the project corridor; as both have components with K_w ranging from 0.15 to 0.37 (moderate to high erosion potential) and slopes ranging from 2 to 25 percent (low to moderate susceptibility to erosion). However, soil map units 29 and 31 are characterized as “well drained,” indicating that only a precipitation or run-off event that is large enough to exceed the relatively high drainage capacity of the soil is likely to cause substantial erosion. Soil map units 42 and 201 have components with K_w ranging from 0.05 to 0.24 (low to moderate erosion potential) and slopes ranging from 2 to 25 percent (low to moderate susceptibility to erosion). Components of soil map units 42 and 201 are also characterized as “well drained” or “somewhat excessively drained.”

Approximately 62 percent of the soils involved in the Project Area exhibit channery or parachannery soil textures. These textures are the major contributor to the very fine fugitive dust or “flour dust” conditions that occur along the Seep Ridge Road during dry periods.

3.6 WATER QUALITY (SURFACE/GROUND)

3.6.1 HYDROLOGIC SETTING

Streams can be classified as ephemeral, intermittent, or perennial. Ephemeral streams are those streams that flow only in direct response to a rainfall or runoff event and often have periods of no flow. The amount and timing of flow in ephemeral streams is dependent on the quantity and timing of precipitation, the watershed size, evaporation and transpiration rates, and the permeability of the surface materials. Intermittent streams receive some groundwater inflows in addition to direct surface runoff and contain flow at least part of the year in some portion of the stream. Perennial streams are streams and rivers that flow all year.

The Uinta Basin is drained by two perennial rivers: the Green River and the White River. The Green River originates in Wyoming along the Continental Divide and joins the Colorado River south of the Project Area. The White River originates in the mountains of Colorado, and drains the eastern portion of the Uinta Basin. These rivers receive runoff from several perennial streams and numerous ephemeral

washes and intermittent streams. The larger streams near the Project Area include Hill Creek, Willow Creek, and Bitter Creek.

Groundwater resources would not be directly affected by the Proposed or No Action Alternatives since no subsurface activities are proposed consequently will not be analyzed in this EA.

3.6.2 SURFACE WATER

Exhibit 3, in Appendix F, shows the surface water features in the Project Area. There are no perennial streams within the Project Area. Cottonwood Wash and Sand Wash and their ephemeral tributaries drain the northern and eastern portions of the Project Area. Major ephemeral drainages for the southern portion of the Project Area include Indian Ridge Canyon, Seep Canyon, PR Canyon, and Black Horse Canyon, which drain into Sweet Water Canyon and then Bitter Creek. Cottonwood Wash, Sand Wash, and Bitter Creek ultimately drain into the White River, approximately 12 miles to the north and northeast of the Project Area. Sunday School Canyon and Main Canyon are the major drainages on the west side of the Project Area. These drainages empty into the perennial Willow Creek, which ultimately drains into the Green River, approximately 7 miles to the northwest of the Project Area. With the exceptions of Bitter Creek and Willow Creek, all other streams affected by the Proposed Action are ephemeral and typically flow in response to rainfall events.

3.6.2.1 Stream Classification

The Utah Water Quality Board classifies Utah surface water resources according to quality and degree of protection (UDEQ 2000). All streams and water bodies in Utah are assigned to one of five classes. Within the Project Area, all streams are classified as Class 2B, 3A, and 4. Class 2B streams are protected for secondary contact recreation such as boating, wading, or similar uses. Class 3A streams are protected for cold water species of game fish and other cold water aquatic life. Class 4 streams are protected for agricultural uses including irrigation of crops and stock watering.

3.6.2.2 Surface Water Flow

Two United States Geologic Service (USGS) gauging stations are located down-gradient from the Project Area on the White River. Table 3.6-1 presents summary flow data for the stations.

Table 3.6-1 Stream Flow Data for USGS Gauging Stations

USGS Gauging Station Name and Number	Range of Monthly Mean Discharge (cfs)	Peak Daily Discharge (cfs)	Mean Annual Discharge (cfs)	Period of Record
Sand Wash near Ouray, Utah 09306870	0.00 (January, May, June, November, and December) to 0.19 (February)	20 (February 20, 1980)	0.034	October 1974 – September 1981
Sand Wash at Mouth near Ouray, Utah 09306872	0.00 (November and December) to 2.7 (March)	86 (March 29, 1979)	0.417	October 1976 – September 1981

Source: USGS 2008.

Flow was measured in Sand Wash from October 1974 to September 1981. Flow is only present following cloudburst storms and during the snowmelt period. For the upstream station on Sand Wash, zero flow was recorded approximately 97 percent of the time during the brief period of record. The peak daily flow

of 20 cubic feet per second (cfs) occurred on February 20, 1980. Flow was only present during the months of February – April (from snowmelt) and July – September (from storms) at this station. At the mouth of Sand Wash, zero flow was recorded approximately 95 percent of the time. The peak daily flow over the period of record was 86 cfs on March 29, 1979. Annual sediment loading of the White River is approximately 1,680,000 tons/year (Lentsch, et al. 2000).

Two USGS gauging stations are also located on the Green River. These data are useful for characterizing the total annual runoff from the Uinta Basin. Mean monthly stream flows at USGS station 09307000 on the Green River at Ouray range from 1,925 cfs to 17,000 cfs, and peak in June. Mean monthly stream flows further downstream at the town of Green River (USGS station 09315000) range from a low of 2,301 cfs to a high of 18,620 cfs. Annual sediment loading of the Green River is about 9,684,000 tons (Lentsch, et al. 2000).

3.6.2.3 Surface Water Quality

The EPA has established primary and secondary drinking water standards (EPA 2003) for approximately 90 water contaminants as required by the Safe Drinking Water Act, as amended in 1996, and Clean Water Act (CWA) of 1987, as amended. These regulations specify maximum contaminant levels (MCLs) and secondary standards for specific contaminants. The MCLs are health-based. Although these MCLs legally apply only to public drinking water supplies, they are also useful as general indicators of water quality. The secondary standards are for constituents that cause cosmetic effects (such as skin or tooth discoloration) or aesthetic affects (such as taste, odor, or color) in drinking water. The CWA delegated the administration of these standards to cooperating States and Tribes, so long as the State and Tribal standards were at least as stringent as the federal standards. In the Project Area, the EPA has primacy.

Water quality sampling has been conducted at USGS stations 09306870 and 09306872 on Sand Wash. Three samples were collected at the upper station and one sample was collected at the lower station. Water in Sand Wash, when present, can be described as sodium bicarbonate-sulfate-chloride type waters with low hardness, alkaline pH, and moderate SAR. Aluminum and iron exceeded standards for one sample each.

There are no streams listed on the State’s Section 303(d) list within the Project Area.

3.7 FLOODPLAINS

The VFO Approved RMP directs that no surface disturbance or occupancy will be allowed within active floodplains, or 100 meters (328 feet) of riparian areas. Exceptions to this management prescription may be authorized if there are no practical alternatives, impacts could be fully mitigated, or the action is designed to enhance the riparian resources (BLM 2008a).

Identified 100-year floodplain found within the Project Area occurs along the West Fork of Cottonwood Wash, and have been designated by FEMA as a Zone A (refer to Exhibit 3 in Appendix F). This designation means that these areas are subject to inundation by the 1-percent-annual-chance flood event generally determined using approximation methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are provided.

In 2008, Morrison-Maierle, Inc. (MMI) examined the Project Area for the presence and extent of wetlands, riparian areas, and waterways. The investigation resulted in the identification of 16 non-wetland waterways (ephemeral drainages) crossed by the existing Seep Ridge Road using culverts. No areas exhibiting hydric soils, hydrophytic vegetation, and hydrology indicators were identified throughout the

Project Area; and, no wetlands were delineated. Two of the 16 ephemeral drainages are of a size to be named, i.e., the West and East Forks of Cottonwood Wash. The remaining 14 ephemeral drainages are unnamed.

Ten of the 16 ephemeral drainage crossings are associated with the West and East Forks of Cottonwood Wash and tributaries to these features are located between mile markers 40 and 45. Three of the remaining ephemeral drainages are located north of the West Fork and East Fork Cottonwood Washes (between mile markers 52 and 55) and three drainages are located south of these washes (at approximately mile markers 27 and 34). The ephemeral drainages identified within the Project Area were preliminarily observed to be jurisdictional (federally-regulated by the U.S. Army Corps of Engineers) as the aerial photos and topographic maps indicate that these landscape features have the potential to convey water from storm events down-gradient to the White River.

With the exception of the West and East Forks of Cottonwood Wash, the waterways associated with the Project Area exhibit some scouring and intermittent bed and bank with upland vegetation growing in the drainage bottoms (predominantly greasewood (*Sarcobatus vermiculatus*), big sagebrush (*Artemisia tridentata* var *tridentata*) and rubber rabbitbrush (*Chrysothamnus nauseosus* spp). The drainages associated with the West and East Forks of Cottonwood Wash exhibit a defined bed and bank with a predominantly unvegetated channel.

3.8 VEGETATION, INCLUDING INVASIVE PLANT AND NOXIOUS WEEDS, SPECIAL STATUS PLANT SPECIES AND FORESTRY/WOODLANDS

3.8.1 GENERAL VEGETATION

Vegetation in the Project Area is dependent on soils, topography, aspect, elevation and precipitation. The predominant vegetation communities in the Project Area are briefly described below. Table 3.8-1 quantifies the total acres of the Project Area by vegetation community. Exhibit 4, in Appendix F, depicts the broad vegetation communities involved with the Project Area.

Table 3.8-1 Vegetation Communities in the Seep Ridge Road Project Area

Vegetation Community	Estimated Acres within Project Area	Percent of Project Area
Mixed Desert Shrub	170.80	21
Wyoming Sagebrush	292.70	36
Pinyon-Juniper-Sage/Woodland	284.60 ¹	35
Montane Brush/Woodland	65.01	8
Estimated Total	813.11	100

¹ Includes 4 acres outside of the proposed ROW for the proposed watering pond (reservoir) and relocation of the Monument Ridge Pasture Corral and up to 46.8 acres of existing road that would be closed and reclaimed outside of the proposed ROW

A general discussion of the vegetation communities follows. Vegetation in the Project Area is dependent on soils, topography, aspect, elevation and precipitation.

Beginning at the northern end of the Project Area, the area of lowest elevation, is the mixed desert shrub community. This community is associated with shallow clay-loam and shaley to deep sandy soils. This community is widely variable in its composition and dominance, but may be characterized by shadscale (*Atriplex confertifolia*), Gardner saltbush (*A. gardneri*), green rabbitbrush (*Chrysothamnus viscidiflorus*) and greasewood (*Sarcobatus vermiculatus*). This community provides open winter grazing areas for

livestock, pronghorn antelope and wintering big game. Reclamation potential is poor due to poor soil structure, little topsoil and low precipitation.

The sagebrush community (*Artemisia tridentata* var *wyomingensis*) is associated with moderately deep sandy-loam to gravelly-loam soils associated with the Green River and Uinta formations. The majority of this community is associated with the middle portion of the Project Area. Other sagebrush sites include the moderately-deep alluvial soils in higher elevation drainages in the pinyon-juniper-sage/woodland community. The majority of this community can be characterized as mature to old age stands of sagebrush with varying compositions of understory vegetation. Dominate understory vegetation include a variety of perennial grasses such as Sandberg's bluegrass (*Poa secunda*), needle-and-thread grass (*Stipa comata*), and Indian ricegrass (*Achnatherum hymenoides*). Numerous shrub and forb species include fleabanes (*Erigeron* spp.), milkvetch (*Astragalus* spp.), rabbitbrush (*Chrysothamnus* spp.), winterfat (*Krascheninnikovia lanata*), and Mormon tea (*Ephedra* spp.). This community provides habitat for big game and numerous upland and avian wildlife species. Potential for successful reclamation following disturbance is moderate, depending on topsoil depth and texture and total annual precipitation.

The pinyon-juniper-sage/woodland community is associated with the shallow shaley and stony hillsides and ridges located throughout the middle and southern portion of the Project Area. Utah juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus edulis*) occur on almost all slopes and aspects within the community. At lower elevations, pinyon decreases and Utah juniper dominates the overstory. Associated understory species include black sage (*Artemisia nova*), desert buckwheat species (*Eriogonium* spp.), Mormon tea (*Ephedra* spp.), and bull grass (*Elymus salina*). This community provides important habitat, including thermal cover, for numerous upland and avian wildlife species and big game. Potential for successful reclamation in this community is low to moderate, depending on depth of topsoil and total annual precipitation.

The montane brush/woodlands community occurs at the highest elevations at the southern end of the Project Area, occurring on all aspects on soils ranging from shallow sandy and stony loams to moderately deep mountain loams. In addition to pinyon woodlands, mountain mahogany (*Cercocarpus montanus*), snowberry (*Symphoricarpos oreophilus*), Utah juniper (*Juniperus osteosperma*) dominate the overstory. Oregon grape (*Mahonia repens*), rosy everlasting (*Antennaria rosea*), and bluebunch wheatgrass (*Pseudoroegneria spicata*) dominate the understory. Potential for successful reclamation in this community is low to moderate, depending on amount and depth of topsoil.

3.8.2 INVASIVE PLANTS AND NOXIOUS WEEDS

The most common invasive species in the Project Area are Russian thistle (*Salsola iberica*), halogeton (*Halogeton glomeratus*), and cheatgrass (*Bromus tectorum*). African mustard (*Malcolmia africana*), a newly emerging weed species, may also be present in the Project Area. Russian olive (*Elaeagnus angustifolia*) is a Uintah County listed noxious weeds that occur in the Project Area along drainages, ponds, and sites where water collects along roads.

The State of Utah has designated 27 noxious weed species that must be controlled under Utah Noxious Weed Act R68-9, Utah Code Annotated Title 4 Chapter 17. The definition for a “noxious weed” in Utah is any plant that has been determined to be especially injurious to public health, crops, livestock, land or other property (Utah Code Annotated Title 4 Chapter 17).

In addition to the 27 state-designated noxious weed species, Uintah County has designated an additional noxious weed species that must be controlled under the Uintah County Weed Control Policy (Billings 2008). A “county noxious weed” is defined as a plant that is not on the State noxious weed list, but is

especially troublesome in a particular county and is declared by the county legislative body to be a noxious weed within its county (Uintah County Weed Department 2008).

A field investigation was conducted in July 2008 to inventory, collect and evaluate baseline biological data within and adjacent to the Project Area (MMI 2008). Two state-listed noxious weed were identified within proposed Project Area. Field bindweed (*Convolvulus arvensis*), was identified within the existing ROW in a few scattered patches on the road's shoulders concentrated within previously disturbed areas. Black henbane (*Hyoscyamus niger*) was identified in a few small isolated patches associated with previously disturbed areas.

The Uintah County Weed Department has identified 14 invasive weed species within the County. Invasive species are not required by law to be controlled but are a high priority for control. The most common weed locations include disturbed areas such as well pads, roadsides, pipeline ROWs, adjacent washes, and areas where grazing has removed native species. Roads facilitate biological invasion, where disturbed roadside habitats are invaded by exotic invasive plant and animal species, and weeds are dispersed by wind, water, vehicles, and other human activities. Halogeton was identified extensively along the entire roadside, as well as in previously disturbed areas adjacent to the roadside.

3.8.3 SPECIAL STATUS PLANT SPECIES

Appendix D lists the threatened, endangered, candidate, and BLM-sensitive plant species that potentially occur within the BLM public lands, along with each species' location/habitat, and whether each species has been eliminated from detailed analysis in this document due to known occurrence within the Project Area.

Appendix D lists three plant species that would be potentially involved with the project. They are clay reed-mustard (*Schoenocrambe argillacea*), Graham's beardtongue (*Penstemon grahamii*), and Uinta Basin hookless cactus (*Sclerocactus wetlandicus*).

3.8.3.1 Threatened, Endangered, or Candidate Plant Species

Clay reed-mustard

Clay reed-mustard is a perennial herb and a member of the mustard family. It is federally listed as threatened and is endemic to the lower Uinta and upper Green River Shale formations in the Bookcliffs of Uintah County, Utah. It consists of a sparsely leafed stem arising from a stout, woody base. From mid-April through mid-May, clay reed-mustard produces 3.5 to 4.5-millimeter wide lilac to white flowers that have prominent purple veins.

Clay reed-mustard typically occurs on steep hillsides and canyons on clay soils derived from the contact zone between the Uinta and Green River geologic formations. The typical plant community in clay reed-mustard habitat is the salt desert shrub community.

Known occupied habitat for clay reed-mustard, is known to occur at two locations near the ROW: one population is located approximately 1,325 feet outside of the ROW, and the other population is located about 3,400 feet outside of the ROW. Within NE/SE and SE/SE of Section 18, Township 11 South, Range 21 East the proposed right-of-way comes within 200-feet of potential habitat (steep canyon faces that include the contact zone of the Uinta and Green River formations) for the species.

Uinta Basin hookless cactus

Uinta Basin hookless cactus is a perennial herb and a member of the cactus family. It is federally listed as threatened and is endemic to the Uinta Basin. It consists of a perennial succulent shoot, solitary or rarely branching, globose, ovoid or cylindrical. Individuals are usually 3 to 9 centimeters in diameter and 4 to 12 centimeters. Each spine cluster, areoles, usually consists of one large (15 to 29 millimeters) central spine, three to four lateral central spines and six to ten radial spines. From late April to May, Uinta Basin hookless cactus produces 2.5 to 5-centimeter high pink to violet flowers.

The ecological amplitude of Uinta Basin hookless cactus is wide, being found from clay badlands up to the pinyon-juniper habitat. The preferred habitat occurs on river benches, valley slopes, and rolling hills consisting of xeric, fine textured, clay soils, derived from the Duchesne River, Green River, Mancos, and Uinta formations, overlain with a pavement of large, smooth, rounded cobble. The typical plant community in Uinta Basin hookless cactus habitat is the salt desert shrub community.

The northern 1.09 miles of the proposed project is located within an area that the US Fish and Wildlife Service (USFWS) has identified as being potential habitat Uinta Basin hookless cactus. A site survey of the area was performed on 07/06/2010 by Aaron Roe (BLM, Lands and Minerals Botanist) and on 07/07/2010 by Aaron Roe, Joshua Merkel (Chicago Botanical Garden's Land Management Intern), and Kaleb Remski (Chicago Botanical Garden's Land Management Intern). The survey consisted of meandering surveys through the most suitable habitat for Uinta Basin hookless cactus to a distance of 375-feet from the center of the right-of-way. Suitable habitat for Uinta Basin hookless cactus was identified, however no individuals were observed on site.

3.8.3.2 Bureau-sensitive plant species

Graham's beardtongue

Known occupied and potential habitat for Graham beardtongue, a BLM sensitive species, is located within and adjacent to the existing Seep Ridge Road. Habitat for Graham beardtongue is limited to oil shale outcrops on knolls and talus in semi-barren mixed desert shrub and pinyon-juniper sage/pinyon-juniper woodland vegetative habitats from 4,600 to 6,700 feet in elevation.

In 2010, Buys and Associates conducted a comprehensive survey of all Graham's beardtongue habitat within 375 feet of the proposed Seep Ridge Road centerline. The survey corridor included the total proposed 150-foot ROW plus a 300-foot buffer. Numerous individual Graham's beardtongue were documented during the survey. Due to the close proximity of observed individual plants, as well as the accuracy of GPS devices used during the surveys, individual GPS points were not taken for each plant observed. For documentation of plant occurrences, each GPS point was taken to represent approximately one to ten individual plants (average being 5 plants) and the GPS point was taken at the plant location closest to the proposed ROW. Based on these parameters, 14 points, representing approximately 70 plants, occurred within the proposed 150-foot ROW. In addition, 248 points, representing approximately 1,240 plants, occurred within 300 feet of the proposed ROW (B&A 2010).

3.8.4 WOODLAND/FORESTRY

Woodland resources comprise lands producing forest tree species that may be used as non-saw timber products and sold in units other than board feet. Woodland resources begin at mid-elevations of the Uinta Basin, where sagebrush communities give way to pinyon pine and juniper (between 5,000 and 8,000 feet in elevation). Timber resources including ponderosa pine (*Pinus ponderosa*), quaking aspen (*Populus tremuloides*), Douglas fir (*Pseudotsuga menziesii*) and minor quantities of spruce (*Picea spp.*), white fir

(*Abies concolor*), limber pine (*Pinus flexilis*) and subalpine fir (*Abies bifolia*) occur at the southern most extent of the Project Area. Commercially valuable woodland resources and saw timber may be found within the mountain browse and pinyon-juniper woodlands associated with the Project Area. These two communities involve an estimated 349 acres (or about 43 percent) of the Project Area. BLM has no current data to estimate the quantity of woodland/forestry products that could exist on these lands.

The BLM has conducted extensive vegetation conversion projects in the Book Cliffs area, including areas adjacent to or near the Seep Ridge Road. These projects have converted pinyon-juniper woodlands to open grass and shrub parks to achieve management goals and objectives for wildlife, livestock, soils, and as fire fuel reduction measures. The BLM conducts firewood sales and competitive timber sales in the Book Cliffs area to further its goals and objectives for woodland/forestry management.

3.9 WILDLIFE AND FISHERIES, INCLUDING SPECIAL STATUS ANIMAL SPECIES

3.9.1 GENERAL WILDLIFE

The Project Area supports a mosaic of vegetation and physical characteristics that provide habitat for a variety of general wildlife species. Species that occupy the Project Area are typically generalist species that are accustomed to a moderate to high amounts of human activity (including vehicular traffic) due to the oil and gas industry in the project's vicinity.

Small mammal species that are expected to occur throughout the Project Area include, but are not limited to, the cottontail rabbit (*Sylvilagus spp.*), black-tailed jackrabbit (*Lepus californicus*), white-tailed prairie dog (*Cynomys leucurus*), coyote (*Canis latrans*), badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), western spotted skunk (*Spilogale gracilis*), and other rodent species. Reptiles and amphibians potentially found in the region include the garter snake (*Thamnophis elegans vagrans*), great basin gopher snake (*Pituophis catenifer deserticola*), great basin spadefoot toad (*Scaphiopus intermontana*), western whiptail (*Cnemidophorus tigris*), sagebrush lizard (*Sceloporus graciosus*), and short-horned lizard (*Phymosoma douglassii*) (BLM 2008a).

Although all of these species are important members of wildland ecosystems and communities, most are common and have widespread distributions within the Uinta Basin. Consequently, the relationships of most of these species to the proposed development are not discussed in the same depth as those species that are threatened, endangered, candidate, sensitive, of special economic interest, or are otherwise of high interest or unique value.

Black bears (*Ursus americanus*) are typically associated with forested or brushy mountain environments and wooded riparian corridors (BLM 2008a). They are generally omnivorous and obtain most of their meat from carrion. Cougar (*Felis concolor*) occupy rough, broken terrain of foothills and canyon, often in close association with mule deer (BLM 2008a).

3.9.2 BIG GAME

Four big game species are potentially found within the Project Area: pronghorn antelope (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), and American bison (*Bison bison*). American bison occur on historical Uintah and Ouray Indian Reservation lands and were recently introduced by UDWR to the Book Cliffs area.

The Seep Ridge Road is located within the Book Cliffs Wildlife Management Unit (WMU). The Book Cliffs WMU encompasses the southern portion of Uintah County and extends into the northern portion of Grand County. The northern boundary of the Book Cliffs WMU is the White River from the Utah-Colorado border to its confluence with the Green River (approximately 2 miles south of Ouray, Utah). The eastern Book Cliffs WMU boundary is the Green River from the White River terminus south to the town of Green River. The southern Book Cliffs WMU boundary extends east from the town of Green River along I-70 to the Utah-Colorado border, which serves as the eastern boundary of the WMU. The Bitter Creek Subunit of the Book Cliffs WMU constitutes the northern portion of the WMU, extending (roughly) from the confluence of Coal Creek with the Green River east to the Uintah County-Grand County border at the state line.

The Project Area includes various types of seasonal ranges (e.g., year-long, fawning, winter) as identified by the UDWR. UDWR ranges are ranked according to their relative biological value and are defined in detail below. Under the VFO Approved RMP, the BLM has committed to managing big game ranges as defined by the UDWR (BLM 2008a).

- *Crucial:* Habitat on which the local population of a wildlife species depends for survival because there are no alternative ranges or habitats available. Crucial value habitat is essential to the life history requirements of a wildlife species. Degradation or unavailability of crucial value habitat will lead to significant declines in carrying capacity and/or numbers of the wildlife species in question.
- *Substantial:* Habitat that is used by a wildlife species but is not crucial for population survival. Degradation or unavailability of substantial value habitat will not lead to significant declines in carrying capacity and/or numbers of the wildlife species in question.

3.9.2.1 Pronghorn

Pronghorn are common in Utah and known to occupy desert, grassland, and sagebrush habitats throughout the state. The primary food source for pronghorn is shrubs (i.e., sagebrush) but they also consume grasses and forbs. Pronghorn breed in the fall with the females typically giving birth to two kids in the spring. Pronghorn are diurnal and are often found in small groups (UDWR-UNHP 2007). Home ranges for pronghorn can vary between 400 and 5,600 acres, according to factors including season, habitat quality, population characteristics, and local livestock occurrence. Typically daily movements do not exceed 6 miles. Some pronghorn make seasonal migrations between summer and winter habitats, but these migrations are often triggered by availability of succulent plants and not local weather conditions (Fitzgerald et al. 1994).

Approximately 122,968 total acres of pronghorn habitat occur within the greater Book Cliffs area (BLM 2008a). A portion of the Project Area (from approximately mile marker 30.5 to 56.8) provides crucial year-long habitat for pronghorn. UDWR pronghorn population objectives for the Book Cliffs WMU are 450 individuals, with a current population estimate of 172 (UDWR 2008a). Pronghorn utilize the northern portion of the Project Area in sagebrush-dominated plant communities. BLM-designated crucial fawning habitat for pronghorn does not exist within the Project Area (BLM 2008a).

3.9.2.2 Mule Deer

Mule deer are common throughout Utah in a variety of habitat types ranging from open deserts, montane forests, and urban areas. Mule deer utilize high elevation montane habitats in the summer and migrate to

lower elevations in the winter. Mule deer primarily browse on shrubs, woody material, and grasses. Mule deer breed in the fall and typically produce one or two fawns in the spring (UDWR-UNHP 2007).

There are approximately 1,203,853 total acres of mule deer habitat within the greater Book Cliffs area; of which approximately 355,992 total acres are identified as crucial winter habitat (BLM 2008a). A total of approximately 403 acres of mule deer habitat are included in the Project Area. Of this amount, about 99 percent (or 400 acres) are managed as winter habitat, either as winter substantial (201 acres) or as winter crucial (199 acres). Only about 3 acres of the Project Area would involve crucial summer/fawning habitat (refer to Exhibit 5 in Appendix F).

UDWR mule deer population objectives for the Book Cliffs WMU are 10,000, with a current population estimate of 7,355 (UDWR 2008a). Mule deer are not evenly distributed within the crucial winter range designated by the UDWR. The winter range located between Seep Ridge Road and Atchee Ridge Road, south of the Kings Well Road supports a large percentage of the wintering deer within the Book Cliffs WMU and Bitter Creek Wildlife Management Subunit. The primary drainages within this deer crucial winter range provide high-quality forage and cover to support the greatest number of deer (Karpowitz 1984). Deer winter ranges that typically exhibit higher use often include pinyon-juniper woodlands intersected by long drainages and open areas containing fourwing saltbush, sagebrush, winterfat), and native grasses. The lower limit of the deer winter range is described as the lower end of the pinyon-juniper belt (Karpowitz 1984).

Approximately 58,361 total acres of the greater Book Cliffs have been identified as providing a key migration route for mule deer (BLM 2008a). The Seep Ridge Road bisects this major migratory corridor from the Buck Canyon area (located at approximate mile marker 35.5) to the southern project boundary. Numbers of mule deer seasonally travelling in this area, and crossing the existing Seep Ridge Road, are currently unknown. Mule deer migrate northeast from the Book Cliff divide area in the summer at the south end of the existing Seep Ridge Road to lower elevations in the winter (State of Utah 2008).

3.9.2.3 Elk

Elk are common throughout Utah in most mountainous regions. Seasonal elk habitat in Utah is identified as mountain meadows and forests in the summer and foothills and valley grasslands in the winter. Elk graze primarily on grasses but also consume forbs and woody plants. During the spring the females give birth to one or two calves (UDWR-UNHP 2007).

There are approximately 1,006,347 total acres of elk habitat in the greater Book Cliffs area. Of which approximately 418,140 acres provide crucial winter range (BLM 2008a). A total of approximately 397 acres of elk habitat are included in the Project Area. Of this amount, about 90 percent (or 356 acres) are managed as winter habitat, either as winter substantial (243 acres) or as winter crucial (113 acres). Approximately 41 acres of the Project Area provides crucial summer/calving habitat (refer to Exhibit 6 in Appendix F).

UDWR elk population objectives for the Book Cliffs WMU are 7,500, with a current population estimate of 4,776 (UDWR 2008a). The VFO Approved RMP does not identify an elk migration corridor in the Project Area; however, crucial winter range exists towards the southern end of the Project Area.

3.9.2.4 American Bison

An American bison herd exists within the Uintah and Ouray Indian Reservation that is located adjacent to the northern portion of the Project Area (UDWR 2009a). In addition, in 2008 UDWR released 45 bison into the Book Cliffs WMU, with a population objective within the WMU of 450 (UDWR 2009a). The

UDWR expects to release additional bison to increase the size of the herd in accordance with their Herd Management Plan. Bison AUMs are not currently being accounted for within the Project Area.

3.9.3 RAPTORS

Some of the more common and visible birds within the Project Area include raptors, or birds of prey. The Project Area provides diverse breeding and foraging habitat for raptors: mixed desert shrub communities, rocky outcrops, and pinyon-juniper woodlands. Table 3.9-1 identifies raptor species with the potential to occur in the Project Area, and a description of typical nesting habitats.

Table 3.9-1 Raptor Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Nesting Habitat
American Kestrel	<i>Falco sparverius</i>	Tree cavities, cliff crevices
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Large trees near rivers, lakes, marshes, or other wetland areas
Burrowing Owl	<i>Athene cuniculara</i>	Prairie dog colonies
Cooper's Hawk	<i>Accipiter cooperii</i>	Woodland areas and riparian zones
Ferruginous Hawk	<i>Buteo regalis</i>	Ground, pinyon-juniper woodlands, balanced pinnacles
Golden Eagle	<i>Aquila chrysaetos</i>	Cliff ledges and rock outcrops
Great-horned Owl	<i>Bubo virginianus</i>	Cliff ledges or nests of other species
Long-eared Owl	<i>Asio otus</i>	Coniferous and deciduous forests, and shrublands
Northern Harrier	<i>Circus cyaneus</i>	Ground nester within thick vegetation
Prairie Falcon	<i>Falco mexicanus</i>	Cliff ledges
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Cliff ledges, rock outcrops, aspen, pinyon-juniper woodlands
Short-eared Owl	<i>Asio flammeus</i>	Ground nester
Swainson's Hawk	<i>Buteo swainsoni</i>	Solitary trees or bushes
Turkey Vulture	<i>Cathartes aura</i>	Rock outcrops, caves, and tree cavities
Western Screech Owl	<i>Megascops kennicottii</i>	Almost exclusively in tree cavities

All raptor species and their nests are protected from take or disturbance under the Migratory Bird Treaty Act (MBTA) (16 USC, 703 et seq.), as amended. However, bald eagles, golden eagles, ferruginous hawks, burrowing owls, and short-eared owls are also considered to be special status wildlife species. Through a review of BLM data and correspondence with USFWS and UDWR, it was concluded that golden eagle and burrowing owl individuals or their potential nesting habitat may occur within the vicinity of the Project Area and these species are discussed in more detail in the following sections. In addition, BLM wildlife habitat surveys in the Book Cliffs area have identified and documented the locations of raptor nests (BLM 2002). Two red-tailed hawk nest locations were documented near mile markers 41.5 and 42.25 that occur within the Project Area and two additional nests were documented near mile markers 36.5 and 43.5 that are less than 0.5 mile from the Project Area boundary. BLM surveys also identified a single golden eagle nest occurring within 0.5 mile of the Project Area near mile marker 40 (BLM 2002). Although bald eagles, ferruginous hawks, and short-eared owls are not likely to nest within the Project Area or immediate vicinity, suitable foraging habitat for these three species does exist. Due to the unlikely occurrence of nesting bald eagles, ferruginous hawks, and short-eared owls within the Project Area, further analysis regarding potential project-related impacts to these species, or their habitat, is not included in this document.

3.9.4 MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA), as amended, was implemented for the protection of migratory birds. Unless permitted by regulations, the MBTA makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition, Executive Order 13186 sets forth the responsibilities of federal agencies to further implement the provisions of the MBTA by integrating bird conservation principles and practices into agency activities and by ensuring that Federal actions evaluate the effects of actions and agency plans on migratory birds.

Numerous migratory bird species occupy the Project Area. This section addresses migratory birds that may inhabit the Project Area, including those species classified as Priority Species by Utah Partners in Flight (PIF). The purpose of the Utah PIF is to determine which Utah bird species and their habitats are most in need of conservation and to recommend conservation actions in accordance with strategies that are generated through the program (Parrish et al. 2002). PIF species are not subject to special protection by the state of Utah, though some PIF species are also designated as wildlife species of concern or listed under conservation agreements.

A number of bird species listed by the Utah PIF conservation program are known to occur, potentially occur, or suitable habitat for those species is located within the vicinity of the Project Area. Appendix D lists each of the PIF bird species, their habitat association, potential for occurrence within the Project Area and cumulative effect area, and whether the species has been eliminated from detailed analysis in this document. This section identifies all other migratory birds that may inhabit the Project Area, including those species classified as High-Priority birds by Utah Partners in Flight (Parish et al. 2002). High-Priority species are denoted by an asterisk (*).

3.9.4.1 Sagebrush Community

Migratory bird species commonly associated with mixed desert shrub/sagebrush habitat include: the greater sage-grouse* (*Centrocercus urophasianus*), grasshopper sparrow* (*Ammodramus savannarum*), black-chinned sparrow (*Spizella atrogularis*), black-throated sparrow (*Amphispiza bilineata*), Brewer's sparrow* (*Spizella breweri*), gray flycatcher* (*Empidonax wrightii*), green-tailed towhee* (*Pipilo chlorurus*), horned lark (*Eremophila alpestris*), lark bunting (*Calamospiza melanocorys*), lark sparrow (*Chondestes grammacus*), loggerhead shrike (*Lanius ludovicianus*), gray vireo* (*Vireo vicinior*), mountain bluebird* (*Sialia currucoides*), northern mockingbird (*Mimus polyglottos*), sage sparrow* (*Amphispiza belli*), sage thrasher* (*Oreoscoptes montanus*), Say's phoebe (*Sayornis saya*), vesper sparrow (*Pooecetes gramineus*), and western meadowlark (*Sturnella neglecta*) (Parrish et al. 2002).

3.9.4.2 Pinyon-Juniper Woodlands

Migratory bird species commonly associated with juniper and pinyon-juniper habitats include: the ash-throated flycatcher (*Myiarchus cinerascens*), black-chinned hummingbird* (*Archilochus alexandri*), broad-tailed hummingbird* (*Selasphorus playcercus*), Lewis's woodpecker* (*Melanerpes lewis*), black-throated gray warbler (*Dendroica nigrescens*), blue-gray gnatcatcher (*Polioptila caerulea*), juniper titmouse* (*Parus inornatus*), common nighthawk (*Chordeiles minor*), gray vireo* (*Vireo vicinior*), Cassin's kingbird* (*Tyrannus vociferan*), Cassin's finch* (*Carpodacus cassinii*), pinyon jay* (*Gymnorhinus cyanocephalus*), common poorwill (*Phalaenoptilus nuttallii*), Clark's nuthatch (*Nucifraga columbiana*) gray flycatcher* (*Empidonax wrightii*), loggerhead shrike (*Lanius ludovicianus*), Scott's oriole (*Icterus parisorum*), Virginia's warbler* (*Vermivora virginiae*), and western bluebird (*Sialia mexicana*) (Parrish et al. 2002).

3.9.5 SPECIAL STATUS WILDLIFE AND FISH SPECIES

In accordance with Section 7(a) (2) of the Endangered Species Act (ESA), the BLM must ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or adversely modify designated critical habitat. The BLM has a commitment to ensure that actions requiring its authorization or approval are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, either under provisions of the ESA or other provisions of this policy (BLM 2008c).

An off-site literature review was completed to gather information concerning threatened and endangered (T&E) species, candidate species, and their habitat. The literature review consisted of an internet search to gather species information from applicable sources and publications. Internet web sites including the Utah Conservation Data Center (2008e) were consulted. Information was also solicited from the U.S. Fish and Wildlife Service (USFWS) and the Utah Division of Wildlife Resources (UDWR). The information was utilized to identify the species present within or in the vicinity of the Project Area, assess potential impacts to the identified species, and identify and evaluate potential concerns of federal, state, and local agencies. Appendix D provides a list of the threatened, endangered, candidate, and Utah special status animal species, including Partners-In-Flight (PIF) species of concern, that potentially occur within BLM public lands. Appendix D also describes each species' habitat associations, potential for occurrence within the Project Area and cumulative effects area, and whether each species has been eliminated from detailed analysis in this document due to known occurrence within the Project Area.

3.9.5.1 Special Status Mammal Species

White-tailed Prairie Dog

The white-tailed prairie dog (*Cynomys leucurus*) is a State of Utah wildlife species of concern due to declining populations within the state. White-tailed prairie-dogs inhabit mountain valleys, semidesert grasslands, agricultural areas, and open shrublands in western North America (Fitzgerald et al. 1994; Hall 1981). In northeastern Utah, the species occurs in areas around Flaming Gorge, Manila, Diamond Mountain, and the Uinta Basin.

Management decisions in the VFO Approved RMP specify that the BLM, in cooperation with UDWR, will maintain and enhance white-tailed prairie dog and other foraging habitat as they are an obligate species to several other state sensitive species such as ferruginous hawk, mountain plover, and burrowing owl, in that these species depend on them for food, shelter, and nesting habitat or habitat manipulation (BLM 2008a).

White-tailed prairie dogs are distributed in relatively large, sparsely populated complexes and live in loosely knit family groups or "clans" (Tileston and Lechleitner 1966). Clan boundaries are ill-defined with most activity concentrated around feeding sites. The white-tailed prairie dog breeds in the spring and hibernates underground through the winter. White-tailed prairie-dog population numbers are threatened by loss of habitat, poisoning, and plague (UDWR-UNHP 2007).

In coordination with UDWR and BLM, the Project Area would involve scattered white-tailed prairie dog colonies and individuals, but that any colonies in the area are relatively small as evidenced by the small size of observed areas of mounded soil. UDWR data also indicated that soils in the Project Area are not conducive for extensive prairie dog colonies (UDWR 2008b).

Bats

Four bat species identified as state-sensitive wildlife species of concern (WSC) may occur within the Project Area. These species include big free-tailed bat (*Nyctinomops macrotis*), fringed myotis (*Myotis thysanodes*), spotted bat (*Euderma maculatum*), and Townsend's big-eared bat (*Corynorhinus townsendii*). Foraging habitat for each of these species occurs within the Project Area (refer to Appendix D).

3.9.5.2 Special Status Bird Species

Greater Sage Grouse

The greater sage-grouse (*Centrocercus urophasianus*), classified as a Utah sensitive species is one of two sage-grouse species known to occur within the State of Utah and is known to inhabit sagebrush plains, foothills, and mountain valleys in the Project Area vicinity. Sage-grouse population numbers in Utah have decreased 50 percent from the historical abundance of the species due to intensive agriculture and livestock use that has substantially reduced historical sage-grouse habitat (UDWR-UNHP 2007). In addition, the oil and gas development industry has been identified as a substantial threat to sage-grouse populations due to habitat disturbance and vehicular traffic.

The availability of sagebrush habitat with an understory of grasses and forbs is essential for good sage-grouse habitat (UDWR-UNHP 2007). Nesting and brooding sites are typically located in or near the protective cover of sagebrush (UDWR 2002), which is also an important winter food source. Most hens typically nest within 2 miles of strutting grounds or breeding leks (Braun et al. 1977), and 74 to 80 percent of sage-grouse hens are found within 4 miles of a lek (Colorado Greater Sage Grouse Conservation Plan Steering Committee 2008). Based on this information and analysis of BLM GIS data, approximately 160 acres of sage-grouse nesting habitat would be involved in the Project Area (BLM 2008a). Early brood-rearing habitat generally occurs relatively close to nest sites, but movements of individual broods may be highly variable. Sage-grouse broods occupy a variety of habitats during the summer including sagebrush, relatively small burned areas within sagebrush, wet meadows, farmland, and other irrigated areas adjacent to sagebrush habitats (Connelly et al. 2004). Brooding habitat exists throughout the entire Project Area within sagebrush communities (i.e., Wyoming big sagebrush and black sagebrush). There are approximately 293 acres of sagebrush communities within the Project Area.

Breeding activities occur on active leks in March and April, and nesting typically occurs in April (UDWR-UNHP 2007). Typically active leks are not used for sage-grouse breeding later than early June (UDWR 2002). Active leks are defined as any lek that has been attended by male sage grouse during the strutting season. Presence can be documented by observation of birds using the site or by signs of strutting activities. Inactive leks are defined as leks where it is known that there was no strutting activity through the course of a strutting season. A single visit, or even several visits, without strutting grouse being seen is not adequate documentation to designate a lek as inactive. This designation requires either an absence of birds on the lek during multiple ground visits under ideal conditions throughout the strutting season or a ground check of the exact lek site late in the strutting season that fails to find any sign (droppings/feathers) of strutting activity.

Consultation with UDWR concluded that there are three active leks located several miles east of the existing Seep Ridge Road (UDWR 2008c). The hens and broods move across the Seep Ridge Road into the Willow Creek drainage approximately 1 to 2 miles north of the Willow Creek Overlook (at approximate mile markers 46 to 47). Analysis of BLM data from the VFO Approved RMP identified the Popewell Ridge Lek as occurring within the Project Area (approximate mile marker 48) and the Monument Ridge lek (near approximate mile marker 33) as occurring within 0.5 mile of the Project Area.

The Popewell Ridge lek, occurring at approximate mile marker 48 (located on BLM land), and the Monument Ridge lek (located on BLM land), located within 0.5 mile of the Project Area, are determined by UDWR to be no longer active (UDWR 2008c).

The above-mentioned lek data was erroneously included in the VFO Approved RMP and a subsequent No Surface Occupancy (NSO) was established for the leks. However, the Popewell Ridge and Monument Ridge leks have since these leks have been determined to be inactive the No Surface Occupancy (NSO) restriction designated in the 2008 RMP would not apply.

Burrowing Owl

Burrowing owls are known to occur throughout the State of Utah (UDWR 2008d). The burrowing owl is a migratory species that winters in the southwestern United States, northern Mexico, Florida, and the West Indies, typically residing in Utah in the spring and summer. The preferred habitat for burrowing owls is arid grassland and shrubland regions, where the owl frequently nests in tunnels abandoned by burrowing mammals such as the white tailed prairie dog (UDWR 2008e). Consultation with UDWR and review of BLM data concluded that burrowing owl habitat is present in the northern portion of the Project Area associated with scattered white-tailed prairie dog colonies. Although burrowing owl surveys have not been completed for the Project Area, suitable habitat does exist for the species (BLM 2008a).

3.9.5.3 Special Status Fish Species

There are no perennial drainages or aquatic features occur along the Project Area and therefore, habitat for fish and other aquatic species does not exist within the Project Area. However, water from the Project Area could be carried downstream via the existing ephemeral drainage networks and ultimately empty into the White River and subsequently into the Green River.

Endangered Colorado River Fish

Four federally-listed as endangered fish species are historically associated with the Upper Colorado River Basin: The humpback chub (*Gila cypha*), bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), and razorback sucker (*Xyrauchen texanus*). The USFWS has designated critical habitat for the Colorado pikeminnow and razorback sucker in portions of the White River and its respective 100-year floodplain (59 CFR 13374). The Project Area is located approximately 12 miles south from critical habitat for the Colorado pikeminnow in the White River. The Project Area is located approximately 7 miles east of the Green River and critical habitats have been designated for the razorback sucker, humpback chub, and bonytail on this river (59 CFR 13374; USFWS 2008).

Utah State Sensitive Fish

Three fish species endemic to the Colorado River Basin have been affected by flow alternations, habitat loss or alternation, and the introduction of non-native fish: roundtail chub (*Gila robusta*), bluehead sucker (*Catostomus discobolus*), and flannelmouth sucker (*Catostomus latipinnis*). These species are classified by the State of Utah as conservation agreement species due to their declining populations within the state. Habitat for these species occurs downstream of the Project Area in the White and Green Rivers.

3.10 LIVESTOCK GRAZING

Three cattle and one sheep grazing allotment bisect the Project Area (refer to Exhibit 7 in Appendix F). Table 3.10-1 provides basic grazing information for these allotments. Within the Olsen AMP Allotment,

the permittee is permitted to graze approximately 6,200 sheep. It is estimated that on average 643 cattle graze the Sunday School Canyon Allotment; 1,191 cattle graze the Sand Wash Allotment; and 1,498 cattle graze the Sweet Water Allotment. The estimated average carrying capacity for these allotments are: 11.0 acres/Animal Unit Month (AUM) for the Olsen AMP Allotment; 9.1 acres/AUM for the Sand Wash Allotment; 12.6 acres/AUM for the Sunday School Canyon Allotment; and, 12.5 acres/AUM for the Sweet Water Allotment. Based on this information, a total of approximately 52 AUM's would be involved in the Project Area.

Table 3.10-1 Grazing Allotments in the Project Area

Name	Type	Grazing Period	Total Allotment Acreage	Total Allotment AUMs ¹	Usable ² Acreage In Project Area	Usable ² AUMs In Project Area
Olsen AMP	Sheep ³	11/1 – 6/15	134,306	9,268	34	3
Sand Wash	Cattle	11/30 – 4/30	74,424	8,176	215	24.5
Sunday School Canyon	Cattle	11/1 – 4/30	51,597	4,106	163	12.9
Sweet Water	Cattle	5/1 – 10/31	104,572	8,391	143	11.2
TOTAL			364,899	29,941	555	51.6

¹ An animal unit month (AUM) is defined as “the amount of dry forage required by one animal unit (based on cattle) for one month based on a forage allowance of 26 pounds per day” (BLM 2008a).

² Usable acreage on slopes less than or equal to 40 percent slope, and on BLM lands only.

³ This is a sheep allotment, 40% slopes are not necessarily a barrier to grazing.

Currently the existing Seep Ridge Road ROW is not entirely fenced, allowing livestock to move freely across the road in search of forage and water. There is an existing fence along the west side of the Seep Ridge Road starting in section 30, T12S, R22E running south for approximately 0.84 miles, terminating at the cattleguard at the Buck Canyon turnoff. Another fence bisects the road at a cattleguard crossing where the boundary of the Sunday School Canyon and Sweetwater Allotments meet (Sec. 23, T14S, R22E). Other existing rangeland improvement structures are shown in Table 3.10-2 (BLM 2008a). Efficient use of these improvements and effective control of free-roaming livestock in the area of the water sites and the Seep Ridge Road are important concerns for the livestock operators on these allotments.

Table 3.10-2 Existing Rangeland Improvement Structures

Improvement Structure	Allotment	Location
Cattleguards on the Seep Ridge Road		
Mile Marker 56.8	Sand Wash	section 11, T10S, R20E
Mile Marker 36	Sand Wash	section 31, T12S, R22E
Mile Marker 24	Sunday School Canyon	section 23, T14S, R22E
Mile Marker 14	Sweet Water	section 27, T15S, R23E
Corrals		
Browns Corral	Olsen AMP	NW¼NW¼ sec. 30, T12S, R22E
McCoy Corral	Sunday School Canyon	SW¼NE¼ sec. 35, T13S, R22E
Seep Ridge Count Corral	Sunday School Canyon	NW¼NE¼ sec. 25, T14S, R22E
Monument Ridge Pasture Corral	Sweet Water	NW¼NW¼ sec. 26, T15S, R23E

Improvement Structure	Allotment	Location
Watering Ponds/Reservoirs		
	Sunday School Canyon	section 26, T13S, R22E
	Sunday School Canyon	section 35*, T13S, R22E
2 ponds at this site	Sunday School Canyon	NW¼NE¼ sec. 25, T14S, R22E
	Sweet Water	section 35, T15S, R23E
	Sand Wash	SW¼SW¼ sec. 12, T10S, R20E
	Sand Wash	SW¼SE¼ sec. 7, T11S, R21E
	Sweet Water	NE¼ sec. 23, T14S, R22E
	Sweet Water	SW¼NE¼ sec. 25, T14S, R22E
	Sweet Water	SE¼NW¼ sec. 32, T14S, R23E*
	Sweet Water	SE¼NE¼ sec. 8, T15S, R23E
Water well pipeline crossing the existing road	Sunday School Canyon	NW¼NW¼ sec 2, T14S, R22E

* Located on state land

3.11 RECREATION (INCLUDING TRAVEL MANAGEMENT)

The BLM's recreation management objective for the Book Cliffs area is to provide unlimited and unconfined recreation (BLM 2008a). The existing landscape in the Book Cliffs area could appropriately be characterized as remote, where currently human intrusions are substantially unnoticed. Accordingly, recreational use of the area consists primarily of dispersed hunting and limited off-highway vehicle (OHV) use where permitted. In addition to dispersed recreational use, the Second Nature Wilderness Program uses the area for some of their annual activities during the months of November to May.

Big game hunting extends from mid-August through mid-November (UDWR 2007a). The Book Cliffs area is an extremely popular hunting area and applications for the limited entry hunting permits for both elk and deer are highly sought. The Vernal Field Office currently has 18 upland guided hunting Special Recreation Permits that utilize this area during the hunting season. UDWR reports that a total of 8,413 applications were received for the 490 deer permits offered for the 2008 limited entry deer draw (UDWR 2009b). Black bear may also be hunted in the spring (mid-April through May (UDWR 2007b)). Cougars may be pursued in the spring, with the hunt season beginning in late winter and extending into early summer (mid-February to June) (UDWR 2008f). Spring hunting and pursuit seasons for black bear and cougar may extend from early April through May. In the spring, antler collection is a popular activity by recreationists on foot, horseback, and ATV. In 2006, UDWR estimated a total of approximately 975 hunters were afield in the Book Cliffs, with an estimated average stay of approximately 8 days (UDWR 2007a,b and 2008f). The largest number of hunters afield generally occurs on the opening weekend of the hunt.

Two camping areas occur along the Seep Ridge Road within the Project Area: Pine Springs and Hideout (refer to Exhibit 8 in Appendix F). Six other areas are located outside of the Project Area in Grand County. The closest camping area to the southern terminus of the Project Area is Lower Willow, about 0.5 miles east of the project's southern terminus. Additionally, there are an unknown number of dispersed camp sites that may occur within 0.5 mile of the Seep Ridge Road. It is a common practice for hunters and their families to return to their favorite camp sites year after year (BLM 1984). The BLM allows motorized camping vehicles to travel off designated routes on a single path up to 300 feet to access existing disturbed dispersed campsites (BLM 2008a).

Hunters and visitors to the Book Cliffs area have shown little interest for improved facilities such as sanitation or water systems. Other than placement of fire rings, the existing camping sites have seen little or no physical improvements (BLM 1984).

The Seep Ridge Road has been designated by the BLM as a Back Country Byway (BLM 2008a). A large network of unpaved roads and “two-track” routes also traverses the area, providing ample access for recreation users. The entire Project Area is designated as “limited” to OHV use to protect resource values including important wildlife habitat. Areas designated as “limited” restrict OHV use to designated trails and travel routes (BLM 2008a). BLM has installed a recreation/hunting information kiosk and a self-contained restroom on an area partially within the existing Seep Ridge Road ROW at the head of Buck Canyon (refer to Exhibit 8 in Appendix F). This site receives high visitation during hunting seasons and serves as a stopping point for heavy energy industry vehicles travelling on the Buck Canyon Road. Overall, the Project Area receives relatively modest recreational use relative to other prominent recreation areas in the region such as Dinosaur National Monument, and the Flaming Gorge National Recreation Area.

3.12 LANDS/ACCESS

From the city of Vernal, the Seep Ridge Road is accessed by traveling west approximately 7 miles on U.S. Highway 40, then turning south onto Highway 88 toward the town of Ouray. At Ouray, Highway 88 becomes the Seep Ridge Road (Uintah County Road 2810). The Seep Ridge Road continues south, crossing approximately 9 miles of the historic Uintah and Ouray Indian Reservation, and then continuing in a southerly direction approximately 50 miles to its terminus with the Book Cliff Divide Road in Grand County, Utah.

Other major access tying in to the Seep Ridge Road include: Glen Bench Road (UCR 3260); West Sand Wash Road (UCR 4110); Buck Canyon Road (UCR 5460); Kings Wells Road (UCR 4190); Indian Ridge Road (UCR 4510); Pine Spring Canyon Road (UCR 5590); and Monument Ridge Road (UCR 4610). These roads serve primarily as major arterial routes for energy development activities in the Book Cliffs area. Of these roads, only the Glen Bench Road, north of the White River is currently paved.

County roads, including the Seep Ridge Road, are monitored by the Uintah County Roads Department (UCRD). The most recent data the estimates the average daily traffic (ADT) count of 569 or about 24 vehicles an hour, for the Seep Ridge Road (south bound at the cattleguard) (UCRD 2005). The type of vehicles using the Seep Ridge road include: Passenger vehicles, SUVs, pickup and light trucks, livestock hauling trucks, energy industry vehicles including heavy trucks and trailers. The majority of the traffic is during daylight hours, seven days a week. Vehicle numbers increase during hunting seasons.

Currently 41 ROWs are authorized on BLM-administered public lands that are parallel to, adjacent to, cross or are within the Project Area. These easements are principally surface and/or buried energy pipelines associated with ongoing energy development in the Book Cliffs and Willow-Hill Creeks areas. Table 3.13-1 provides a list of existing federal ROWs and their current holders.

Table 3.12-1 Existing Federal ROWs Affected by the Proposed Action

Federal ROW	Holder
UTU-47454	Slate River Resources, LLC
UTU-81566	“ “ “ “
UTU-82254	“ “ “ “
UTU-82765	“ “ “ “
UTU-76920	“ “ “ “
UTU-81567	“ “ “ “
UTU-82255	“ “ “ “
UTU-82270	“ “ “ “
UTU-72155	UBET Cellular
UTU-46776	ETC Canyon Pipeline, LLC

Federal ROW	Holder
UTU-47466	“ “ “ “
UTU-46862	“ “ “ “
UTU-0092176	“ “ “ “
UTU-53906	“ “ “ “
UTU-76116	“ “ “ “
UTU-47454	“ “ “ “
UTU 50801	“ “ “ “
UTU 74565	“ “ “ “
UTU 85853	“ “ “ “
UTU-74592	Comet Resources LLC
UTU-53945	NW Pipeline Corporation
UTU-49205	XTO Energy, Inc.
UTU-76929	“ “ “
UTU-85542	“ “ “
UTU-57523	“ “ “
UTU-77736	“ “ “
UTU-49210	Newfield Production Company
UTU-50501	“ “ “
UTU-47454	Enduring Resources LLC
UTU-81566	“ “ “
UTU-82254	“ “ “
UTU-82765	“ “ “
UTU-76920	“ “ “
UTU-81567	“ “ “
UTU-82255	“ “ “
UTU-82270	“ “ “
UTU-77651	Rosewood Resources
UTU-77715	Pioneer Natural Resources USA, Inc.
UTU-79095	“ “ “ “ “
UTU-81233	“ “ “ “ “
UTU-77717	“ “ “ “ “
UTU-81232	“ “ “ “ “
UTU-85503	“ “ “ “ “

Source: BLM data files.

3.13 SOCIO-ECONOMICS

Although Uintah County has experienced continuous population growth since the early 1900’s, with about 5.5 residents per square mile, it remains one of the least densely populated counties in the State (BLM 2008c). Residents of the Uinta Basin place a high value on living in rural and small-town environments and want to keep that identity (BLM 2008c). Public land management in the Book Cliffs has been to sustain the public’s perception of the area being remote and primitive, where visitors may have a “recreational freedom-of-choice with minimal regulatory constraint” (BLM 2008c). Improvements to existing access route into the Book Cliffs would be seen by members of the public as permanently changing these long-held perceptions.

Population growth rates in Uintah County have fluctuated with the boom and bust cycle of energy development. For example, the population of the County grew by 64 percent between 1970 and 1980, following a boom in the oil and gas industry. The growth rate fell to approximately 9 percent between 1980 and 1990, as the industry declined. Uintah County could experience a moderate growth rate of about 14 percent into the next decade.

A 2007 study University of Utah study, commissioned by the Governor's Office, concluded that about 50 percent of all employment in the Uinta Basin was directly or indirectly attributable to the oil and gas industry (referenced in BLM 2008c, page 3-61). This effect is presumably greater in Uintah than in Duchesne or Daggett Counties (BLM 2008c). Until late 2008 the Uinta Basin and Uintah County were experiencing a boom in the industry and were feeling the stress that a large influx of energy-related workers was having on the local infrastructure. In late 2008, the Basin and county experienced a general slow-down in energy development due to the national recession. Currently the industry is cautiously increasing its exploration and development actions in the Basin and county. A return to pre-2008 activity levels is unknown; however, the known future energy development plans and historic industry trends in the Basin indicate that resumption of intense energy exploration and development activity in the greater Book Cliffs area will resume.

Currently the County provides a limited law enforcement presence in the greater Book Cliffs area, concentrating the majority of their law enforcement officers in the populated areas of, and along the major transportation routes in, the County. There is a concern that the anticipated energy development and increased human presence, facilitated by improved access in the Book Cliffs area, would require a corresponding need for an increased law enforcement presence to ensure human safety and to protect property.

It is important to note that the amount of revenue generated in Uintah County from energy development is allocated to the Federal government. Of that total, 10 percent pay administrative fees, 45 percent is allocated to the Federal government and 45 percent is paid to the State of origin. The State then redistributes 40 percent of the royalty back to the County of origin (BLM 2008a). Based on this figuring, approximately \$16 million of the total amount of royalties collected in 2001 was redistributed to Uintah County out of a total of about \$35.6 million Federal royalty values generated (BLM 2005).

The Proposed Action would involve upgrades to, and application of an all-weather bituminous surface pavement on the existing Seep Ridge Road in Uintah County. The Seep Ridge Road extends southward into Grand County approximately 2 miles to its terminus at the Book Cliff Divide Road (refer to Exhibit 1 in Appendix F). Grand County is concerned that planned improvements to the road in Uintah County would result in increased annual maintenance on their portion of the road. Grand County is also concerned that anticipated increased use of the Seep Ridge Road in Uintah County would put pressure on Grand County to construct and maintain an all-weather road that would connect the Book Cliffs area with Interstate Highway 70, approximately 25 miles to the south.

Currently Grand County conducts annual maintenance on their portion of the Seep Ridge Road in the spring and fall seasons. Existing agreements between Grand County and energy operators in the area ensure the road is kept open during the winter. Approximately 22 percent of Grand County's annual budget is dedicated to road construction and maintenance, of which approximately \$7,000, or 0.4 percent, is assigned to the Seep Ridge Road (Grand County, 2010). Access from the Book Cliffs to Interstate Highway 70 currently involves traveling on unimproved public access roads along the Book Cliff Divide and down Hay Canyon.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter provides an analysis of the environmental consequences from implementation of the Proposed Action (Alternative A) and Alternative B (the No Action Alternative). Best Management Practices that would avoid or reduce impacts under Alternative A have been included in Chapter 2 of this EA, and the analyses in this chapter assume that those measures would be implemented.

Direct impacts to resources, those caused by the action and occur at the same time and/or place (40 CFR 1508.8), in the following analyses are described in terms of initial impacts from construction and development activities. In areas where interim reclamation is implemented, ground cover by herbaceous and woody species could re-establish within 7 to 8 years following seeding of plant species adapted to the region and diligent weed control efforts. However, it is important to note that recent BLM monitoring has documented that reclamation efforts on BLM-administered public lands in the Basin have largely been unsuccessful at reestablishing soil stability, vegetation, and subsequent forage for wildlife and livestock due to poor soils and drought. BLM field inspections show that initial impacts may be more accurately portrayed as long-term impacts. All surface disturbance proposed under the alternatives, therefore, could remain as long-term (or even permanent) impacts on the landscape if reclamation efforts are not successful. As a result of this monitoring effort, BLM has increased its requirements for better site-specific reclamation planning. This increased focus on successful reclamation planning and increased monitoring and compliance efforts are expected to yield better reclamation results. Appendix C provides the recommended reclamation plan for this project. The plan outlines specific actions that would realize BLM's current successful reclamation standards.

4.2 AIR QUALITY

4.2.1 ALTERNATIVE A & C– PROPOSED ACTION AND BUCK CANYON TERMINUS

Project-related emissions have the potential to affect air quality on both a local and a regional scale. The VFO FEIS and Proposed RMP (BLM 2008c) included a detailed air quality analysis covering the Uinta Basin. The summary conclusions for impacts resulting from land and realty management decisions, such as the Proposed Action, “are projected to have no significant effect on air quality except as they impact other management decisions.” (p. 4-33).

The results of screening visibility analyses conducted for the RMP exercise indicated that potential BLM sources, including a project such as upgrading the Seep Ridge Road, would not result in a perceptible impact on visibility at any of the PSD Class I and Class II areas within and/or adjacent to the Vernal Planning Area. Due to the relatively small scale of the Proposed Action, a regional-based model run specific to the Proposed Action would not have the resolution needed to reveal a discernible difference between the current air quality conditions and air quality conditions during and after completion of the proposed improvements. Thus, the fugitive dust created during the 6-year construction period associated with the Proposed Action would result in short-term impacts that would not likely exceed air quality standards for visibility provided that mitigation outlined in Appendix C would be implemented. Paving the Seep Ridge Road would result in positive, long-term improvements to air quality since current levels of fugitive dust would be eliminated.

Ozone:

Winter ozone formation is a newly recognized issue in the Uinta Basin, and the methods of analyzing and managing this problem is in the development stage. Existing photochemical models are currently unable to satisfactorily replicate winter ozone formation, due in part to the very low mixing heights associated with the unique meteorology of these ambient conditions.

Based on the emission inventories developed for Uintah County, the most likely dominant source of ozone precursors at the Ouray and Redwash monitoring sites are oil and gas operations in the vicinity of the monitors. The monitors are located in remote areas where impacts from other human activities are unlikely to be significantly contributing to this ozone formation. While ozone precursors can be transported large distances, the meteorological conditions under which this cold pool ozone formation is occurring tends to preclude any significant transport. At the current time ozone exceedences in this area seem to be confined to the winter months during periods of intense surface inversions and low mixing heights.

Although road construction equipment would emit ozone precursors, further substantial research is needed to definitively identify all of the sources of ozone precursors contributing to the observed winter ozone concentrations in the Uinta Basin. In particular, speciation of gaseous air samples collected during periods of high ozone is needed to determine which VOC s are present and what their likely sources area. Consequently, until such research is conducted and when models are developed, impacts from ozone precursors cannot be adequately quantified. So long as this data is absent, no effective mitigation could be developed for the proposed action.

4.2.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, construction to improve and pave the Seep Ridge Road would not occur. Dust from primarily energy-development related vehicle traffic on the native material surface of the Seep Ridge Road would continue. Short- and long-term impacts to environmental elements from fugitive dust would continue, with long-term impacts likely to increase in severity due to the expected increase in energy-development activities in areas accessed by the Seep Ridge Road. The continued dust levels produced by vehicle traffic along the unpaved Seep Ridge Road would not result in an exceedance of current air quality standards.

4.2.3 MITIGATION MEASURES

Fugitive dust mitigation would be applied as outlined in the reclamation plan outlined in Appendix C.

4.3 CULTURAL RESOURCES

Ground-disturbing activities, such as road construction, and secondary surface activities, such as vehicular traffic, and relocating the Monument Ridge Pasture Corral and the Buck Canyon Kiosk, can directly and irreversibly damage or destroy sensitive cultural resources. Many of the known archaeological sites, both prehistoric and historic, in the Uinta Basin are shallow and therefore vulnerable to the direct impacts of vegetation clearing, ROW blading, and excavation of soils.

Indirect impacts could include damage or destruction of cultural resources as a result of increased visitation of otherwise remote areas and as a result of improved public access to these areas provided by Project Area access roads.

4.3.1 ALTERNATIVE A – PROPOSED ACTION

The Proposed Action would include potential new disturbance to approximately 613 acres in the Project Area with ten cultural sites within the APE. BLM archaeologists visited site 42Un7633 to evaluate the potential for another reroute or the possibility of taking the road through the middle of site 42Un7633. It was determined that with the limited space between the site and the edge of the canyon, moving the site further west was not possible. The site to the east of new location (42Un1779) is so large that moving the road east was not possible. After careful inspection, it was agreed that the best route to take was through the smaller eligible site (42Un7633).

Through discussions with Lori Hunsaker, Deputy State Historic Preservation Officer for the State of Utah, a treatment plan was formulated. It was agreed that BLM would record and map the site, collect all surface artifacts still present on the site (the pottery shards could not be relocated), and monitor the site during construction.

The Advisory Council on Historic Preservation (ACHP) was invited to consult on the undertaking. They declined to be a consulting party and deferred the decision to the BLM and the SHPO. The MOA in Appendix I of this document is between the BLM, SHPO, and Uintah County defines the actions that will be taken for site 42Un7633.

In addition to the sites that have been documented as part of the 2009 cultural resource survey, one possibly historic archaeological site, the Monument Ridge Pasture Corral, was fully documented as part of the cultural resource inventory. Even though this site is located outside of the project ROW, it was documented because it will be dismantled and moved as part of the Proposed Action. The corral will be moved to a 40-acre block located in section 26, T15S, R23E, and this block was surveyed for cultural resources April 29, 2009. No cultural material was identified in association with this intensive inventory. In addition, one 5-acre block was surveyed April 29, 2009, for the location of one new livestock watering pond/reservoir. This block is located in section 26, T15S, R23E.

Under the Proposed Action impacts to archaeological resources fall into three categories.

1. Direct impacts to sites determined eligible to the NRHP that would be partially or completely removed by road construction efforts.
2. Indirect impacts to eligible sites include sites determined eligible to the NRHP that are outside the actual construction footprint, but within the 300-foot cultural resource APE and may be impacted by equipment and construction traffic across the site.
3. Direct and indirect impacts to sites that are not eligible would include both partial and/or complete destruction and inadvertent impacts from equipment and construction traffic across the site. The Monument Ridge Pasture Corral is located outside of the APE for the road footprint; however, because of its proximity to the edge of the roadway, it is proposed to be removed and relocated to another area.

There is a chance that additional subsurface cultural resource sites could be unearthed during ground-disturbing activities associated with the Proposed Action. The County's commitment to immediately stop work and consult with the SMA at a site where cultural materials are exposed would minimize, but not eliminate impacts to cultural resources.

The Proposed Action would result in increased human presence in the Project Area. Upgrades to the Seep Ridge Road would provide improved access to areas that may contain cultural resources. Opportunities for looting and vandalism of cultural resources could increase as an indirect effect of the Proposed Action; however, the potential risk cannot be quantified at this time.

Table 4.3-1 Cultural Resources Recorded or Updated within the Area of Proposed Effect (APE)

Site No.	Description	National Register Eligibility	Nature of Impact and Mitigation Measures
42Un0646	Prehistoric lithic scatter composed of debitage (flakes) with tools in a 29 meter x 31 meter area.	Not Eligible	Direct and Indirect Impacts: No monitoring necessary since site is not eligible
42Un1779	Prehistoric lithic scatter with features and tools.	Eligible	Indirect Impacts: Monitor: A reroute was surveyed to avoid this site. "No adverse effect to historic properties." Site is outside of direct impact construction area
42Un1782	Prehistoric campsite composed lithic debitage and features.	Eligible	Indirect Impacts: Monitor: Site is outside of direct impact construction area
42UN002487	Historic Buck Canyon Road with no associated historic artifacts.	Eligible	Indirect Impacts: Monitor: Site is outside of direct impact construction area
42UN005506	Historic campsite composed of tin cans, glass, several diagnostic artifacts, and modern debris in a 56 meter x 30 meter area.	Not Eligible	Direct and Indirect Impacts: No monitoring necessary, since site is not eligible
42UN007040	Multi-component site consisting of an historic debris scatter and small prehistoric flake scatter. Several diagnostic historic artifacts and historic features with one historic and prehistoric artifact concentration are present. Total site area is approximately 50 by 50 meters.	Eligible	Indirect Impacts: Monitor: Site is outside of direct impact construction area
42UN007041	Historic debris scatter with several diagnostic artifacts in an approximate 25 meter squared area.	Not Eligible	Direct and Indirect Impacts: No monitoring necessary since site is not eligible
42UN007633	Prehistoric flake and ceramic sherd scatter with chipped stone tools in an approximate 57 meters by 42 meter area.	Eligible	Direct Impacts: Site-specific MOA applies see appendix developed
42UN007634	Multi-component site consisting of an historic debris scatter and prehistoric flake scatter. Several diagnostic historic artifacts and one prehistoric flake concentration are present. Total site area is approximately 79 by 67 meters.	Not Eligible	Direct and Indirect Impacts: No monitoring necessary since site is not eligible
42UN007635	Historic Monument Ridge Road Corral with no associated artifacts. Corral measures 154 feet x 109 feet	Not Eligible	Direct Impacts: Existing structure would be relocated.

4.3.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, the proposed construction activities and paving actions would not occur. Although regular maintenance activities would continue on the Seep Ridge Road, such work would be confined to the existing ROW, thus greatly reducing the possibility of disturbing cultural material buried adjacent to the existing ROW. The opportunity for vandalism of cultural materials would remain unchanged from current conditions. Continued road widening due to ongoing maintenance, however, could affect cultural resources.

4.3.3 ALTERNATIVE C – BUCK CANYON TERMINUS

Alternative C would include potential new disturbance to approximately 355 acres in the Project Area with five cultural sites within the APE. BLM archaeologists visited site 42Un7633 to evaluate the potential for another reroute or the possibility of taking the road through the middle of site 42Un7633. It was determined that with the limited space between the site and the edge of the canyon moving the site further west was not possible. The site to the east of new location (42Un1779) is so large that moving the road east was not possible. After careful inspection it was agreed that the best route to take was through the smaller eligible site (42Un7633).

Through discussions with Lori Hunsaker, Deputy State Historic Preservation Officer for the State of Utah, a treatment plan was formulated. It was agreed that BLM would record and map the site, collect all surface artifacts still present on the site (the pottery shards could not be relocated) and monitor the site during construction.

The Advisory Council on Historic Preservation (ACHP) was invited to consult on the undertaking. They declined to be a consulting party and deferred the decision to the BLM and the SHPO. The MOA in Appendix I of this document is between the BLM, SHPO, and Uintah County defines the actions that will be taken for site 42Un7633.

In addition to the sites that have been documented as part of the 2009 cultural resource survey, one possibly historic archaeological site, the Monument Ridge Pasture Corral, was fully documented as part of the cultural resource inventory. Even though this site is located outside of the project ROW, it was documented because it will be dismantled and moved as part of the Proposed Action. The corral will be moved to a 40-acre block located in section 26, T15S, R23E, and this block was surveyed for cultural resources April 29, 2009. No cultural material was identified in association with this intensive inventory. In addition, one 5-acre block was surveyed April 29, 2009, for the location of one new livestock watering pond/reservoir. This block is located in section 26, T15S, R23E. Under the Proposed Action impacts to archaeological resources fall into three categories.

1. Direct impacts to sites determined eligible to the NRHP that would be partially or completely removed by road construction efforts.
2. Indirect impacts to eligible sites include sites determined eligible to the NRHP that are outside the actual construction footprint, but within the 300-foot cultural resource APE and may be impacted by equipment and construction traffic across the site.
3. Direct and indirect impacts to sites that are not eligible would include both partial and/or complete destruction and inadvertent impacts from equipment and construction traffic across the site. The Monument Ridge Pasture Corral is located outside of the APE for the road footprint; however, because of its proximity to the edge of the roadway, it is proposed to be removed and relocated to another area.

There is a chance that additional subsurface cultural resource sites could be unearthed during ground-disturbing activities associated with the Proposed Action. The County’s commitment to immediately stop work and consult with the SMA at a site where cultural materials are exposed would minimize, but not eliminate impacts to cultural resources.

The Proposed Action would result in increased human presence in the Project Area. Upgrades to the Seep Ridge Road would provide improved access to areas that may contain cultural resources. Opportunities for looting and vandalism of cultural resources could increase as an indirect effect of the Proposed Action; however, the potential risk cannot be quantified at this time.

Table 4.3.3-1 Cultural Resources Recorded or Updated within the Area of Proposed Effect (APE) for Alternative C

Site No.	Description	National Register Eligibility	Nature of Impact and Mitigation Measures
42Un7039	Historic debris scatter with several diagnostic artifacts and an historic road. Recommended as not eligible to the NRHP.	Not Eligible	Direct and Indirect Impacts: No monitoring necessary since site is not eligible
42Un1779	Prehistoric lithic scatter with features and tools.	Eligible	Indirect Impacts: Monitor: A reroute was surveyed to avoid this site. “No adverse effect to historic properties.” Site is outside of direct impact construction area
42UN002487	Historic Buck Canyon Road with no associated historic artifacts.	Eligible	Indirect Impacts: Monitor: Site is outside of direct impact construction area
42UN007041	Historic debris scatter with several diagnostic artifacts in an approximate 25 meter squared area.	Not Eligible	Direct and Indirect Impacts: No monitoring necessary since site is not eligible
42UN007633	Prehistoric flake and ceramic sherd scatter with chipped stone tools in an approximate 57 meters by 42 meter area.	Eligible	Direct Impacts: Site-specific MOA applies see appendix developed

4.3.4 MITIGATION MEASURES FOR ALTERNATIVES A & C

- A BLM-approved licensed Archaeologist will be required to monitor the following National Register of Historic Places (NRHP) eligible sites: Site no. 42Un1779, 42Un1782, 42UN002487, and 42UN007040. Monitoring shall be conducted during and following construction activities. Subsequent monitoring reports shall be submitted to BLM. Uintah County shall be responsible for funding the monitoring.
- Sites that have been determined not eligible for NRHP listing will require no monitoring.

- The Monument Ridge Pasture Corral will be relocated by the County as part of the Proposed Action (Alternative A only) described in Chapter 2 of the EA.
- Site #42UN007633 will be subject to terms and conditions set forth in the MOA agreed upon by the SHPO, Uintah County and the BLM as follows:
 - BLM shall ensure that the following measures are carried out:
 - The site will be intensively documented with all surface materials mapped prior to surface collection.
 - All surface tools will be collected.
- When human remains and/or funerary objects subject to NAGPRA, are discovered as a result of BLM or BLM authorized activity, such as construction or other land-disturbing actions, they are to be handled in the manner described in the “inadvertent discovery” procedures found in 43CFR 10.4.
- “Inadvertent discovery” procedures in 43 CFR 10 include ceasing all activity in the area of the discovery and protecting all discovery materials. If materials are NAGPRA materials the Field Office is required to identify and consult with any lineal descendant or culturally related tribe or any tribe for whom the area of discovery falls within the boundaries of their aboriginal lands. Consultation should focus on the BLMs plan of action and final disposition of the discovered materials and must be documented.
- In order to address the potential impacts to subsurface cultural resources that could be discovered during ground disturbing activities related to construction, the BLM, SITLA, SHPO and other consulting parties shall coordinate on a site-specific basis.

4.4 PALEONTOLOGY

4.4.1 ALTERNATIVE A & C– PROPOSED ACTION AND BUCK CANYON TERMINUS

Potential impacts to paleontological resources include the loss of scientifically important fossils due to excavation activities. The loss of fossils could result from crushing by construction equipment as well as increased theft and vandalism of exposed fossils. Alternatively, construction of the project facilities may uncover scientifically important fossils, which could be considered a positive (beneficial) impact.

The Project Area has a fairly high potential for producing substantial fossil material. The County has committed to a BMP (Section 2.1.5.2) that if fossil resources are unearthed during ground-disturbing activity, work would be suspended until the SMA determines what mitigation is needed. As with cultural resources, an improved roadway increases the opportunity for possible vandalism of substantial fossil material.

4.4.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, potential impacts to paleontological resources would be lower compared to the Proposed Action since less surface disturbance would occur. Conversely, the potential for discovering new localities would also be decreased.

4.4.3 MITIGATION MEASURES

No additional mitigation measures are recommended.

4.5 SOILS

4.5.1 ALTERNATIVE A – PROPOSED ACTION

The primary effect of surface disturbance is increased wind and water erosion from removal of established vegetation and soil compaction. A secondary effect is loss of site productivity from mixing soil horizons following disturbance.

The Proposed Action would involve a total of about 813.1 acres would be disturbed during the 6 years of construction, about 135.6 acres/year. The current average baseline (or naturally occurring) erosion rate for the Project Area is approximately 1.45 tons/acre/year (BLM 1984). Two studies conducted on sediment yield from disturbed surfaces provide insight into the amount of increased erosion that could be expected from the Project Area. Lusby and Toy (1976) reported that yields from reclaimed surface mines were initially 300 to 600 percent higher than from undisturbed surfaces. Frickel et al. (1975) found that yields increased to about 2.9 tons/acre/year in the Piceance Basin of Colorado after construction of oil shale project facilities. Using these studies as examples, it is assumed that average erosion rates for disturbed soils in the Project Area would increase to about 4.35 tons/acre/year. Based on these estimates the Proposed Action would produce an additional 589.9 tons of sediment annually during the years of construction and 2 years following final reclamation (135.6 acres disturbed/year x 4.35 tons/acre/yr).

The analysis described above represents a conservative estimate of the amount of erosion expected to be produced from naturally occurring conditions as well as from disturbed areas within the Project Area. The actual current erosion rate is likely less than estimates used above due to the specific soils, aspects, topography, and vegetation cover involved with the Project Area.

The success of reclamation and reseeding action would be affected by the degree of mixing of the topsoil with subsoil horizons. Subsoil horizons do not have the biomaterial and biochemical structure to support vegetation germination and production. Thus, the long-term productivity of the reclaimed sites using mixed soil materials would be reduced. Careful removal of topsoil, segregating it from other cut material and replacing it as the top layer during reclamation would maximize the proper soil medium for successful reseeding.

A reclamation plan designed to mitigate the impact to soils and vegetation is located in Appendix C. No further mitigation would be required beyond those identified in the reclamation plan.

4.5.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, regular maintenance operations of the native material road would continue within the existing 66-foot ROW. The existing Seep Ridge Road ROW involves a total of about 363 acres, of which about 143 acres are disturbed areas (including the unpaved road surface) and about 220 acres are in an undisturbed condition. Assuming the 145 disturbed acres produce an estimated 4.35 tons of sediment/ac/yr, approximately 319 tons of sediment are produced annually; and, assuming the 220 acres of undisturbed ROW generate a baseline sediment level of 662 tons/year (220 acres x 1.45 tons/ac/yr), a total of approximately 941 tons of sediment are produced annually from the existing Seep Ridge Road.

4.5.3 ALTERNATIVE C – BUCK CANYON TERMINUS

The primary effect of surface disturbance is increased wind and water erosion from removal of established vegetation and soil compaction. A secondary effect is loss of site productivity from mixing soil horizons following disturbance.

Under implementation of Alternative C, a total of about 357.6 acres would be disturbed. This disturbance would last approximately 3 years, equating to about 119 acres of disturbance per year. The current average baseline (or naturally occurring) erosion rate for the Project Area is approximately 1.45 tons/acre/year (BLM 1984). Two studies conducted on sediment yield from disturbed surfaces provide insight into the amount of increased erosion that could be expected from the Project Area. Lusby and Toy (1976) reported that yields from reclaimed surface mines were initially 300 to 600 percent higher than from undisturbed surfaces. Frickel et al. (1975) found that yields increased to about 2.9 tons/acre/year in the Piceance Basin of Colorado after construction of oil shale project facilities. Using these studies as examples, it is assumed that average erosion rates for disturbed soils in the Project Area would increase to about 4.35 tons/acre/year. Based on these estimates, under Alternative C, an additional 517.7 tons of sediment annually during the 3 years of construction and 2 years following final reclamation (119 acres disturbed/year x 4.35 tons/acre/yr).

The analysis described above represents a conservative estimate of the amount of erosion expected to be produced from naturally occurring conditions as well as from disturbed areas within the Project Area. The actual current erosion rate is likely less than estimates used above due to the specific soils, aspects, topography, and vegetation cover involved with the Project Area.

The success of reclamation and reseeding action would be affected by the degree of mixing of the topsoil with subsoil horizons. Subsoil horizons do not have the biomaterial and biochemical structure to support vegetation germination and production. Thus, the long-term productivity of the reclaimed sites using mixed soil materials would be reduced. Careful removal of topsoil, segregating it from other cut material and replacing it as the top layer during reclamation would maximize the proper soil medium for successful reseeding.

A reclamation plan designed to mitigate the impact to soils and vegetation is located in Appendix C. No further mitigation would be required beyond those identified in the reclamation plan.

4.5.4 MITIGATION MEASURES

No additional mitigation measures beyond those required in the reclamation plan would be required.

4.6 WATER QUALITY (SURFACE/GROUND)

4.6.1 ALTERNATIVE A – PROPOSED ACTION

The potential impacts to surface water include increased sedimentation and turbidity of surface waters via increased runoff during construction activities and depletion of water flow in the Green and White Rivers due to project-related water consumption.

The potential for impacts would be greatest shortly after the start of construction activities and would decrease in time due to natural stabilization, reclamation, and re-vegetation efforts. The magnitude of these potential impacts to surface water resources depends on several factors, including the proximity of

the disturbance to the water influence zone (WIZ) of surface water drainages or ponds, slope, aspect and gradient, soil type, the duration and timing of the construction activity, and the success or failure of reclamation and mitigation measures. The WIZ is defined as the buffer zone that includes the floodplain, riparian vegetation, inner gorge, unstable areas, or highly erodible soils located adjacent to a stream or other water body.

Sedimentation and Turbidity

Increased erosion and subsequent increased sedimentation of ephemeral drainages within the Project Area is possible, especially during the construction of project facilities. Using the sediment production figures from Section 4.5.1 above, approximately 589.9 tons of sediment/year could be generated until disturbed areas are successfully reclaimed (6 years of construction, plus 2 years for reclamation), the Proposed Action would produce a total of about 4,719 tons of additional sediment. The increased erosion could also potentially lead to an increase in sedimentation in major ephemeral drainages including Cottonwood Wash, Sand Wash, Seep Canyon, PR Canyon, etc., increasing turbidity of perennial streams including Willow Creek and Bitter Creek and ultimately both the White and Green Rivers.

This erosion estimate is subject to considerable uncertainty. Over time, short-duration precipitation events and snowmelt could cause soil lost from the proposed facilities in the Project Area to reach the drainages of adjacent ephemeral watersheds. This sediment could then eventually be transported down the ephemeral drainages larger ephemeral and perennial drainages and on to the White and Green Rivers. In sufficient amounts, the additional sediment from construction activities could clog stream channels, cause accelerated siltation of livestock ponds, degrade aquatic habitat downstream by covering stream substrates with fine sediment, and increase the turbidity within the streams during the short-term.

With the proper application and maintenance of planned erosion control measures, the actual amount of sediment that could potentially be transported to the White and Green Rivers would be much less than the estimates outlined above. Annual sediment loading in the White River at Ouray, Utah is about 1,680,000 tons and in the Green River at Ouray is about 6,789,000 tons (Lentsch, et al 2000). The highest sediment loading occurs during the months of May and June from snowmelt runoff. Assuming 100% of the estimated maximum additional sediment produced in the Project Area reaches the White and Green Rivers; the Proposed Action could increase the annual sediment loading of the White and Green Rivers over the 8 years of construction and reclamation by less than 1 percent, a minimal increase.

Stream Flow Regimes

As previously discussed, approximately 424 acre-feet of water would be used over the 6-year construction period to control fugitive dust construction activities. Water needed would be obtained from sources that are actively permitted with the Utah Division of Water Resources. Water would be trucked from the permitted sources to construction drilling locations. The anticipated water use is not expected to alter stream flow regimes. The engineering and design as proposed in the construction elements (Section 2.1.1) would adequately mitigate the impacts to the floodplains.

4.6.2 ALTERNATIVE B – NO ACTION

Sedimentation and Turbidity

Under the No Action Alternative, the existing roadway would not be paved, but would remain in its existing native material road-base. Regular maintenance activities would be completed as needed. Some amount of the estimated 941 tons of sediment produced annually could enter the ephemeral drainages and could increase sedimentation in the major ephemeral and increased turbidity of perennial streams and

ultimately the White and Green Rivers downstream from the Seep Ridge Road. Assuming 100% of the estimated maximum sediment produced in the existing ROW reaches the White and Green Rivers, the No Action Alternative could annually increase the sediment loading of the White and Green Rivers by approximately 0.0005 and 0.00001 percent, respectively.

Stream Flow Regimes

Approximately 40 acre-feet of water could be needed annually for fugitive dust control associated with annual maintenance activities of the existing roadway. As with the Proposed Action water needed would be obtained from sources that are actively permitted with the Utah Division of Water Resources. Water would be trucked from the permitted sources to drilling locations. The anticipated water use is not expected to alter stream flow regimes.

4.6.3 ALTERNATIVE C – BUCK CANYON TERMINUS

The potential impacts to surface water include increased sedimentation and turbidity of surface waters via increased runoff during construction activities and depletion of water flow in the Green and White Rivers due to project-related water consumption.

The potential for impacts would be greatest shortly after the start of construction activities and would decrease in time due to natural stabilization, reclamation, and re-vegetation efforts. The magnitude of these potential impacts to surface water resources depends on several factors, including the proximity of the disturbance to the water influence zone (WIZ) of surface water drainages or ponds, slope, aspect and gradient, soil type, the duration and timing of the construction activity, and the success or failure of reclamation and mitigation measures. The WIZ is defined as the buffer zone that includes the floodplain, riparian vegetation, inner gorge, unstable areas, or highly erodible soils located adjacent to a stream or other water body.

Sedimentation and Turbidity

Increased erosion and subsequent increased sedimentation of ephemeral drainages within the Project Area is possible, especially during the construction of project facilities. Using the sediment production figures from Section 4.5.1 above, approximately 517.7 tons of sediment/year could be generated until disturbed areas are successfully reclaimed (3 years of construction, plus 2 years for reclamation), the Proposed Action would produce a total of about 2,588 tons of additional sediment. The increased erosion could also potentially lead to an increase in sedimentation in major ephemeral drainages including Cottonwood Wash, Sand Wash, Seep Canyon, PR Canyon, etc., increasing turbidity of perennial streams including Willow Creek and Bitter Creek and ultimately both the White and Green Rivers.

This erosion estimate is subject to considerable uncertainty. Over time, short-duration precipitation events and snowmelt could cause soil lost from the proposed facilities in the Project Area to reach the drainages of adjacent ephemeral watersheds. This sediment could then eventually be transported down the ephemeral drainages larger ephemeral and perennial drainages and on to the White and Green Rivers. In sufficient amounts, the additional sediment from construction activities could clog stream channels, cause accelerated siltation of livestock ponds, degrade aquatic habitat downstream by covering stream substrates with fine sediment, and increase the turbidity within the streams during the short-term.

With the proper application and maintenance of planned erosion control measures, the actual amount of sediment that could potentially be transported to the White and Green Rivers would be much less than the estimates outlined above. Annual sediment loading in the White River at Ouray, Utah is about 1,680,000 tons and in the Green River at Ouray is about 6,789,000 tons (Lentsch, et al 2000). The highest sediment

loading occurs during the months of May and June from snowmelt runoff. Assuming 100% of the estimated maximum additional sediment produced in the Project Area reaches the White and Green Rivers; the Proposed Action could increase the annual sediment loading of the White and Green Rivers over the 5 years of construction and reclamation by less than 1 percent, a minimal increase.

Stream Flow Regimes

Approximately 186 acre-feet of water would be used over the 3-year construction period to control fugitive dust construction activities. Water needed would be obtained from sources that are actively permitted with the Utah Division of Water Resources. Water would be trucked from the permitted sources to construction drilling locations. The anticipated water use is not expected to alter stream flow regimes. The engineering and design as proposed in the construction elements (Section 2.1.1) would adequately mitigate the impacts to the floodplains.

4.6.4 MITIGATION MEASURES

No mitigation measures are proposed beyond those required in the reclamation plan.

4.7 FLOODPLAINS

4.7.1 ALTERNATIVE A – PROPOSED ACTION

Road construction within floodplains potentially increases the risk of erosion and sediment production. Increased sediment could impact water quality and wildlife resources.

Sixteen (16) ephemeral drainage crossings of Seep Ridge Road were identified during the on-site investigation. Each of the existing drainage crossings has existing culverts in place to convey water underneath Seep Ridge Road. It is anticipated that proposed project construction could require lengthening and/or increasing the size of these existing culverts to withstand 100-year storm events. It is expected that impacts to existing ephemeral drainages within the Project Area would be limited to increasing the footprint of culverts and associated road fill. Adherence to established road design standards and implementation of BMPs in the use and placement of culverts, including: appropriate size culvert for the drainage, proper angle of culvert to reduce water's energy within the drainage, and rock armament on the downstream side, would minimize the direct impacts to the floodplains associated with the West and East Forks of Cottonwood Wash and the ephemeral drainages in the Project Area. These actions and successful reclamation would also reduce the amount of erosion and sediment carried by these drainages. The engineering and design as proposed in the construction elements of the Proposed Action (Section 2.1.1) would adequately mitigate the impacts to the floodplains.

4.7.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, surface disturbance and extensive construction activities as outlined in the Proposed Action would not occur. Regular maintenance activities of the existing road would continue and proper drainage from the roadway would be maintained in accordance with the existing terms and conditions of the county's ROW. As such impacts to floodplains associated with the West and East Forks of Cottonwood Wash and the ephemeral drainages that are crossed by the existing roadway would remain at current levels.

4.7.3 ALTERNATIVE C – BUCK CANYON TERMINUS

Road construction within floodplains potentially increases the risk of erosion and sediment production. Increased sediment could impact water quality and wildlife resources.

Approximately eight ephemeral drainage crossings of Seep Ridge Road were identified through a GIS review. It is thought that each of the existing drainage crossings have culverts in place to convey water underneath Seep Ridge Road. It is anticipated that proposed project construction could require lengthening and/or increasing the size of these existing culverts to withstand 100-year storm events. It is expected that impacts to existing ephemeral drainages within the Project Area would be limited to increasing the footprint of culverts and associated road fill. Adherence to established road design standards and implementation of BMPs in the use and placement of culverts, including: appropriate size culvert for the drainage, proper angle of culvert to reduce water’s energy within the drainage, and rock armament on the downstream side, would minimize the direct impacts to the floodplains associated with the West and East Forks of Cottonwood Wash and the ephemeral drainages in the Project Area. These actions and successful reclamation would also reduce the amount of erosion and sediment carried by these drainages. The engineering and design as proposed in the construction elements of the Proposed Action (Section 2.1.1) would adequately mitigate the impacts to the floodplains.

4.7.4 MITIGATION MEASURES

No additional mitigation measures are recommended.

4.8 VEGETATION, INCLUDING INVASIVE PLANTS AND NOXIOUS WEEDS, SPECIAL STATUS PLANT SPECIES AND FORESTRY/WOODLANDS

4.8.1 ALTERNATIVE A – PROPOSED ACTION

4.8.1.1 General Vegetation

Surface disturbance associated with the Proposed Action’s road re-construction and upgrades would involve a total of approximately 613 acres. Approximately 233.4 acres would be involved with the paved road and other support structures and would not be reclaimed. Reclamation would be completed on a total of 379.6 acres (367 acres within the ROW and 46.8 acres of existing road outside the proposed ROW that would be closed). Table 4.8-1 summarizes estimated maximum new surface disturbance by vegetation community, associated with the Proposed Action.

Table 4.8.1-1 Proposed Surface Disturbance, by Vegetation Community, for the Proposed Action

Vegetation Community	Estimated New Disturbance within Project Area (Acres)	Percent of Project Area
Mixed Desert Shrub	128.7	21
Wyoming Sagebrush	220.7	36
Pinyon-Juniper-Sage/Woodland	214.6 ¹	35
Montane Brush/Woodland	49.0	8
Estimated Total	613²	100

¹Includes 4 acres outside of the proposed ROW for the two proposed watering ponds (reservoirs), and 2 acres outside of the proposed ROW for relocation of the Monument Ridge Pasture Corral. ²Does not include existing roadway surface (142.9 acres).

The Proposed Action would have both direct and indirect impacts on vegetation resources. Direct effects would include removal of vegetation, modification of species composition and structure, and fragmentation of vegetation communities. Indirect impacts may include increased potential for weed invasion, effects of fugitive dust on plants, increased exposure of soils to accelerated erosion, and degradation and loss of topsoil and soil microorganisms.

Specific actions set out under the Proposed Action, including reclamation of disturbed areas outside the running surface of the paved road, control of soil erosion, minimizing vegetation disturbance, dust abatement measures, and control of noxious weeds, would reduce impacts to vegetation communities in the Project Area. The ability of each vegetation community to successfully recover to pre-disturbance production levels would depend on the disturbed site's specific characteristics. Assuming revegetation actions are successful, the anticipated impacts to vegetation resources would be minimized and relatively short-term in nature (i.e., approximately 8 years).

4.8.1.2 Invasive Plants and Noxious Weeds

The introduction and/or spread of invasive plants and noxious weeds in the Project Area would occur under the Proposed Action. However, the county's proposed BMPs concerning such species would minimize the spread of weeds in the Project Area. Successful reclamation would further reduce the spread of weeds in the Project Area.

4.8.1.3 Special Status Plant Species

Special status plant species could be affected by loss or modification of occupied and/or suitable habitat, an increase in the spread of invasive and noxious weed species and an increase in fugitive dust levels during construction activities.

4.8.1.3.1 Threatened, Endangered, or Candidate Plant Species

Clay reed-mustard

Known occupied clay reed-mustard habitat is located approximately 1,325 feet west of the proposed ROW and known occurrences of plant individuals/groups are located 3,400 feet west of the proposed ROW (BLM 2008a). However, one portion of the proposed ROW is located within 300-feet of potential habitat that has not been fully surveyed. Based upon site visits, this section of the proposed ROW is separated from the potential habitat by a slight elevation rise. This topographic separation of the potential habitat from the surface disturbance would reduce the indirect impacts, including increased fugitive dust and soil destabilization, of the proposed project.

Based on the above information, implementation of the Proposed Action would result in a "***May Affect, is Not Likely to Adversely Affect***" determination for the federally-listed clay reed-mustard. The BLM has received concurrence from the USFWS with the above determination (see Appendix J).

Discovery Stipulation: Reinitiation of section 7 consultation with the USFWS would be sought immediately if any loss of plants or occupied habitat for clay reed-mustard is anticipated as a result of project activities.

Uinta Basin hookless cactus

No cacti were identified within 300-feet of the proposed project area. Therefore, no direct impacts to individual Uinta Basin hookless cactus would occur as a result of the Proposed Action.

Possible indirect negative impacts which may result from implementation of the Proposed Action include: the disturbance of potential and suitable habitat; increased competition for space, light, and nutrients with invasive and noxious weed species introduced and spread due to the Proposed Action; altered photosynthesis, respiration, and transpiration due to increased fugitive dust resulting from the surface disturbance and project related traffic; and reduced seed production due to the potential loss and fragmentation of suitable habitat for Uinta Basin hookless cactus's pollinators. Due to these indirect negative impacts, the Proposed Action warrants a "***May Affect, is Not Likely To Adversely Affect***" determination for Uinta Basin hookless cactus. The BLM has received concurrence from the USFWS with the above determination (see Appendix J).

Discovery Stipulation: Reinitiation of section 7 consultation with the USFWS would be sought immediately if any loss of plants or occupied habitat for Uinta Basin hookless cactus is anticipated as a result of project activities.

4.8.1.3.2 Bureau-sensitive plant species

Graham's beardtongue

BLM data identifies Graham's beardtongue habitat and individual plants/plant groups as being located adjacent to the existing Seep Ridge Road. Construction of the Proposed Action would directly remove approximately 70 Graham's beardtongue individuals and could indirectly affect approximately 1,240 Graham's beardtongue individuals located within 300 feet of the proposed ROW but would not be removed. Direct impacts include destruction of individual plants during surface-disturbing activities. Indirect impacts include affects to plants and pollinator species from fugitive dust during construction and prior to achieving successful reclamation, encroachment of noxious and invasive weed species into occupied and potential habitat. These impacts would be ameliorated by adherence to the recommended conservation measures agreed to by the USFWS and BLM (USFWS 2007) for Graham's beardtongue set out in Appendix E, and implementation of the reclamation and weed control plans (refer to Appendix C). Paving of the final Seep Ridge Road would result in long-term reduction in fugitive dust, creating a positive effect for the plants in or near the proposed ROW.

Adherence to the above-mentioned measures would reduce impacts to the Graham's beardtongue such that the Proposed Action "***May Affect, is Not Likely to Lead Towards the Federal Listing*** of the Graham's beardtongue. BLM has agreed to follow two additional conservation measures in as outlined below and discussed in Appendix J.

- A qualified botanist will be on site during construction to prevent direct destruction of plants to ensure that monitoring plots are not destroyed; and
- After all other conservation and mitigation measures are followed and if direct loss of plants cannot be avoided, the BLM will coordinate with the Service and/or Red Butte Gardens to collect plants in the right-of-way that may be destroyed by construction activities.

4.8.1.4 Forestry/Woodlands

Construction activities set out in the Proposed Action could likely involve approximately 215 acres of pinyon-juniper and 49 acres of montane brush/woodland communities. These lands may have areas of suitable woodland and/or forestry products. Surface disturbing activities in these communities would result in the direct removal of the woodlands and timber trees. This could result in a negligible loss of revenue to the federal government from wood cutting permits. To offset potential lost federal revenue

from commercial trees being removed in the construction areas of the Proposed Action, any marketable forestry products would be cut down in such a manner to allow utilization and the public notified that such forestry products are available.

4.8.2 ALTERNATIVE B – NO ACTION

4.8.2.1 General Vegetation

Under the No Action Alternative no new surface disturbance is anticipated within the existing ROW. Thus, the No Action Alternative would not result in direct impacts to vegetation resources. Fugitive dust control during regular maintenance activities would minimize impacts to roadside vegetation. Expected increases in vehicle traffic along the Seep Ridge Road would result in increased fugitive dust levels over the long-term, thus affecting the long-term health and viability of roadside vegetation.

4.8.2.2 Invasive Plants and Noxious Weeds

Under the No Action Alternative, the increased surface disturbance and opportunity for new infestations of invasive, non-native species would not occur. The county would be required to continue regular monitoring and treatment to control weeds within the existing ROW thus minimizing the presence of invasive and noxious weeds within the ROW corridor.

4.8.2.3 Special Status Plant Species

4.8.2.3.1 Threatened, Endangered, or Candidate Plant Species

Clay Reed-mustard

The current road alignment does not involve any occupied clay reed-mustard habitat, thus continued maintenance activities of the existing Seep Ridge Road would not result in direct or indirect impacts to this species. Based on this information, implementation of the No Action Alternative would result in a **No Effect** determination for the federally-listed clay reed-mustard.

Uinta Basin hookless cactus

The current road alignment does not involve any occupied Uinta Basin hookless cactus and there would be no future surface disturbance outside the current right-of-way. Therefore, continued maintenance activities of the existing Seep Ridge Road would not result in direct or indirect impacts to this species. Based on this information, implementation of the No Action Alternative would result in a **No Effect** determination for the threatened Uinta Basin hookless cactus.

4.8.2.3.2 Bureau-sensitive plant species

Graham Beardtongue

Under the No Action Alternative, direct impacts to Graham's beardtongue habitat would not occur. Indirect impacts would be greater than those proposed under Alternative A. Anticipated increases in vehicle traffic along the Seep Ridge Road from continued energy development operations, coupled with regular maintenance operations of the existing roadway would increase fugitive dust levels over the long-term. Indirect impacts to the Graham's beardtongue from fugitive dust are discussed above. The No Action Alternative would result in fewer acres of habitat and individuals being directly affected, but over

the long-term indirect impacts from fugitive dust would increase. Thus, actions in this alternative *May Affect, is Not Likely to Lead Towards the Federal Listing* of Graham’s beardtongue.

4.8.2.4 Forestry/Woodlands

Under the No Action Alternative, the expanded ROW and proposed upgrades would not be completed. Thus, no direct impact to woodlands and forestry resources would occur.

4.8.3 ALTERNATIVE C – BUCK CANYON TERMINUS

4.8.3.1 General Vegetation

Surface disturbance associated with the Alternative C would involve a total of approximately 290.4 acres. Approximately 102.6 acres would be involved with the paved road and other support structures and would not be reclaimed. Reclamation would be completed on about 166.8 acres (within the proposed ROW and parts of the existing road outside the proposed ROW that would be closed). Table 4.8.3-1 summarizes estimated maximum new surface disturbance by vegetation community, associated with Alternative C.

Table 4.8.3-1 Proposed Surface Disturbance, by Vegetation Community, for the Proposed Action

Vegetation Community	Estimated New Disturbance within Project Area (Acres)	Percent of Project Area
Mixed Desert Shrub	107.4	37
Wyoming Sagebrush	58.1	20
Pinyon-Juniper-Sage	124.9 ¹	43
Estimated Total	290.4²	100

¹Includes 2 acres outside of the proposed ROW for the proposed watering pond (reservoir).

²Does not include existing roadway surface (66 acres).

The Proposed Action would have both direct and indirect impacts on vegetation resources. Direct effects would include removal of vegetation, modification of species composition and structure, and fragmentation of vegetation communities. Indirect impacts may include increased potential for weed invasion, effects of fugitive dust on plants, increased exposure of soils to accelerated erosion, and degradation and loss of topsoil and soil microorganisms.

Specific actions set out under the Proposed Action, including reclamation of disturbed areas outside the running surface of the paved road, control of soil erosion, minimizing vegetation disturbance, dust abatement measures, and control of noxious weeds, would reduce impacts to vegetation communities in the Project Area. The ability of each vegetation community to successfully recover to pre-disturbance production levels would depend on the disturbed site’s specific characteristics. Assuming revegetation actions are successful, the anticipated impacts to vegetation resources would be minimized and relatively short-term in nature (i.e., approximately 8 years).

4.8.3.2 Invasive Plants and Noxious Weeds

The introduction and/or spread of invasive plants and noxious weeds under Alternative C would be less than Alternative A considering the length of Alternative C is 44% of Alternative A. Regardless, the county’s proposed BMPs concerning such species would minimize the spread of weeds in the Project Area. Successful reclamation would also further reduce the spread of weeds in the Project Area.

4.8.3.3 Special Status Plant Species

Special status plant species could be affected by loss or modification of occupied and/or suitable habitat, an increase in the spread of invasive and noxious weed species and an increase in fugitive dust levels during construction activities.

4.8.3.3.1 Threatened, Endangered, or Candidate Plant Species

Clay reed-mustard

Known occupied clay reed-mustard habitat is located approximately 1,325 feet west of the proposed ROW and known occurrences of plant individuals/groups are located 3,400 feet west of the proposed ROW (BLM 2008a). However, one portion of the proposed ROW is located within 300-feet of potential habitat that has not been fully surveyed. Based upon site visits, this section of the proposed ROW is separated from the potential habitat by a slight elevation rise. This topographic separation of the potential habitat from the surface disturbance would reduce the indirect impacts, including increased fugitive dust and soil destabilization, of the proposed project.

Based on the above information, implementation of the Proposed Action would result in a “*May Affect, is Not Likely to Adversely Affect*” determination for the federally-listed clay reed-mustard. The BLM has received concurrence from the USFWS with the above determination (see Appendix J).

Discovery Stipulation: Reinitiation of section 7 consultation with the USFWS would be sought immediately if any loss of plants or occupied habitat for clay reed-mustard is anticipated as a result of project activities.

Uinta Basin hookless cactus

No cacti were identified within 300-feet of the proposed project area. Therefore, no direct impacts to individual Uinta Basin hookless cactus would occur as a result of the Proposed Action.

Possible indirect negative impacts which may result from implementation of the Proposed Action include: the disturbance of potential and suitable habitat; increased competition for space, light, and nutrients with invasive and noxious weed species introduced and spread due to the Proposed Action; altered photosynthesis, respiration, and transpiration due to increased fugitive dust resulting from the surface disturbance and project related traffic; and reduced seed production due to the potential loss and fragmentation of suitable habitat for Uinta Basin hookless cactus’s pollinators. Due to these indirect negative impacts, the Proposed Action warrants a “*May Affect, is Not Likely To Adversely Affect*” determination for Uinta Basin hookless cactus. The BLM has received concurrence from the USFWS with the above determination (see Appendix J).

Discovery Stipulation: Reinitiation of section 7 consultation with the USFWS would be sought immediately if any loss of plants or occupied habitat for Uinta Basin hookless cactus is anticipated as a result of project activities.

4.8.3.3.2 Bureau-sensitive plant species

Graham Beardtongue

BLM data identifies Graham’s beardtongue habitat and individual plants/plant groups as being located adjacent to the existing Seep Ridge Road (BLM 2008a). Construction of the Proposed Action would

directly remove approximately 5 Graham's beardtongue individuals and could indirectly affect approximately 60 Graham's beardtongue individuals located within 300 feet of the proposed ROW but would not be removed. Direct impacts include destruction of individual plants during surface-disturbing activities. Indirect impacts include affects to plants and pollinator species from fugitive dust during construction and prior to achieving successful reclamation, encroachment of noxious and invasive weed species into occupied and potential habitat. These impacts would be ameliorated by adherence to the recommended conservation measures agreed to by the USFWS and BLM (USFWS 2007) for Graham's beardtongue set out in Appendix E, and implementation of the reclamation and weed control plans (refer to Appendix C). Paving of the final Seep Ridge Road would result in long-term reduction in fugitive dust, creating a positive effect for the plants in or near the proposed ROW.

Adherence to the above-mentioned measures would reduce impacts to the Graham beardtongue such that the Proposed Action *May Affect, is not Likely to Lead Towards the Federal Listing* of the Graham's beardtongue. BLM has agreed to follow two additional conservation measures in as outlined below and discussed in Appendix J.

- A qualified botanist will be on site during construction to prevent direct destruction of plants to ensure that monitoring plots are not destroyed; and
- After all other conservation and mitigation measures are followed and if direct loss of plants cannot be avoided, the BLM will coordinate with the Service and/or Red Butte Gardens to collect plants in the right-of-way that may be destroyed by construction activities.

4.8.3.4 Forestry/Woodlands

Construction activities set out in the Proposed Action could likely involve approximately 71.5 acres of pinyon-juniper-sage habitat. These lands may have areas of suitable woodland and/or forestry products. Surface disturbing activities in these communities would result in the direct removal of the woodlands and timber trees. This could result in a negligible loss of revenue to the federal government from wood cutting permits. To offset potential lost federal revenue from commercial trees being removed in the construction areas of the Proposed Action, any marketable forestry products would be cut down in such a manner to allow utilization and the public notified that such forestry products are available.

4.8.4 MITIGATION MEASURES

- To offset potential lost federal revenue from commercial trees being removed in the construction areas of the Proposed Action, any marketable forestry products will be cut down in such a manner to allow utilization.

4.9 WILDLIFE AND FISHERIES, INCLUDING SPECIAL STATUS ANIMAL SPECIES

4.9.1 ALTERNATIVE A – PROPOSED ACTION

Principal impacts to wildlife from the Proposed Action include: direct loss, degradation and/or fragmentation of wildlife habitats, displacement of wildlife species in traditional use areas and along historic migration routes, and an increase in the potential for collision between wildlife and motor vehicles due to an increase in speed and traffic.

4.9.1.1 General Wildlife

Estimated total maximum surface disturbance from the Proposed Action within the proposed Seep Ridge Road ROW would be approximately 613 acres. This development would reduce habitat available for a variety of common wildlife species until successful reclamation occurs on approximately 379.6 acres. Habitat disturbance would be expected to have a minor to moderate impacts on general wildlife species because many of the species (e.g., cottontails, jackrabbits, coyotes, cougars, bear, etc.) are habitat generalists, meaning they are not tightly restricted to specific habitat types; and, many of the wildlife populations within the Project Area have likely adapted to the existing road and its associated traffic. Project implementation would increase habitat loss and habitat fragmentation in the Project Area.

Disturbances from improvements to the existing roadway could displace wildlife from habitats in construction areas. Construction activities could last as long as 6 years; concentrating on specific segments of the roadway, and would not involve the entire roadway. When displaced, individuals could move into less suitable habitats or into habitats where inter- and intra-specific competition for resources may occur, resulting in subsequent adverse effects and general distress. Such displacement could affect general wildlife in the Project Area during the multi-year construction periods and until the disturbed areas are successfully reclaimed. After successful reclamation and revegetation, resultant vegetation would encourage general wildlife species to return to their historic use areas would occur. As such although general wildlife species would be affected by the Proposed Action, the impacts would be temporary in scale and duration.

4.9.1.2 Big Game

The impacts from the Proposed Action would be similar for all big game species in the Project Area. Species-specific habitat losses for UDWR-designated big game ranges associated with the Proposed Action are listed in Section 3.9.2.2 for mule deer and Section 3.9.2.3 for elk. Direct impacts to big game include loss of habitat and subsequent displacement to other, possibly less suitable areas. A total of 403 acres (less than 1 percent) of mule deer habitat and 397 acres (less than 1 percent) of elk habitat in the greater Book Cliffs area would be involved with the Proposed Action. Implementation of reclamation actions outlined in Appendix C would return or set in motion the restoration of approximately 379.6 acres of proposed disturbance. The reclamation would restore mule deer and elk habitat and enable the animals to return and use their historic ranges.

Habitat loss and displacement are not limited to actual areas of vegetation removed by surface-disturbing activities. Another indirect impact to big game includes displacement/avoidance by big game caused by the increased presence of humans during construction activities. Studies have shown that mule deer will generally avoid human-related activities, such as construction, and therefore, the amount of suitable habitat loss could be greater than the acreage that is eventually developed (D'Eon and Serrouya 2005; Sawyer et al. 2006). Thus, construction activities associated with the Proposed Action could result in a temporary displacement of big game from their seasonal habitats. The proposed construction would be extended over a period of 6 years, thus only portions of the ROW would be directly involved with construction activities. Reclamation actions would be completed at the conclusion of construction activities for the segments constructed each year. Thus human presence would be concentrated in certain areas along the ROW, affording big game an opportunity to avoid possible interaction with humans.

As multiple big game herds are currently below UDWR population objectives, the above-mentioned impacts could potentially contribute to other factors already affecting big game populations in the Project Area. However, as surface disturbance associated with the Proposed Action would be localized and would be minimal in relation to the extent of similar habitats across the greater Book Cliffs area; impacts

associated with the Proposed Action would not likely alter current big game population levels within the Project Area.

Other direct impacts to big game wildlife include a potential for injury or mortality caused by the potential for collisions between wildlife and motor vehicles on the Seep Ridge Road. The Seep Ridge Road, from about Buck Canyon south to the Book Cliff Divide transects a key mule deer migration route. This historic migration route serves to concentrate the presence of mule deer traveling to their seasonal ranges. Proposed improvements to the Seep Ridge Road between Buck Canyon and the Uintah County line could result in increased animal/vehicle collisions and animal mortalities. Although there is no data on reported collisions on the road, it is reasonable to expect the Proposed Action would increase the possibility of such collisions due to changing the speed from 35 to 55 mph. The number and severity of these impacts would depend on the availability of habitats within and outside the Project Area; the sensitivity of the wildlife species to human activities; seasonal and daily timing of construction activities and site-specific topography (e.g., visually-obscured construction sites may affect nearby wildlife less than construction sites in full view). Relocation of water reservoirs and removing existing water sources presently near the road would reduce the numbers of wildlife drawn to the road in search of water; however, migrating big game species would continue to cross the road to reach their seasonal ranges. In 2009 the county entered into an interlocal cooperative agreement with UDWR (refer to Appendix H). This agreement sets out the mutual obligations to study mule deer migration patterns along the Seep Ridge Road. Should the study reveal an unacceptable number of animal/vehicle collisions, then additional specific mitigation measures that may include speed reduction, seasonal adjustments, fencing crossing structures or other appropriate measures would be discussed and implemented. As multiple big game herds are currently below UDWR population objectives, the above-mentioned impacts could potentially contribute to other factors already affecting big game populations in the Project Area, including the existing roadway.

Seasonal timing restrictions outlined in the VFO Approved RMP would apply to portions of mule deer and elk habitat in the Project Area to minimize potential impacts resulting from project activities. Specifically, no surface disturbance activities that could result in adverse impacts to deer or elk would be allowed within crucial time periods for specific habitats (BLM 2008a). Construction timing restrictions are described in detail in Section 4.9.4, Mitigation Measures.

4.9.1.3 Raptors

Implementation of the Proposed Action could affect nesting and breeding raptors that utilize the Project Area. Direct and indirect impacts to raptors may include temporary displacement from suitable habitats during the breeding season due to increased noise levels and visual disturbances on the landscape and a reduction in habitat for prey species due to habitat loss.

Surface-disturbing activities in close proximity (e.g., ½-mile) of an active raptor nest could lead to temporary displacement from nesting sites, avoidance of affected areas, and deterrence from establishing other nesting sites. Displacement could lead to nest failure or nest abandonment, thereby affecting the breeding pair and their annual productivity. Steidl and Anthony (2000) suggest that the greatest energetic costs from disturbance occur in nestlings, potentially decreasing overall reproductive success. Displacement could also lead to increased use of adjacent habitats, which could lead to increased inter- and intra-specific competitions for resources. Surface-disturbing activities in the proximity of an active golden eagle nest could potentially disturb breeding and nesting activities. However, as increased noise levels and visual disturbances associated with construction would be localized and short-term, displacement to adjacent habitats would likely be temporary in nature and would not likely alter the productivity of current raptor populations within the Project Area. In addition, although human activity has been shown to adversely impact breeding raptors, some evidence of raptor habituation to human-

induced disturbances has also been documented (Anderson et al. 1989; Steidl and Anthony 2000; Rodriguez-Estrella et al. 1998). In addition, construction activities may discourage utilization of or directly impact the two red-tailed hawk nests located within the Project Area, and the two red-tailed hawk nests and the one golden eagle nest that were identified within 0.5 miles of the Project Area boundary.

The county's reclamation plan (refer to Appendix C) outlines a "reclaim-as-they-go" strategy. The Proposed Action would result in the loss of approximately 613 total acres of wildlife habitat. However, the reclamation strategy would minimize the total number of wildlife habitat acres disturbed during any one project year. Reclamation actions would maximize the opportunities for successful reconstruction of suitable wildlife habitat, and the restoration of wildlife use patterns. Thus the impacts to wildlife habitat from implementation of the Proposed Action would result in the temporary loss of suitable habitat over a shortened time due to implementation of the reclamation plan. There would be a long-term loss of wildlife habitat due to the paving of approximately 233.4 acres. This long-term loss of wildlife habitat is negligible in terms of the available suitable habitat adjacent to the project area and the greater Book Cliffs.

4.9.1.4 Migratory Birds

Impacts to migratory birds in the Project Area from the Proposed Action would be similar for all migratory bird species, but would vary depending on loss of habitat types and the species' sensitivity to disturbance. For the purposes of impact analyses in this EA, impacts to migratory birds within the Project Area are discussed together. The Proposed Action would involve a total of approximately 813 acres. Successful reclamation in the vegetation communities not immediately associated with the running surface of the road and its associated ditches and stormwater control devices, as well as control of noxious weeds and invasive species, would reduce the loss of nesting and foraging habitats for migratory birds over time.

Other impacts associated with the implementation of the Proposed Action would be dependent upon seasonal timing of construction activities. Construction activities, including visual and noise intrusions during the spring and early summer months would have the greatest disruption to migratory bird breeding and nesting activities. These impacts include displacement and possible abandonment of nest sites, thus reducing overall species productivity (Renfrew et al. 2005). Section 2.1.5.5 outlines actions that the county would implement to avoid/minimize impacts to raptor species. Implementation of the spatial and temporal restrictions for an occupied raptor nest would have a positive effect on any migratory birds occupying the area. Due to the varied topographic and vegetative patterns in and surrounding the Project Area, there is suitable nesting and foraging habitat for migratory birds outside the construction zones associated with the Seep Ridge Road. Thus the impacts to migratory birds from the Proposed Action would be short-term in scope and minor in extent.

4.9.1.5 Special Status Wildlife and Fish Species

Special Status Mammals Species

White-tailed Prairie Dog

Implementation of the Proposed Action could result in direct adverse impacts to the white-tailed prairie dog colonies located in or adjacent to the Project Area. These impacts include: construction activities and increased human presence during the period April – July 15, when females and pups are most vulnerable (Seglund 2004) and habitat modification/fragmentation due to loss of vegetation. However, due to the scattered burrows and poorly developed colonies involved with the Proposed Action, the proposed surface disturbance could result in minimal loss of white-tailed prairie dogs, and minimal impacts to their habitat.

Potential indirect effects to the white-tailed prairie dog include potential increased hunting pressure from increased human visitation to the habitat areas resulting from paving the roadway. Gordon et al. (2003) found that shooting pressure was greatest at prairie dog colonies within easy road access as compared to more remote colonies. The planned improvements to the Seep Ridge Road are expected to increase human visitation to the Project Area. However, due to the scattered burrow and poorly developed white-tailed prairie dog colonies involved with the Proposed Action, there is little likelihood of increased hunting pressure on white-tailed prairie dogs in or adjacent to the Project Area. As such, the Proposed Action may affect white-tailed prairie dogs, but would not likely result in a trend towards federal listing of the species.

Bats

Implementation of the Proposed Action could disturb potential foraging habitat for bat species that may utilize the Project Area. As traffic within the Project Area is expected to continue to increase, roosting sites associated with nearby Willow Creek and other cliff areas adjacent to the ROW could be impacted and potentially abandoned. In addition, the loss of potential prey species and decreased availability and use of certain habitats through displacement, habitat fragmentation, and habitat modification could occur. However, with implementation of the reclamation plan and as extensive suitable prey habitat occurs outside the Project Area, these impacts would likely be minimal.

Special Status Bird Species

Greater Sage Grouse

Existing UDWR data reveals that active leks are located several miles east of the Seep Ridge Road. Bird populations affiliated with these active leks are low. However, hens and their broods affiliated with these leks are known to cross the Seep Ridge Road near the Willow Creek Overlook (near mile markers 46 and 47). The surface disturbance and increased human presence during construction activities associated with the Proposed Action and the anticipated increased vehicle use along the Seep Ridge Road could impact sage grouse by reducing brood-rearing habitat and disrupting historical bird movement across the Seep Ridge Road.

Vegetation removal within sagebrush communities of the Project Area would result in the temporary loss of sage grouse habitat. Implementation of reclamation and weed control actions as set out in Appendix C after completion of construction activities in the Willow Creek Overlook area would restore the habitat with a minimum of lost time. Improvements to the Seep Ridge Road would likely increase the number of vehicles on the road, thus increasing the likelihood for bird/vehicle collisions. However, due to the low number of birds associated with the East Bench leks, the likelihood of bird/vehicle collisions is low. As such, the Proposed Action may affect individual sage grouse, but would not likely result in a trend towards federal listing of the species.

Golden Eagle

Implementation of the Proposed Action could impact both breeding and wintering golden eagles, depending on the location of surface-disturbing activities and surface facilities relative to occupied territories, active or inactive nest sites, or wintering areas. Surface-disturbing activities in the proximity of an active golden eagle nest could potentially disturb breeding and nesting activities. Temporary displacement of eagles or avoidance of nesting sites would be caused by increased human activity, traffic, and traffic levels. Since golden eagles often alternate between nest sites within a breeding territory, any surface facilities where ongoing traffic or human presence occurs could prevent inactive nests from being

used in the future. Potential long-term negative effects due to loss of raptor and prey habitat area anticipated to be minimal due to the majority of the construction activities taking place within the existing road ROW. As previously stated, no golden eagle nests were identified within the Project Area, and a single nest occurring within 0.5 mile of the Project Area was documented by the BLM. Golden eagles are known to forage within the vicinity of the Project Area. Potential increased animal/vehicle collisions could result in increased carrion along the roadway. The increased carrion could attract a higher number of golden eagles to the roadway which could then elevate the existing threat of golden eagle/vehicle collisions. Impacts to golden eagles would be reduced or fully negated with the implementation for the county's commitments set out in Section 2.1.5.5.

Vegetation removal associated with the Proposed Action would result in the indirect loss of about 613 acres of prey species habitat (e.g., ground squirrels, prairie dogs, and rabbits). The loss of some prey species may limit foraging opportunities for individual eagles. In addition, golden eagles may avoid hunting grounds where construction activities are taking place. Under the Proposed Action, reclamation efforts, in conjunction with implementation of a weed control plan, could somewhat restore prey habitat losses for golden eagles over time.

Burrowing Owl

As previously stated, burrowing owl surveys have not been completed for the Project Area. Suitable nesting habitat has been identified within the Project Area and immediate vicinity (northern portion of the Project Area, in prairie dog colonies). However, existing prairie dog habitat is limited and population numbers are low within the existing scattered colonies. If burrowing owls occur within the Project Area, impacts from the Proposed Action could result in temporary displacement of owls or their avoidance of ground nests in the vicinity of construction activities. Overall, the Proposed Action may affect individual burrowing owls through habitat loss, displacement, mortality, or loss of prey base, but would not likely result in a trend towards federal listing of the species. In addition, potential impacts to burrowing owls would be reduced or fully negated with the implementation of the county commitments in Section 2.1.5.5.

Special Status Fish Species

The Proposed Action would result in direct impacts to the Colorado River fish and their habitats from water depletions from the White and Green Rivers and increased sediment to these same rivers.

Implementation of the Proposed Action could result in direct impacts to the endangered Colorado River fish from increased sediment in the Green and White Rivers. An estimated total of approximately 480 tons of sediment could be produced annually during the 6 years of construction and 2 years following reclamation activities. An unquantifiable portion of that sediment volume could enter the White River, approximately 12 miles to the north of the Project Area. Indirect affects would also be realized from water depletions in the Colorado River Watershed.

Paving the Seep Ridge Road and implementation of measures to ensure continued floodplain integrity associated with the West and East Forks of Cottonwood Wash, such as utilizing appropriate erosion control measures, diverting stormwater runoff via water dissipating devices (i.e., water turnouts) would reduce the amount of sediment entering the drainages and ultimate the White and Green Rivers (refer to Section 2.1.1).

Sediment loading has not yet been identified as an issue of concern within the existing roadway. However, due to the existing unpaved road surface and the lack of adequate sediment control features, there is currently a threat of future adverse impacts from sedimentation and erosion. Upgrading the existing road to a paved surface and including the sediment-controlling design features previously

mentioned are anticipated to improve the existing conditions. Therefore, the Proposed Action would have minimal impacts to the federally-listed fish species occurring in Uintah County.

Fugitive dust suppression on the proposed upgrades to the road would require approximately 426 acre-ft of water over the 6 years of construction (or approximately 71 acre-ft per year). The use of this water would constitute a water-depletion. Needed water would be acquired from an existing historic source. Water depletions from the White and Green Rivers can reduce the rivers' ability to create and maintain the physical habitat (areas inhabited or potentially habitable for spawning, development of fish larvae, feeding, or serving as corridors between these areas) and the biological environment required by the endangered Colorado River fish. Water depletions can also contribute to alterations in flow regimes that favor non-native fish.

On January 21-22, 1988, the Secretary of the Interior, the Governors of Wyoming, Colorado, and Utah; and, the Administrator of the Western Area Power Administration were signers of a Cooperative Agreement to implement the "Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin" (Recovery Program (Service 1987)). An objective of the Recovery Program was to identify reasonable and prudent alternatives that would ensure the survival and recovery of the listed species while providing for new water development in the Upper Colorado River Drainage Basin.

The water used for this project would be obtained from the Uintah Water Conservancy District which is permitted as a historic depletion (permitted prior to January 1988). The Service addresses new and historic depletions differently under the Section 7 agreement of March 11, 1993. Historic depletions, regardless of size, do not pay a depletion fee to the Recovery Program.

Therefore, it has been determined that implementation of the Proposed Action "***May Affect, is Likely to Adversely Affect***" the federally-listed fish species occurring in Uintah County due to utilization of a water source within the Green River Basin (Upper Colorado River Basin). In order to address depletion (and other) impacts on the endangered Colorado River fish; a Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) was initiated on January 22, 1988. Under the 1988 Recovery Program, any water depletions from tributary waters within the Colorado River drainage are considered to "*jeopardize the continued existence*" of these fish. In order to further define and clarify the recovery processes in the Recovery Program, a Section 7 agreement was implemented on October 15, 1993, by the Recovery Program participants. Because the water source for the Proposed Action is a historic source (i.e., existed prior to January 1988), consultation on the depletion was included in the 1993 agreement. Therefore, no further consultation is needed in terms of water depletion for this project. BLM has received concurrence from the USFWS with the above determination (see Appendix J).

4.9.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative the construction activities set out in the Proposed Action would not occur. Potential impacts to general wildlife species, including big game, raptors, and migratory birds from continued maintenance operations conducted on the Seep Ridge Road remain at current levels associated with the existing roadway.

Special Status Fish Species

Regular maintenance activities on the Seep Ridge would include installation of needed storm water control devices and normal maintenance actions to the road itself. To control fugitive dust during these annual activities, approximately 40 acre-ft of water could be needed. As with the Proposed Action needed water would be acquired from the Uintah Water Conservancy District, an historic source.

Sediment produced from maintenance actions on the native material roadway would enter drainages associated with existing Seep Ridge Road ROW during flood events. This sediment would enter the ephemeral drainages in the Project Area and some quantity of this sediment would enter the larger ephemeral drainages, such as Cottonwood Wash, Sand Wash, Sweet Water Canyon and Bitter Creek on the east side of the road, and Sunday School Canyon on the west side of the road, and would ultimately be deposited into the White and Green Rivers. The county's implementation of storm water control devices and road design features during regular maintenance activities would minimize sediment coming from the existing road.

As previously mentioned sediment loading has not yet been identified as an issue with the existing road. However, the existing road surface material, required annual maintenance activities, and the lack of adequate sediment control features increase the potential for sediment to enter the Green and White Rivers. In addition, the annual maintenance activities require the use of historic water depletions. There is has been determined that the No Action Alternative *"May Affect, is Likely to Adversely Affect"* the federally-listed fish species occurring in Uintah County. BLM has received concurrence from the USFWS with the above determination (see Appendix J).

4.9.3 ALTERNATIVE C – BUCK CANYON TERMINUS

Principal impacts to wildlife from the Proposed Action include: direct loss, degradation and/or fragmentation of wildlife habitats, displacement of wildlife species in traditional use areas and along historic migration routes, and an increase in the potential for collision between wildlife and motor vehicles due to an increase in speed and traffic.

4.9.3.1 General Wildlife

Estimated total maximum surface disturbance from the Alternative C within the proposed Seep Ridge Road ROW would be approximately 357.6 acres. This development would reduce habitat available for a variety of common wildlife species until successful reclamation occurs. Habitat disturbance would be expected to have minor to moderate impacts on general wildlife species because many of the species (e.g., cottontails, jackrabbits, coyotes, cougars, bear, etc.) are habitat generalists, meaning they are not tightly restricted to specific habitat types; and, many of the wildlife populations within the Project Area have likely adapted to the existing road and its associated traffic. Project implementation would increase habitat loss and habitat fragmentation in the Project Area.

Disturbances from improvements to the existing roadway could displace wildlife from habitats in construction areas. Construction activities could last as long as 3 years; concentrating on specific segments of the roadway, and would not involve the entire roadway. When displaced, individuals could move into less suitable habitats or into habitats where inter- and intra-specific competition for resources may occur, resulting in subsequent adverse effects and general distress. Such displacement could affect general wildlife in the Project Area during the multi-year construction periods and until the disturbed areas are successfully reclaimed. After successful reclamation and revegetation, resultant vegetation would encourage general wildlife species to return to their historic use areas would occur. As such although general wildlife species would be affected by the Proposed Action, the impacts would be temporary in scale and duration.

4.9.3.2 Big Game

The impacts from implementing Alternative C would largely affect pronghorn antelope as all or most crucial habitat for mule deer and elk habitat lie south of the Buck Canyon terminus. Implementation of

reclamation actions outlined in Appendix C would return or set in motion the restoration of some pronghorn habitat, allowing animals to return and use their historic ranges.

Habitat loss and displacement are not limited to actual areas of vegetation removed by surface-disturbing activities. Another indirect impact to antelope includes displacement/avoidance by big game caused by the increased presence of humans during construction activities. Studies have shown that mule deer will generally avoid human-related activities, such as construction, and therefore, the amount of suitable habitat loss could be greater than the acreage that is eventually developed (D'Eon and Serrouya 2005; Sawyer et al. 2006). Thus, construction activities associated with the Proposed Action could result in a temporary displacement of big game from their seasonal habitats. The proposed construction would be extended over a period of 3 years, thus only portions of the ROW would be directly involved with construction activities. Reclamation actions would be completed at the conclusion of construction activities for the segments constructed each year. Thus human presence would be concentrated in certain areas along the ROW, affording big game an opportunity to avoid possible interaction with humans.

Other direct impacts to big game species could include injury or mortality caused by collisions between wildlife and motor vehicles on the Seep Ridge Road. Although there is no data on reported collisions on the road and antelope, it is reasonable to expect the Proposed Action would increase the possibility of such collisions due to changing the speed from 35 to 55 mph. The number and severity of these impacts would depend on the availability of habitats within and outside the Project Area; the sensitivity of the wildlife species to human activities; seasonal and daily timing of construction activities and site-specific topography (e.g., visually-obscured construction sites may affect nearby wildlife less than construction sites in full view). Relocation of water reservoirs and removing existing water sources presently near the road would reduce the numbers of wildlife drawn to the road in search of water; however, migrating big game species would continue to cross the road to reach their seasonal ranges.

As multiple big game herds, mainly consisting of mule deer, Rocky Mountain elk, pronghorn antelope, and American bison, are currently below UDWR population objectives, the above-mentioned impacts could potentially contribute to other factors already affecting big game populations in the Project Area. However, surface disturbance associated with the Alternative C would be localized and would be minimal in relation to the extent of similar habitats across the greater Book Cliffs area. The impacts from implementing Alternative C would be less than that of the Proposed Action. Impacts associated with Alternative C would not likely alter current big game population levels within the Project Area.

4.9.3.3 Raptors

Implementation of Alternative C could affect nesting and breeding raptors that utilize the Project Area. Direct and indirect impacts to raptors may include temporary displacement from suitable habitats during the breeding season due to increased noise levels and visual disturbances on the landscape and a reduction in habitat for prey species due to habitat loss.

Under Alternative C the BLM data identifies two golden eagle and four red-tailed hawk nests within ½-mile of the Project Area. Surface-disturbing activities in close proximity (e.g., ½-mile) of an active raptor nest could lead to temporary displacement from nesting sites, avoidance of affected areas, and deterrence from establishing other nesting sites. Displacement could lead to nest failure or nest abandonment, thereby affecting the breeding pair and their annual productivity. Steidl and Anthony (2000) suggest that the greatest energetic costs from disturbance occur in nestlings, potentially decreasing overall reproductive success. Displacement could also lead to increased use of adjacent habitats, which could lead to increased inter- and intra-specific competitions for resources. Surface-disturbing activities in the proximity of active raptor nests could potentially disturb breeding and nesting activities. However, as increased noise levels and visual disturbances associated with construction would be localized and short-

term, displacement to adjacent habitats would likely be temporary in nature and would not likely alter the productivity of current raptor populations within the Project Area. In addition, although human activity has been shown to adversely impact breeding raptors, some evidence of raptor habituation to human-induced disturbances has also been documented (Anderson et al. 1989; Steidl and Anthony 2000; Rodriguez-Estrella et al. 1998). Section 2.1.5.5 outlines actions that the county would implement to avoid/minimize impacts to raptor species. Implementation of the spatial and temporal restrictions for an occupied raptor nest would reduce or completely eliminate nest abandonment or failure.

The county's reclamation plan (refer to Appendix C) outlines a "reclaim-as-they-go" strategy. The Proposed Action would result in the loss of approximately 357.6 total acres of wildlife habitat. However, the reclamation strategy would minimize the total number of wildlife habitat acres disturbed during any one project year. Reclamation actions would maximize the opportunities for successful reconstruction of suitable wildlife habitat, and the restoration of wildlife use patterns. Thus the impacts to wildlife habitat from implementation of the Proposed Action would result in the temporary loss of suitable habitat over a shortened time due to implementation of the reclamation plan. This long-term loss of wildlife habitat is negligible in terms of the available suitable habitat adjacent to the project area and the greater Book Cliffs.

4.9.3.4 Migratory Birds

Impacts to migratory birds in the Project Area from implementation of Alternative C would be similar for all migratory bird species, but would vary depending on loss of habitat types and the species' sensitivity to disturbance. For the purposes of impact analyses in this EA, impacts to migratory birds within the Project Area are discussed together. The Proposed Action would involve a total of approximately 357.6 acres. Successful reclamation in the vegetation communities not immediately associated with the running surface of the road and its associated ditches and stormwater control devices, as well as control of noxious weeds and invasive species, would reduce the loss of nesting and foraging habitats for migratory birds over time.

Other impacts associated with the implementation of the Proposed Action would be dependent upon seasonal timing of construction activities. Construction activities, including visual and noise intrusions during the spring and early summer months would have the greatest disruption to migratory bird breeding and nesting activities. These impacts include displacement and possible abandonment of nest sites, thus reducing overall species productivity (Renfrew et al. 2005). Section 2.1.5.5 outlines actions that the county would implement to avoid/minimize impacts to raptor species. Implementation of the spatial and temporal restrictions for an occupied raptor nest would have a positive effect on any migratory birds occupying the area. Due to the varied topographic and vegetative patterns in and surrounding the Project Area, there is suitable nesting and foraging habitat for migratory birds outside the construction zones associated with the Seep Ridge Road. Thus the impacts to migratory birds from the Proposed Action would be short-term in scope and minor in extent.

4.9.3.5 Special Status Wildlife and Fish Species

Special Status Mammals Species

White-tailed Prairie Dog

Implementation of the Proposed Action could result in direct adverse impacts to the white-tailed prairie dog colonies located in or adjacent to the Project Area. These impacts include: construction activities and increased human presence during the period April – July 15, when females and pups are most vulnerable (Seglund 2004) and habitat modification/fragmentation due to loss of vegetation. However, due to the

scattered burrows and poorly developed colonies involved within the areas proposed under Alternative C, the proposed surface disturbance could result in minimal loss of white-tailed prairie dogs, and minimal impacts to their habitat.

Potential indirect effects to the white-tailed prairie dog include potential increased hunting pressure from increased human visitation to the habitat areas resulting from paving the roadway. Gordon et al. (2003) found that shooting pressure was greatest at prairie dog colonies within easy road access as compared to more remote colonies. The planned improvements to the Seep Ridge Road are expected to increase human visitation to the Project Area. However, due to the scattered burrow and poorly developed white-tailed prairie dog colonies involved within the areas proposed under Alternative C, there is little likelihood of increased hunting pressure on white-tailed prairie dogs in or adjacent to the Project Area. As such, implementation of Alternative C may affect white-tailed prairie dogs, but would not likely result in a trend towards federal listing of the species.

Bats

Implementation Alternative C could disturb potential foraging habitat for bat species that may utilize the Project Area. As traffic within the Project Area is expected to continue to increase, roosting sites associated with nearby Willow Creek and other cliff areas adjacent to the ROW could be impacted and potentially abandoned. In addition, the loss of potential prey species and decreased availability and use of certain habitats through displacement, habitat fragmentation, and habitat modification could occur. However, with implementation of the reclamation plan and as extensive suitable prey habitat occurs outside the Project Area, these impacts would likely be minimal.

Special Status Bird Species

Greater Sage Grouse

Existing UDWR data reveals that active leks are located several miles east and south of the Seep Ridge Road. Bird populations affiliated with these active leks have been decreasing over the last decade. However, hens and their broods affiliated with these leks are known to cross the Seep Ridge Road near the Willow Creek Overlook (near mile markers 46 and 47). The surface disturbance and increased human presence during construction activities associated with Alternative C and the anticipated increased vehicle use along the Seep Ridge Road could impact sage grouse by reducing brood-rearing habitat and disrupting historical bird movement across the Seep Ridge Road.

Vegetation removal within sagebrush communities of the Project Area would result in the temporary loss of sage grouse habitat. Implementation of reclamation and weed control actions as set out in Appendix C after completion of construction activities in the Willow Creek Overlook area would restore the habitat with a minimum of lost time. Improvements to the Seep Ridge Road would likely increase the number of vehicles on the road, thus increasing the likelihood for bird/vehicle collisions. However, due to the low number of birds associated with the East Bench leks (east of the Project Area), the likelihood of bird/vehicle collisions is low. As such, the Proposed Action may affect individual sage grouse, but would not likely result in a trend towards federal listing of the species.

Golden Eagle

Implementation of Alternative C could impact both breeding and wintering golden eagles, depending on the location of surface-disturbing activities and surface facilities relative to occupied territories, active or inactive nest sites, or wintering areas. Surface-disturbing activities in the proximity of an active golden eagle nest could potentially disturb breeding and nesting activities. Temporary displacement of eagles or

avoidance of nesting sites would be caused by increased human activity, traffic, and traffic levels. Since golden eagles often alternate between nest sites within a breeding territory, any surface facilities where ongoing traffic or human presence occurs could prevent inactive nests from being used in the future. Potential long-term negative effects due to loss of raptor and prey habitat area anticipated to be minimal due to the majority of the construction activities taking place within the existing road ROW. The BLM has identified two golden eagle nests within ½-mile of the Project Area; however, both nests have been inactive for many consecutive years. Golden eagles are known to forage within the vicinity of the Project Area. Potential increased animal/vehicle collisions could result in increased carrion along the roadway. The increased carrion could attract a higher number of golden eagles to the roadway during foraging which could then elevate the existing threat of raptor/vehicle collisions. Impacts to golden eagles would be reduced or fully negated with the implementation for the county's commitments set out in Section 2.1.5.5.

Vegetation removal associated with Alternative C would result in the indirect loss of about 357.6 acres of prey species habitat (e.g., ground squirrels, prairie dogs, and rabbits). The loss of some prey species may limit foraging opportunities for individual eagles. In addition, golden eagles may avoid hunting grounds where construction activities are taking place. Under Alternative C, reclamation efforts, in conjunction with implementation of a weed control plan, could somewhat restore prey habitat losses for golden eagles over time.

Burrowing Owl

As previously stated, burrowing owl surveys have not been completed for the Project Area. Suitable nesting habitat has been identified within the Project Area and immediate vicinity (northern portion of the Project Area, in prairie dog colonies). However, existing prairie dog habitat is limited and population numbers are low within the existing scattered colonies. If burrowing owls occur within the Project Area, impacts from the Proposed Action could result in temporary displacement of owls or their avoidance of ground nests in the vicinity of construction activities. Overall, the Proposed Action may affect individual burrowing owls through habitat loss, displacement, mortality, or loss of prey base, but would not likely result in a trend towards federal listing of the species. In addition, potential impacts to burrowing owls would be reduced or fully negated with the implementation of the county commitments in Section 2.1.5.5.

Special Status Fish Species

The Proposed Action would result in direct impacts to the Colorado River fish and their habitats from water depletions from the White and Green Rivers and increased sediment to these same rivers.

Implementation of the Proposed Action could result in direct impacts to the endangered Colorado River fish from increased sediment in the Green and White Rivers. An estimated total of approximately 480 tons of sediment could be produced annually during the 3 years of construction and 2 years following reclamation activities. An unquantifiable portion of that sediment volume could enter the White River, approximately 12 miles to the north of the Project Area. Indirect affects would also be realized from water depletions in the Colorado River Watershed.

Paving the Seep Ridge Road and implementation of measures to ensure continued floodplain integrity associated with the West and East Forks of Cottonwood Wash, such as utilizing appropriate erosion control measures, diverting stormwater runoff via water dissipating devices (i.e., water turnouts) would reduce the amount of sediment entering the drainages and ultimate the White and Green Rivers (refer to Section 2.1.1).

Sediment loading has not yet been identified as an issue of concern within the existing roadway. However, due to the existing unpaved road surface and the lack of adequate sediment control features, there is currently a threat of future adverse impacts from sedimentation and erosion. Upgrading the existing road to a paved surface and including the sediment-controlling design features previously mentioned are anticipated to improve the existing conditions. Therefore, the Proposed Action would have minimal impacts to the federally-listed fish species occurring in Uintah County.

Fugitive dust suppression on the proposed upgrades to the road would require approximately 186 acre-ft of water over the 3 years of construction (or approximately 62 acre-ft per year). The use of this water would constitute a water-depletion. Needed water would be acquired from an existing historic source. Water depletions from the White and Green Rivers can reduce the rivers' ability to create and maintain the physical habitat (areas inhabited or potentially habitable for spawning, development of fish larvae, feeding, or serving as corridors between these areas) and the biological environment required by the endangered Colorado River fish. Water depletions can also contribute to alterations in flow regimes that favor non-native fish.

On January 21-22, 1988, the Secretary of the Interior, the Governors of Wyoming, Colorado, and Utah; and, the Administrator of the Western Area Power Administration were signers of a Cooperative Agreement to implement the "Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin" (Recovery Program (Service 1987)). An objective of the Recovery Program was to identify reasonable and prudent alternatives that would ensure the survival and recovery of the listed species while providing for new water development in the Upper Colorado River Drainage Basin.

The water used for this project would be obtained from the Uintah Water Conservancy District which is permitted as a historic depletion (permitted prior to January 1988). The Service addresses new and historic depletions differently under the Section 7 agreement of March 11, 1993. Historic depletions, regardless of size, do not pay a depletion fee to the Recovery Program.

Therefore, it has been determined that implementation of the Proposed Action "***May Affect, is Likely to Adversely Affect***" the federally-listed fish species occurring in Uintah County due to utilization of a water source within the Green River Basin (Upper Colorado River Basin). In order to address depletion (and other) impacts on the endangered Colorado River fish; a Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) was initiated on January 22, 1988. Under the 1988 Recovery Program, any water depletions from tributary waters within the Colorado River drainage are considered to "*jeopardize the continued existence*" of these fish. In order to further define and clarify the recovery processes in the Recovery Program, a Section 7 agreement was implemented on October 15, 1993, by the Recovery Program participants. Because the water source for the Proposed Action is a historic source (i.e., existed prior to January 1988), consultation on the depletion was included in the 1993 agreement. Therefore, no further consultation is needed in terms of water depletion for this project. BLM has received concurrence from the USFWS with the above determination (see Appendix J).

4.9.4 MITIGATION MEASURES

The following mitigation measures are required to further reduce and/or minimize impacts to wildlife species:

The following timing restrictions would further reduce impacts to wildlife species from implementation of Alternative A:

- Surface-disturbing activities shall be prohibited within the Monument Ridge mule deer migration corridor from April 15 to May 31.
- Road construction activities will be prohibited within crucial deer and elk winter range between December 1 and April 30.
- Project construction activities will be prohibited within crucial elk calving and deer fawning habitats from May 15 through June 30.
- Surface disturbing activities will be prohibited within 2 miles of active sage grouse leks between March 1 – June 15.
- In addition, BLM requires that the March 1-June 15 timing restriction also be applied to brooding habitat located within state-administered lands.
- In addition, see Section 2.1.5.5.

The project elements described in Section 2.1.5.5 would be required to reduce impacts to wildlife species from implementation of Alternative C:

4.10 LIVESTOCK GRAZING

4.10.1 ALTERNATIVE A – PROPOSED ACTION

The Proposed Action could result in direct impacts to livestock grazing, including loss of usable forage, loss of usability of existing rangeland improvement structures and increased likelihood of animal/vehicle collisions.

The Proposed Action would involve the removal of approximately 613 acres of usable vegetation in grazing allotments in the Project Area. As a result of this disturbance, approximately 52 AUMs would be lost. Table 4.10-1 provides a breakdown of estimated loss of livestock AUMs by grazing allotment. As shown, activities under the Proposed Action would result in less than 1 percent reduction of vegetation/forage in allotments within the Project Area.

Table 4.10-1 Estimated Loss of Livestock AUMs from the Proposed Action

Name	Total Active AUMs	Estimated Disturbance in Usable Acres of Project Area (Acres)	Active AUMs in Affected in Project Area	Percent AUMs Lost in Project Area
Olsen AMP	9,268	33	3	<.01
Sand Wash	8,176	223	25	<.01
Sunday School Canyon	4,106	162	13	<.01
Sweet Water	8,391	140	11	<.01
Total	29,941	558	52	<.01

*Usable acreage on slopes less than or equal to 40 percent slope and on BLM-administered lands only.

The proposed Seep Ridge Road development has the potential to directly affect multiple livestock watering sources. Direct impacts include but are not limited to the removal and/or physical alteration of a water reservoir site and/or the apron and drainage supplying the water. These impacts result in an alteration of livestock and wildlife grazing habitats and use patterns associated with reservoirs throughout the Project Area. Several sites (12 watering ponds/reservoirs) have been identified that may be impacted by the Proposed Action or serve as possible mitigation sites. However, it is very difficult to discern all of the potential impacts that may result to the water sources utilized by livestock and wildlife along the proposed road until construction occurs and animal habits and patterns of usage become apparent. Other existing rangeland improvement structures, including cattleguards and the Monument Ridge Pasture Corral, would be directly affected by the proposed widening of the ROW and the realignment of the

roadway itself. Temporary disruption to these facilities during construction activities would disrupt ongoing grazing operations in the Project Area.

Specific best management practices and applicant-committed protection measures outlined in Section 2.1.5.6 under the Proposed Action would reduce impacts to livestock grazing. These actions include reclamation, replacement or repair of impacted existing range improvement structures (i.e., fences, cattleguards, water structures, corrals) and control of invasive species and noxious weeds.

The expected increase in traffic on the improved Seep Ridge Road and the increased speed could increase the potential for animal/vehicle collisions. Although limited traffic use data is available, animal/vehicle collision data for the roadway is unreliable. The county has committed to initiate a 5-year study to acquire baseline traffic use data, including accident reports, upon completion of construction activities. The county would then continue regular monitoring of traffic patterns, usage, and accidents (including animal/vehicle collisions). If monitoring reveals at least a 25 percent increase in the number of collisions over the established baseline, the county would then consider the need to fence the ROW (refer to Section 2.1.3).

Adherence to the best management practices and applicant-committed protection measures would reduce impacts to livestock and rangeland improvement facilities in the Project Area.

4.10.2 ALTERNATIVE B – NO ACTION

Impacts to livestock grazing and facilities under the No Action Alternative would remain unchanged from current conditions and trends. Because the proposed improvements would not be realized there would be no new temporary or long-term loss of AUMs from surface disturbance; traditional livestock operations would continue essentially unchanged from the current situation.

4.10.3 ALTERNATIVE C – BUCK CANYON TERMINUS

Implementation of Alternative C could result in direct impacts to livestock grazing, including loss of usable forage, loss of usability of existing rangeland improvement structures and increased likelihood of animal/vehicle collisions.

This alternative would involve the removal of approximately 241 acres of usable vegetation in grazing allotments in the Project Area. As a result of this disturbance, approximately 26.5 AUMs would be lost. Table 4.10.3-1 provides a breakdown of estimated loss of livestock AUMs by grazing allotment. As shown, activities under the Proposed Action would result in less than 1 percent reduction of vegetation/forage in allotments within the Project Area.

Table 4.10.3-1 Estimated Loss of Livestock AUMs from the Proposed Action

Name	Total Active AUMs	Estimated Disturbance in Usable Acres of Project Area (Acres)	Active AUMs in Affected in Project Area	Percent AUMs Lost in Project Area
Olsen AMP	9,268	18	1.5	<.01
Sand Wash	8,176	223	25	<.01
Total	17,444	241	26.5	<.01

*Usable acreage on slopes less than or equal to 40 percent slope and on BLM-administered lands only.

The proposed Seep Ridge Road development has the potential to directly affect multiple livestock watering sources. Direct impacts include but are not limited to the removal and/or physical alteration of a

water reservoir site and/or the apron and drainage supplying the water. These impacts result in an alteration of livestock and wildlife grazing habitats and use patterns associated with reservoirs throughout the Project Area. Several sites (12 watering ponds/reservoirs) have been identified that may be impacted by the Proposed Action or serve as possible mitigation sites. However, it is very difficult to discern all of the potential impacts that may result to the water sources utilized by livestock and wildlife along the proposed road until construction occurs and animal habits and patterns of usage become apparent. Other existing rangeland improvement structures, including cattleguards and the Monument Ridge Pasture Corral, would be directly affected by the proposed widening of the ROW and the realignment of the roadway itself. Temporary disruption to these facilities during construction activities would disrupt ongoing grazing operations in the Project Area.

Specific best management practices and applicant-committed protection measures outlined in Section 2.1.5.6 under the Proposed Action would reduce impacts to livestock grazing. These actions include reclamation, replacement or repair of impacted existing range improvement structures (i.e., fences, cattleguards, water structures, corrals) and control of invasive species and noxious weeds.

The expected increase in traffic on the improved Seep Ridge Road and the increased speed could increase the potential for animal/vehicle collisions. Although limited traffic use data is available, animal/vehicle collision data for the roadway is unreliable. The county has committed to initiate a 5-year study to acquire baseline traffic use data, including accident reports, upon completion of construction activities. The county would then continue regular monitoring of traffic patterns, usage, and accidents (including animal/vehicle collisions). If monitoring reveals at least a 25 percent increase in the number of collisions over the established baseline, the county would then consider the need to fence the ROW (refer to Section 2.1.3).

Adherence to the best management practices and applicant-committed protection measures would reduce impacts to livestock and rangeland improvement facilities in the Project Area.

4.10.4 MITIGATION MEASURES

The county has committed to ensure the continued integrity of existing rangeland improvement structures and to replace structures that cannot be avoided. Currently at least 12 watering ponds/reservoirs have been identified (12 sites identified, plus an additional 2 sites that may have been missed). The county, in coordination with the BLM and the affected grazing permittee, should monitor the proposed project's development to discern changes in animal movements and use of the watering ponds/reservoirs. Ponds that would be maintained or created to minimize impacts to livestock grazing would need to be evaluated under site-specific NEPA and should not be discussed further in this document. Access to current rangeland improvement structures will be retained.

In addition to the above, the County would be required to implement the following mitigation should the proposed action be selected:

- Uintah County shall relocate and/or replace, if necessary; a water pipeline that crosses under the Seep Ridge Road from the well located in T14S R22E in the NW¹/₄NW¹/₄ of Section 2, on the Sunday School Canyon Allotment. The pipeline services private ground located south, southwest of the McCoy Corral.

4.11 RECREATION (INCLUDING TRAVEL MANAGEMENT)

4.11.1 ALTERNATIVE A – PROPOSED ACTION

Potential impacts to recreation and travel management from implementation of the Proposed Action include: Direct impacts to dispersed as well as planned/designated recreation facilities and recreationists/hunters using OHVs on and adjacent to the Seep Ridge Road and indirect impacts to visitors' expectations of the Book Cliffs area.

Under the Proposed Action, once completed, the proposed improvements to the Seep Ridge Road would improve overall access to the popular Book Cliffs area; however, it would invite increased visitation to the area, affecting the remote character of the area and reducing the recreational experience for some visitors and/or hunters to the area. Individuals that are attracted to backcountry recreation would encounter additional visitors, and its attendant noise and traffic, in an area where limited visitation has historically occurred. "New visitors" drawn to the area may have unmet expectations in the minimal and relatively primitive recreation developments in the area.

In the Book Cliffs area, the highly desirous limited entry big game hunts extend from mid-August through mid-November. Construction activities along the Seep Ridge Road during these times would disrupt big game movement in the Book Cliffs area and hinder hunters attempting to reach their hunting and camping destinations. These impacts would lessen the hunting experience for some hunters and may hinder the hunters' success. The largest number of hunters afield generally occur on the opening weekend of the hunt, thus the greatest impact to hunters is likely to occur during these periods. Construction activities could also temporarily affect the number of applications for UDWR's limited hunts. However, upon completion of the proposed improvements, the number of applications would return, if not increase, to their prior-construction level.

The two existing camp sites and dispersed camp sites along the Seep Ridge Road would be directly affected by construction activities with the ROW. Heavy truck traffic and construction activities would result in temporary increase in noise and fugitive dust situations that would be unacceptable conditions for visitors wishing to use these sites. Although the county would control fugitive dust by watering the roadway during construction activities, visitors would likely relocate to other recreation sites along the Book Cliff Divide road or to other dispersed camp sites in the area. These impacts would be temporary, i.e., not extending over the entire 6-year construction life of the project, and would be outweighed by the long-term positive benefit of eliminating fugitive dust from the Seep Ridge Road. Upon project completion, with the anticipated increase in visitors, competition for dispersed campsites in this area may increase.

OHV users and slow-moving recreational vehicles entering and/or exiting the Seep Ridge Road from camp sites and existing roads and trails in the Book Cliffs area would be affected by the temporary increase in the number of construction-related vehicles and the expected increase in overall vehicle traffic on the Seep Ridge Road once the improvements are completed. These direct impacts would be minimized by the county's commitment to properly design the roadway in areas of congestion, install warning signs and post an advisory lowered speed limit of 40 mph in popular recreation areas along the Seep Ridge Road. Barricading closed abandoned and reclaimed segments of the existing Seep Ridge Road would minimize the likelihood of unauthorized vehicle traffic on these segments and enhance the opportunity for successful reclamation (refer to Sections 2.1; 2.1.1; 2.1.5.7; 2.1.5.8; and, the reclamation plan in Appendix C).

4.11.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, the existing Seep Ridge Road alignment and conditions would likely not change appreciably. As such the impacts to recreation, and travel management, from the no action alternative would be similar to but lower in magnitude than the Proposed Action due to reduced extent of road improvements.

4.11.3 ALTERNATIVE C – BUCK CANYON TERMINUS

Potential impacts to recreation and travel management from implementation of Alternative C include: Direct impacts to dispersed as well as planned/designated recreation facilities and recreationists/hunters using OHVs on and adjacent to the Seep Ridge Road.

If Alternative C were to be implemented, the proposed improvements to the Seep Ridge Road would improve overall access to the Willow Creek/area; however, it would invite increased visitation to the area, affecting the remote character of the area and reducing the recreational experience for some visitors and/or hunters to the area. Individuals that are attracted to backcountry recreation would encounter additional visitors, and its attendant noise and traffic, in an area where limited visitation has historically occurred. “New visitors” drawn to the area may have unmet expectations in the minimal and relatively primitive recreation developments in the area.

In the Book Cliffs area the highly desirous limited entry big game hunts extend from mid-August through mid-November. Construction activities along the Seep Ridge Road during these times could disrupt big game movement in the Book Cliffs area and hinder hunters attempting to reach their hunting and camping destinations. These impacts would lessen the hunting experience for some hunters and hinder the hunters’ success. The largest number of hunters afield generally occur on the opening weekend of the hunt, thus the greatest impact to hunters is likely to occur during these periods. Construction activities could also temporarily affect the number of applications for UDWR’s limited hunts. However, upon completion of the proposed improvements, the number of applications would return, if not increase, to their prior-construction level.

The two existing camp sites and dispersed camp sites along the Seep Ridge Road would be directly affected by construction activities with the ROW. Heavy truck traffic and construction activities would result in temporary increase in noise and fugitive dust situations that would be unacceptable conditions for visitors wishing to use these sites. Although the county would control fugitive dust by watering the roadway during construction activities, visitors would likely relocate to other recreation sites along the Book Cliff Divide road or to other dispersed camp sites in the area. These impacts would be temporary, i.e., not extending over the entire 3-year construction life of the project, and would be outweighed by the long-term positive benefit of eliminating fugitive dust from the Seep Ridge Road.

OHV users and slow-moving recreational vehicles entering and/or exiting the Seep Ridge Road from camp sites and existing roads and trails in the Book Cliffs area would be affected by the temporary increase in the number of construction-related vehicles and the expected increase in overall vehicle traffic on the Seep Ridge Road once the improvements are completed. These direct impacts would be minimized by the county’s commitment to properly design the roadway in areas of congestion, install warning signs and post an advisory lowered speed limit of 40 mph in popular recreation areas along the Seep Ridge Road. Barricading closed abandoned and reclaimed segments of the existing Seep Ridge Road would minimize the likelihood of unauthorized vehicle traffic on these segments and enhance the opportunity for successful reclamation (refer to Sections 2.1; 2.1.1; 2.1.5.7; 2.1.5.8; and, the reclamation plan in Appendix C).

4.11.4 MITIGATION MEASURES

- To minimize impacts to hunters' expectations and to maintain access to hunting and camping areas during the big game hunting seasons, construction activities along the Seep Ridge Road shall be halted during the opening weekend of each of the big game hunts in the Book Cliffs Management Area.

4.12 LANDS/ACCESS

4.12.1 ALTERNATIVE A & C– PROPOSED ACTION AND BUCK CANYON TERMINUS

The surface disturbing actions of the Proposed Action could affect other existing authorizations that are either currently co-located within the existing Seep Ridge Road ROW or that cross the ROW. These actions could affect the continued operations of the pipelines. These potential impacts would be resolved by the county's commitment to coordinate with all right of way holders in the project area prior to any surface disturbance in order to minimize disruptions to ongoing pipeline operations (refer to Section 2.1.5.7).

4.12.2 ALTERNATIVE B – NO ACTION

Under the No Action Alternative, the planned ROW expansion and subsequent upgrades would not occur and there would be no impacts to existing co-located pipelines that parallel or cross the existing Seep Ridge Road ROW.

4.12.3 MITIGATION MEASURES

No mitigation measures are recommended.

4.13 SOCIO-ECONOMICS

4.13.1 ALTERNATIVE A – PROPOSED ACTION

Energy development would continue to be the prime revenue-generating source for the Uinta Basin for at least the next 15 years (BLM 2008a). The County proposes to upgrade and improve the existing Seep Ridge Road to accommodate the expected increase in development in the greater Book Cliffs area. Thus the proposed road would not be the change element, but would facilitate access to realize energy development, which is the change element. The Proposed Action would improve the efficiency of support services (i.e., delivery and transport of drilling, operation, maintenance and support vehicles, personnel and equipment), thus reducing overall costs to well and energy-related facility operators working in the greater Book Cliffs area and Uintah and Ouray Reservation lands in the Hill Creek area, located southwest of the Project Area. Traveling extensive distances on an improved roadway would reduce the maintenance and vehicle/equipment replacement costs for the support services working in these areas.

The VFO Proposed RMP/FEIS states “Although the potential increase in revenues related to minerals development [in the BLM's Vernal Planning Area, including the greater Book Cliffs area] would have beneficial impacts on the local economy, adverse impacts ... may occur with user conflicts and a decrease in visitor satisfaction.” (BLM 2008c, p. 4-394). Increased energy exploration and development would reduce visitor expectations of a remote, primitive area. As set out in the BLM's Approved RMP,

approximately 106,178 acres of the greater Book Cliffs area would continue to be managed to preserve visitors' feelings of solitude with opportunities for primitive recreation. This management objective should reduce the concerns of members of the public regarding development in the area.

The anticipated increased human presence in and improved access to the Book Cliffs area should identify the need for increased and regularly scheduled law enforcement presence in the Book Cliffs area. Such an increased presence would minimize risk to vandalism of private property, minimize risks to human health and safety due to adherence to posted speed limits, and, should the need arise, provide "neighborhood-knowledgeable" emergency medical and/or law enforcement expertise within a reasonably short period of time.

As a result of the anticipated increase in vehicle usage on the Seep Ridge Road, Grand County expects additional annual maintenance would be required on their portion of the road. This increased needed maintenance workload would require Grand County to shift its limited road funds from the more populated areas of the County. It is reasonable to expect that Grand County could receive increased public pressure to construct and maintain an all-weather road connecting the upper Book Cliffs in Uintah County with Interstate Highway 70, a major interstate transportation corridor. Bringing a moderate existing road up to federal standards costs approximately \$3 million per mile (Uintah County 2009). Due to the erosion-susceptible geology and steep grades of the southern face of the Book Cliffs, the cost of constructing a road connecting the Book Cliff Divide with Interstate 70 could likely double to an average of at least \$6 million per mile. Such an economic undertaking would exceed Grand County's current annual road budget of approximately \$1.9 million (Grand County, 2010) and would be inconsistent with the current management plans of Grand County.

Uintah County is likely the nearest local governmental entity to have reasonable access to the Seep Ridge Road and the Book Cliffs Divide Road located within Grand County. To minimize economics impacts to Grand County, an agreement could be negotiated between the Uintah and Grand Counties that outlines annual maintenance actions and cost responsibilities. Such an agreement could offset costs to Grand County for any additional, unplanned maintenance costs associated with the Seep Ridge and Book Cliffs Divide Roads. However, any agreement would be between Uintah and Grand County and would not be required by BLM in connection with this alternative.

4.13.2 ALTERNATIVE B – NO ACTION

Failure to construct needed improvements to the Seep Ridge Road would not reduce energy development actions planned or expected to occur in the Book Cliffs area. As with the Proposed Action, energy development would continue to be the prime revenue-generating source for the County and the Uinta Basin for at least the next 15 years. Maintaining the existing conditions of the Seep Ridge Road would continue to limit the number of visitors to the Book Cliffs area, thus indirectly contributing to the public perception of a remote and primitive area. Currently, county law enforcement provides a limited presence in the Book Cliffs area. Failure to construct improved access on the Seep Ridge Road would postpone, but not eliminate, the future need for an increased law enforcement presence in the Book Cliffs area. Failure to construct the proposed improvements to the Seep Ridge Road would not require Grand County to revise or change its current maintenance schedule involving their portion of the Seep Ridge Road or the Book Cliffs Divide Road.

4.13.2 ALTERNATIVE C – BUCK CANYON TERMINUS

Energy development would continue to be the prime revenue-generating source for the Uinta Basin for at least the next 15 years (BLM 2008a). The County proposes to upgrade and improve the existing Seep Ridge Road to accommodate the expected increase in development in the greater Book Cliffs area. Thus the proposed road would not be the change element, but would facilitate access to realize energy development, which is the change element. If implemented, Alternative C would improve the efficiency of support services (i.e., delivery and transport of drilling, operation, maintenance and support vehicles, personnel and equipment), thus reducing overall costs to well and energy-related facility operators working in the Sand Wash and Willow Creek/Flat Rock areas located west of the Project Area. Traveling on the improved 19.6 miles of the existing Seep Ridge Road would reduce the maintenance and vehicle/equipment replacement costs for services working in the area covered by this alternative.

The VFO Proposed RMP/FEIS states “Although the potential increase in revenues related to minerals development [in the BLM’s Vernal Planning Area, including the greater Book Cliffs area] would have beneficial impacts on the local economy, adverse impacts ... may occur with user conflicts and a decrease in visitor satisfaction.” (BLM 2008a, p. 4- 394). Increased energy exploration and development would reduce visitor expectations of a remote, primitive area. As set out in the BLM’s Approved RMP, approximately 106,178 acres of the greater Book Cliffs area would continue to be managed to preserve visitors’ feelings of solitude with opportunities for primitive recreation. This management objective should reduce the concerns of members of the public regarding development in the area.

The anticipated increased human presence in and improved access to the Book Cliffs area should identify the need for increased and regularly scheduled law enforcement presence in the project area. Such an increased presence would minimize risk to vandalism of private property, minimize risks to human health and safety due to adherence to posted speed limits, and, should the need arise, provide locally knowledgeable emergency medical and/or law enforcement expertise within a reasonably short period of time.

4.13.4 MITIGATION MEASURES

No mitigation measures recommended.

5.0 CUMULATIVE IMPACTS ANALYSIS

Cumulative impacts result from the incremental impacts of an action when added to past, present, and reasonably foreseeable future actions, regardless of who takes the action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. This chapter discusses cumulative impacts as the incremental effect to specific resources or issues that would occur from Alternatives A and B, in conjunction with other past or reasonably foreseeable actions.

5.1 REASONABLY FORESEEABLE DEVELOPMENT

In support of the cumulative impact discussion, this chapter provides a discussion of past and present oil and gas activities in the Uinta Basin, both of which serve as introductions to the outlook for reasonably foreseeable development (RFD) in the Project Area and the greater Uinta Basin. The Seep Ridge Road is a major access artery serving the Uinta Basin. The cumulative impact and RFD analysis is based upon the level of activities and actions identified in the VFO Mineral Potential Report (BLM 2002) which projected environmental impacts across a 15-year period. This RFD was reviewed in 2008 for oil and gas development, which would be the most significant development activity expected in the VFO Planning Area. During this review the BLM determined that the RFD, as an analytical tool, could only accurately project environmental impacts for up to five years (BLM 2008a), i.e., five years from the time that the ROD for the VFO Approved RMP is signed.

Other activities with the potential to contribute to cumulative impacts would be livestock grazing and recreational projects. Spatial boundaries for cumulative impact assessments vary and are larger for resources that are mobile or migrate (i.e., air quality) compared to resources that are stationary or that have defined boundaries. For the analysis purposed of this EA, the Cumulative Impact Analysis Area (CIAA) for most resources is the VFO Planning Area which encompasses approximately 5.5 million acres in Duchesne, Daggett, Uintah, and Grand Counties.

5.1.1 OIL AND GAS

The Uinta Basin is a substantial source of natural gas and oil, and it is currently one of the most active oil and gas producing areas in the onshore U.S. Development is currently proposed throughout the Uinta Basin, encompassing BLM, Tribal, and National Forest lands, with exploratory drilling taking place in the western and southern portions of the Basin.

- Future oil and gas development in the Uinta Basin would depend upon the feasibility of exploration, as determined by the underlying geology and further infill development projects within the Basin. Future development would be dependent upon the geologic feasibility of each prospect, the cost to develop the resources, and continued engineering technological advancements as of January 2008, according to UDOGM data, approximately 9,171 wells had been drilled in the VFO Uintah Basin. The cumulative scenario for this EA is based on the number of existing wells in the VFO RMP Planning Area, as well as the estimated total number of wells anticipated to be drilled over the coming 5 years in this same area as analyzed in the Vernal Field Office's final EIS associated with the proposed RMP (2008c). Under the VFO Approved RMP, an estimated 6,530 additional oil and gas wells are anticipated in the VFO Planning Area through 2013. This number may be conservative. Currently the BLM is considering three field development plans that could involve an estimated total of approximately 13,000 wells over the next 10 years.

5.1.2 WILDLIFE

Hunting generates considerable revenue for the State of Utah; hunters can generate considerable funds to local economies during popular and well-attended hunting periods. The State of Utah has current Herd and Wildlife Management Plans in place covering wildlife management in the Uinta Basin. These plans outline management herd objectives that would maintain and/or allow increased wildlife numbers over the next 10 years. Specific management actions identify habitat improvement projects that would sustain wildlife habitat, and thus desired wildlife populations, for the long-term. Many of these management goals and objectives have been considered and carried forward into the VFO Approved RMP (BLM 2008a). It is reasonable to expect that the State of Utah would continue to actively realize their management goals and population objectives for key wildlife species occurring in the Uinta Basin.

5.1.3 LIVESTOCK GRAZING

Livestock grazing is currently a permitted use of public lands within the VFO Planning Area. The BLM currently administers livestock grazing on 147 allotments, involving 153,370 AUMs. Although livestock industry changes may be expected over the next few years, primarily related to marketing trends and conditions, it is reasonable to expect that livestock grazing would continue with only minor changes. However, current and anticipated trends in other authorized uses involving public lands are expected to increase over the next several years. These authorized uses can have long-term cumulative impacts to livestock grazing, as surface disturbance associated with these projects can directly affect the continued usability of livestock allotments by livestock, reduce the amount of available forage to livestock, and reduce the quality of the forage by the spread of invasive plants and noxious weeds. Successful reclamation and aggressive control of invasive plants and noxious weeds are expected to minimize these impacts to livestock grazing over the long-term.

5.1.4 RECREATION

Continued population growth in the region, primarily due to continued energy development, would result in developed and dispersed recreational opportunities. The recreation designations and developments implemented to meet the expected increased demand would have beneficial impacts on recreation, but would also affect the management of other resources in the Cumulative Impact Analysis Area (CIAA).

5.2 CUMULATIVE IMPACTS

5.2.1 INTRODUCTION

This section discloses the impacts expected when the Proposed Action or alternative assessed in this EA are added to the past and reasonably foreseeable actions.

5.2.2 AIR QUALITY

The CIAA for air quality is defined as the Uinta Basin and northwestern Colorado. Cumulative air quality impacts are defined as the combination of emissions resulting from the Proposed Action or alternatives, existing nearby permitted sources, and RFD within the region. Areas of concern include the Uinta Basin, the High Uintah Wilderness Area, as well as nearby mandatory federal PSD Class I areas such as Arches and Canyonlands National Parks and Flat Tops Wilderness. Potential Air Quality Related Value (AQRV) impacts to sensitive areas include regional impacts on visibility, total nitrogen and sulfur deposition, and Acid Neutralization Capacity (ANC).

It is anticipated that the level of natural gas development within this region of the State would continue over the next few years; however the pace of such development would likely depend on market conditions. This development would add incrementally to air quality impacts from emissions sources. The Draft EIS and RMP for the VFO (BLM 2005) addressed the impacts to air quality in the Uinta Basin and surrounding areas of special concern, considering both existing permitted sources and an extended look at development over a fifteen year timeframe with the exception of monitoring ozone. The development alternatives were based on BLM's proposed plans for resource development, which included energy development along with other foreseeable development activities by non-BLM entities. The air quality models developed to analyze impacts to air quality were developed for the Uinta Basin and surrounding areas of special concern, i.e., on a regional basis. In general, results from this analysis indicate that existing air quality in the region is good, and based on reasonable development scenarios in conjunction with existing sources, is not of great concern. Cumulative energy development activities in the Uinta Basin are not expected to affect attainment of NAAQS standards or regional PSD increments.

In general, the increase in fugitive dust levels associated with the proposed improvements to the Seep Ridge Road would be temporary and localized; over the long-term; paving the road would reduce fugitive dust levels in the Project Area. In relation to the other ongoing and planned actions affecting air quality, the upgrade and paving of the Seep Ridge Road would have a limited positive effect on regional air quality. Therefore, it is unlikely that the proposed project would result in a detectable cumulative change to air quality at a regional scale.

Ozone

The air quality cumulative impact area for the No Action and Proposed Action Alternatives is the regional air-shed of the Uinta Basin. Preliminary monitoring results, previously discussed above, indicate exceedences of the ozone NAAQS in the Uinta Basin during the winter. However, ozone formation from its component parts (NO_x and VOCs) is a non-linear, photo-reactive process, and no models presently exist for predicting winter-time ozone formulation. Consequently, the incremental changes in NO_x and VOCs emissions from this project's alternatives cannot be meaningfully analyzed and assessed in the cumulative impact area. Therefore, without this information, BLM cannot adequately assess these cumulative impacts.

5.2.3 CULTURAL RESOURCES

The CIAA for cultural resources is the Project Area because cultural sites are discrete which means impacts are not necessarily additive across a landscape. Impacts to the cultural resources in the CIAA would primarily result from activities associated with surface and subsurface disturbance. Historical and previous development activities have resulted in considerable surface disturbance within the CIAA. Impacts to cultural resources have been minimized by the requirement to conduct field surveys prior to surface-disturbing actions and to avoid or otherwise mitigate adverse impacts to substantial and/or important cultural resources. Future impacts to the cultural resources in the CIAA would result primarily from surface disturbance associated with continued oil and gas development projects and increased visitation to the Project Area. Impacts may also result from specific cultural resource management decisions and from non-surface-disturbing activities that create atmospheric, visual, and/or auditory effects. These latter impacts would apply to sites or locations that together comprise the overall cultural experience for all visitors to the area, and especially to those deemed sacred or traditionally important by Native American Tribes and used by these groups in such a manner that atmospheric change, visual obstructions, and/or noise levels impinge upon that use. These types of impacts cumulatively affect not only the historic setting, feeling, and viewshed of cultural properties, but also their eligibility potential for nomination to the NRHP.

5.2.4 PALEONTOLOGY

As potential impacts to paleontological resources across a geographic landscape are not additive, the CIAA for paleontological resources is defined as the existing Project Area. Cumulative impacts to the paleontological resources in the CIAA would primarily result from activities associated with surface and subsurface disturbance. Surface-disturbing activities could affect paleontological resources by damaging or destroying fossils. Adverse effects include physical damage to or destruction of fossils, as well as increased vandalism and theft that result from improved access to fossil localities. However, if paleontological resources are discovered during surface-disturbing activities in the Project Area, mitigation measures would be implemented before surface-disturbing activities in that area are allowed to continue, cumulative impacts associated with the Proposed Action or alternatives are expected to be minimal. Improved public access could increase vandalism and theft of substantial paleontological resources in the immediate Project Area.

Surface-disturbing activities could also have a beneficial effect on paleontological resources by drawing the attention of a qualified paleontologist to areas that are not currently being researched, resulting in the collection of specimens and data that would not otherwise be recovered.

5.2.5 SOILS

The CIAA for soil resources is the VFO Planning Area. Past, present, and future surface disturbance in the CIAA is estimated at 49,029 acres, or less than 1 percent of the CIAA. Any land-disturbing activity that removes native vegetation and topsoil can result in an increase in erosion rates and sediment yield. Authorized actions that could result in increased erosion and sediment yield within the CIAA include oil and gas development, livestock grazing, recreation, mining activities (Gilsonite, sand and gravel, and, potentially oil shale), and road construction and maintenance operations. Of these potential soil-disturbing activities, existing and proposed roads are the features of highest concern. Active roadways would not be reclaimed, thus sediment yield from roads could continue at rates two to three times above background rates into the indefinite future.

Compaction due to construction activities at well pads, along access roads, and in other disturbed areas would result in a small increase in surface runoff from the area. This increased runoff could in turn cause increased sheet, rill, and gully erosion.

Surface disturbance associated with the Proposed Action and alternatives when added to past, present, and reasonably foreseeable actions would have minimal impacts on soil resources across the CIAA. BMPs and applicant-committed protection measures, adherence to current federal and state design requirements including berms, sediment control and stormwater structures, paving and adherence to regular maintenance operations, would reduce the impacts of the Proposed Action on soil resources by minimizing soil erosion, and by reducing the potential for soil contamination.

5.2.6 WATER QUALITY (SURFACE/GROUND)

The CIAA for water resources (including floodplains) is the BLM VFO Planning Area. The Proposed Action would result in a slight temporary increase in erosion rates and sediment yield. Impacts to water resources would be similar to those discussed above for soil resources. Rapid and successful reclamation/re-vegetation of temporarily disturbed areas not associated with the running surface and shoulder areas of the proposed road, use of erosion control devices, and implementation of BMPs are particularly important in minimizing water quality impacts and in assuring maintenance of long-term

stream health. Design features of the Proposed Action and alternative, including berms and sediment control structures would minimize additional erosion and delivery of sediment from the proposed project.

The existing road would continue to contribute slightly greater runoff than undisturbed sites. Increased runoff could lead to slightly higher peak flows in the Green River, potentially increasing erosion of the channel banks. Increased erosion would also potentially increase turbidity in the river during storm events.

The scope and scale of the Proposed Action, involving site-specific successful reclamation, implementation of erosion control devices and implementation of BMPs, when added to past, present, and reasonably foreseeable actions would have minimal impacts on water resources across the CIAA. The alternative, i.e., continuing with the existing situation, employing continued erosion control devices during maintenance activities, would have slightly more impacts to water quality than the Proposed Action. However, the cumulative impacts from the existing situation, when added to past, present and reasonably foreseeable actions would continue to have minimal impacts on water resources across the CIAA.

5.2.7 FLOODPLAINS

The CIAA for floodplains is the White River watershed within the BLM VFO Planning Area. Impacts to floodplains would be similar to those impacts discussed above in Sections 5.2.5 and 5.2.6 for soils and water quality. Implementation of best management practices to minimize impacts to soils and water quality would have similar, positive impacts to floodplains. Sixteen ephemeral drainages are involved in the Project Area. These drainages can deposit surface runoff and debris to the White River and its floodplain. The Proposed Action would include installation of erosion control structures and BMPs for storm water control as well as successful reclamation of disturbed surfaces. These actions coupled with the distance of the Project Area from the White River would not appreciably affect the past, present and reasonably foreseeable impacts to the White River and its floodplain. The no action alternative would also continue to employ and maintain erosion control structures as part of ongoing maintenance activities. The impacts of these actions would minimize the uncontrolled runoff in the involved drainages that could eventually reach the White River floodplain. As such the No Action alternative would also not appreciably affect the past, present and reasonably foreseeable impacts to the White River and its floodplain.

5.2.8 VEGETATION, INCLUDING INVASIVE PLANTS AND NOXIOUS WEEDS, SPECIAL STATUS PLANT SPECIES AND FORESTRY/WOODLANDS

The CIAA for vegetation and invasive species is the BLM VFO Planning Area. Existing and RFD development projects in the CIAA have or would construct and/or upgrade approximately 2,724 miles of road, and disturb approximately 49,029 acres of existing vegetation. In addition, existing and reasonably foreseeable forage used by livestock grazing, wild horses, wildlife, and recreational use of habitats, mining activities, and prescribed burns would also potentially disturb existing vegetation throughout the CIAA. Specific negative effects associated with the proposed development in the CIAA could include 1) reduction in the overall visual character of an area; 2) reduction or fragmentation of wildlife habitats; 3) increased soil erosion; and 4) increased potential for weed invasion.

Invasive weed species are a major concern in the Uinta Basin. Weed Management Areas have been established through interagency planning and coordination and treatment to find and effectively control stands of invasive and noxious species. Specific negative effects of invasive plants and noxious weeds associated with proposed development in the CIAA could include (1) reduction in the overall visual

character of the area; (2) competition with, or elimination of native plants; (3) reduction or fragmentation of wildlife habitats; and (4) increased soil erosion.

The CIAA for clay reed-mustard is the known range of the species. The potential habitat has not been fully explored and mapped and total population estimates for the species are currently unknown. Existing data reveals populations of clay reed-mustard are found on steep canyon walls and cliffs along the contact zone between the Uinta and Green River geological formations. Currently, populations are known to occur along Willow Creek and the Green River. As this species is found in steep, difficult to reach locations, direct impacts to the species from development, grazing, and recreation have been limited. Indirect anthropogenic caused impacts to the species may include the loss of pollinators due to habitat disturbance and fragmentation resulting from widespread energy development; increased competition with non-native plant species introduced during the course of development, grazing, or recreation; and loss of suitable habitat resulting from soil destabilization or the dumping of clean fill following upslope development.

The CIAA for the Uinta Basin hookless cactus is the area delineated by the USFWS as potential habitat for Uinta Basin hookless cactus. This area covers approximately 528,816 acres on BLM, Ute tribal, state and privately held lands. As of July, 2010, there are 1,317 abandoned oil and gas locations. Using the assumption of 5.0 acres of disturbance per well (including associated roads and pipelines), as per the Vernal Resource Management Plan, 6,585 acres of the CIAA were disturbed some point in the past and are in various stages of reclamation (1.4% of the CIAA). There are currently 4,254 well pads that serve as platforms for actively producing wells. Using the above assumption, this has resulted in 21,270 acres of surface disturbance (4.0% of the CIAA). Finally, there are 1,231 Proposed Well Pads currently in the permitting process that would result in 6,155 acres of surface disturbance (1.1% of the CIAA). Proposed developments if all approve as proposed would result in 63,831 acres of surface disturbance throughout the entirety of the project areas. If it assumed that disturbance would be relatively uniform throughout, then there would be about 41,584 acres of disturbance with the CIAA due the projects (7.9% of the CIAA). Thus, in total 75,594 acres (14.3% of the CIAA) have been or would be disturbed within the CIAA due to energy development activities. Within the CIAA, there are approximately 1,140 miles of roads that have approximately 1,033 acres of permanent disturbance (0.2% of the CIAA). In total past, present, and reasonably foreseeable future activities has resulted in 76,627 acres of disturbance (14.5% of the CIAA).

Due to inclusions of areas of unsuitable habitat within the potential habitat area, the total acreage of suitable habitat is less than 528,816 acres. However, a complete survey of suitable habitat has not been performed and thus the amount of suitable habitat has not been quantified. Impacts to the species from past, current, and reasonably foreseeable actions may be greater or smaller than those described for the total area depending upon the exact distribution of actions relative to suitable habitat.

The CIAA for Graham's beardtongue is the known occurrences of Graham's beardtongue. The potential habitat has not been fully explored and mapped and total population estimates for the species are currently unknown. Existing data reveals scattered populations of the Graham beardtongue occur throughout the Uinta Basin and the Project Area includes one of the major concentrations of the species. The 2010 field survey data estimates that 1240 individuals occur within 300 feet of the proposed ROW. The high concentration of individual plants in/near the Project Area increases the potential for adverse impacts to the populations and likely to the species as a whole. In response to these impacts the Proposed Action includes measures that would directly minimize/reduce the impacts to the species, including: Implementation of BMP measures for stormwater protection and erosion control; implementation of guidance outlined in Appendix F specific to the species; implementation of reclamation and weed control measures (outlined in Appendix C); and, fugitive dust control measures. Paving of the existing/final Seep Ridge Road segment through the habitat area would reduce fugitive dust currently created from the

existing native material roadway. Such measures would minimize/reduce direct and indirect short- and long-term impacts to the Graham beardtongue and its habitat within and adjacent to the Project Area. As such these actions would also minimize the cumulative impacts to the species and its habitat as a whole from past, present and foreseeable future impacts from continued ongoing development actions in the greater Book Cliffs area. Under the No Action Alternative, improvements to the Seep Ridge Road, including paving, would not occur. Stormwater protection, erosion control actions would be implemented as needed. Thus the No Action Alternative would not appreciably change, either beneficially or adversely, the cumulative impacts to the Graham beardtongue from the past, present and foreseeable future development likely to take place in the Project Area and greater Book Cliffs area.

Adherence to conservation measures/practices to afford protective distances from proposed development to plants and/or their occupied habitats could reduce cumulative impacts. Assuming adherence to the above mentioned conservation measures, activities related to other activities in the CIAA would not lead to the need for federal listing of the Graham beardtongue.

The CIAA for forestry/woodlands is the BLM VFO Planning Area. Reasonably foreseeable future actions primarily related to locate and develop mineral and other hydrocarbon resources would have the potential for the greatest impacts on woodland resources. The removal of the woodland and timber forests would result in cumulative long-term impacts to the forestry resources in the area. Surface management agencies planning efforts to manage prescribed burns and wildfires in these forested areas would have direct impact on stand diversity and overall forest health. These plans would result in cumulative positive, long-term impacts. Failure to complete proper planning coordination could result in the potential increased loss and/or degradation of woodland resources. The VFO Approved RMP outlines habitat improvement on approximately 156,425 acres of woodland per decade. The Proposed Action would involve 255 acres of pinyon-juniper woodlands and montane brush/woodland areas, less than 1 percent of BLM's management strategy for woodland habitat management.

5.2.9 WILDLIFE AND FISHERIES, INCLUDING SPECIAL STATUS ANIMAL SPECIES

The CIAA for wildlife (including special status wildlife and fishery species) is the VFO Planning Area. Past and present actions in the CIAA (including minerals development, road construction, and livestock improvements among others) have caused direct habitat loss and/or degradation of habitat, contributed to habitat fragmentation, displaced individual wildlife species, increased collisions between wildlife and vehicles, and potentially contributed to the poaching and general harassment of wildlife. Recreation and livestock grazing within the CIAA has also contributed to cumulative impacts to wildlife; however, the incremental contributions of these activities are not quantifiable. Total cumulative surface disturbance from existing active wells and estimated RFD of oil and gas activities in the CIAA is estimated to be approximately 49,029 acres.

While surface disturbance somewhat corresponds to associated wildlife habitat loss, more accurate calculations of total cumulative wildlife habitat loss are not determinable because impacts are species-specific and dependent upon the following: (1) the status and condition of the population(s) or individual animals being affected; (2) seasonal timing of the disturbance; (3) value and quality of the habitats; (4) physical parameters of the affected and nearby habitats (e.g., the extent of topographical relief and vegetative cover); and (5) the type of surface disturbance. However, surface disturbance calculations are considered a useful indicator of habitat loss because as habitats are removed to support oil and gas development, mining, and other development activities, wildlife carrying capacities of an area would be reduced.

Development activities could temporarily displace wildlife or preclude wildlife species from using areas of more intense human activity. Surface disturbance impacts could disrupt migratory routes and seasonal

ranges, increase general distress, or result in deteriorated physical condition, decreased reproductive success, and nutritional condition due to increased energy expenditure.

It should also be noted that this analysis assumes cumulative impacts to special status wildlife species would be similar in nature to those discussed above for wildlife. However, given their ongoing habitat losses, sensitivity to disturbances, and declining population numbers, special status wildlife species would be expected to be more sensitive to impacts related to development within the CIAA than other, more common wildlife species. Based on these sensitivities, existing and RFD land uses have reduced and would likely continue to reduce the quality and quantity of habitats in the CIAA for special status wildlife species. Field inventories for special status wildlife species are conducted prior to construction, and if seasonal and/or spatial buffers (or avoidance) and other such protective measures are employed in sensitive areas, project-related impacts to special status wildlife species could be reduced due to implementation of spatial and/or temporal restrictions. Currently the greater Book Cliffs area continues to provide expansive suitable for the special status wildlife species. As such, the additive impacts of the Proposed Action along with other existing and RFD activities could affect but would not likely cause a downward trend towards federal listing of the WTPD, spotted bat, bald eagle, golden eagle, ferruginous hawk, greater sage-grouse, short-eared owl, burrowing owl, or sage sparrow.

Similar to special status wildlife discussed above, existing and RFD land uses (including livestock grazing, mineral development, and recreation) have reduced and would likely continue to reduce habitat quality in the CIAA for special status fish species through depletion and sedimentation.

5.2.10 LIVESTOCK GRAZING

The CIAA for livestock grazing is the combined area of the four grazing allotments. Cumulative impacts from oil and gas development to livestock grazing would include the loss of AUMs during the life of the disturbances and disturbance to range facilities. Recreation activities also contribute to cumulative impacts to livestock grazing, but the incremental contribution is impossible to quantify. Table 5.2-1 displays the past, present and reasonably foreseeable development for the livestock grazing CIAA.

Table 5.2.10-1 AUMs Lost from Existing and Reasonable Developments in the Grazing CIAA

Allotment Name	Total AUMs in CIAA	AUMs Lost from Project Alternative	Past and Present AUMs ¹ Lost	RFD AUMs ¹ Lost	Total Reasonably Foreseeable AUMs ² Lost in CIAA	% of Total AUMs in CIAA
Olsen AMP	9,268	24	77	44	158	1.7
Sand Wash	4,526	24	74	44	118	2.6
Sunday School Canyon	3,667	13	60	35	97	2.6
Sweet Water	8,391	11	75	46	157	1.8
TOTAL for CIAA	25,852	52	286	169	530	8.7

¹ Loss for this calculation were assumed to be allotment-wide

² The Reasonable Foreseeable AUMs were calculated by adding the following columns: Past and Present AUMs lost, RFD AUMs lost, and Total AUM's lost from Project Alternative.

These past, present, and future construction activities, and other visual and noise impacts in the CIAA could cause livestock to move to adjacent undisturbed areas, thereby leading to additional livestock impacts on vegetation in those locations. Vegetative recovery, via revegetation efforts, may become increasingly more difficult as grazing animals compete for resources that may become less available due

to drought conditions. Successful interim and final reclamation would reduce adverse effects on livestock resources.

5.2.11 RECREATION (INCLUDING TRAVEL MANAGEMENT)

The CIAA for recreation is the Book Cliffs area south of the White River to the Book Cliffs Divide and east of the Green River to the Utah-Colorado state line. Disturbances principally from oil and gas development have reduced the value of the Book Cliffs area for recreationists seeking undeveloped landscapes and remote and primitive recreation opportunities. Improved access from paving the Seep Ridge Road would contribute to these cumulative impacts by lessening the recreational experience for some visitors to the area and causing them to seek remote and primitive recreation opportunities elsewhere.

Improvements to and paving of the Seep Ridge Road would improve access to the Book Cliffs area, enhancing future development of resources in the area, but not necessarily causing such development. The cumulative impact of the reasonable foreseeable development in the Book Cliffs area, including the proposed improvements to the Seep Ridge Road would be to increase the number of roads in the Book Cliffs area and improve vehicle access to the area. These cumulative improvements would be a long-term benefit to motorized visitors to the Book Cliffs area.

5.2.12 LANDS/ACCESS

The CIAA for lands/access is the Project Area. Potential cumulative lands and access impacts are associated with future natural gas development and recreation in the CIAA. These impacts include increases in industrial traffic and associated user conflicts on segments of Uintah County roads. Improved access to the Book Cliffs area enhances development of the area. As other roads in the area are upgraded and improved to accommodate development and connections are made to the Seep Ridge Road, increasing conflicts would arise involving existing co-located ROWs along these roadways. However, improved and increased road activities in the area would offer greater options for co-located placement of new ROWs, reducing the impacts to other resources and uses in the area from such ROWs. Continued coordination with existing ROW holders prior to any surface disturbance along existing access routes would minimize impacts to these ROWs and ensure their continued function.

6.0 CONSULTATION AND COORDINATION

The Council on Environmental Quality (CEQ) regulations under NEPA require an “early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a Proposed Action” (40 CFR 1501.7). In order to satisfy this CEQ requirement, the BLM requested input from other agencies and the public to determine the concerns and issues associated with this EA. The persons and agencies coordinated in preparation of this EA are identified in Table 6.1 along with the purpose and authorities for the consultation, and findings/conclusions.

Table 6.0-1 List of All Persons and Agencies with Whom Coordination Took Place

Name	Title	Findings and Conclusions
Neal George Jackson	Alameda Corporation, Private land owner and grazing permittee on Sand Wash, Sunday School and Sweet Water Allotments	Coordination on issues relative to the proposed project and possible mitigation measures involved with private lands involved with the proposed project.
Burt and Christy DeLambert	Private land owners	Coordination on issues relative to the DeLambert’s private land involved with the proposed project
Nancy Brown	Program Analyst & Liaison to the BLM Advisory Council on Historic Preservation	36 CFR § 800.11 Compliance
Dennis Winn	Piney Valley Ranches Trust, Grazing permittee on Olsen AMP Allotment	Coordination on issues relative to the proposed project and possible mitigation measures.
Scott Chamberlain	Range Conservationist, SITLA	Coordination on livestock grazing issues on SITLA lands from proposed improvements to the Seep Ridge Road; coordination on existing rangeland improvements projects located on SITLA lands within the Project Area.
Chris Montague	The Nature Conservancy, Grazing Permittee on the Sunday School Allotment	Coordination on issues relative to the proposed project and possible mitigation measures
Drew Crane	U.S. Fish & Wildlife Service	Section 7 Consultation under the Endangered Species Act (16 USC 1531)
Kevin Christopherson	Utah Division of Wildlife Resources NE Regional Office Supervisor	Coordination on animal/collision issues and other wildlife concerns relative to the proposed action.
Lori Hunsaker	Utah State Historical Preservation Officer	Section 106 consultation

6.2 SUMMARY OF PUBLIC PARTICIPATION

Public participation was initiated with the posting of the proposed project on the BLM’s Environmental Notice Bulletin Board (ENBB) on December 1, 2008. A 15-day Public Comment Period was offered from May 13, 2009 through May 28, 2009. Several interested parties requested that BLM accept their

comments until June 1, 2009. BLM subsequently accepted comments as requested as well as comments from the EPA in Denver, Colorado on June 15, 2009. Substantive public comments and the BLM responses are located in Appendix G. Since the addition of Alternative C, the BLM conducted a 30-day public comment period from January 14, 2011 through February 15, 2011. Following the public comment period, BLM considered additional comments pursuant to finalizing the EA and issuing a decision record.

In accordance with 43 CFR 2807.14, existing ROW holders affected by the Proposed Action were informed of the pending ROW application (refer to Table 3.9-1). A letter, dated March 17, 2009, was sent via certified mail, to each of the holders requesting their comments as to how the Proposed Action would affect the integrity of, or the ability to sustain, existing operations and/or facilities contained in the ROW. XTO Energy has responded in a letter dated April 14, 2009 and expressed concern about working around pipelines near the road. Section 2.1.5.7 of this EA would address XTO's concerns.

6.3 EA PREPARATION AND REVIEW

The Proposed Action and No Action Alternatives were largely prepared by CIVCO Engineering, Inc and its sub-contractors, shown below in Table 6-3-1. Alternative C was prepared by BLM staff listed in the ID Team Checklist who also reviewed the EA.

Table 6.3-1 List of Reviewers and Preparers of the EA

Various Contractors		
Name	Title	EA Responsibilities
Adam Jacobson	Morrison-Maierle, Inc., South Jordan, UT, GIS Specialist	GIS, Spatial Analysis, Cartography
Bret Reynolds	CIVCO Engineering, Vernal, Utah Engineer	Proposed Road Alignment, Typical Drawings
Dave Alvarez	CIVCO Engineering, Vernal, Utah, NEPA Specialist	Project coordination
Erik Nyquist	Morrison-Maierle, Inc., Bozeman, MT	Wildlife, including Special Status Wildlife Species, Soils, Vegetation, including Noxious Weeds and Special Status Plant Species, Floodplains and Wetlands, Rangelands
Jean Sinclear	Buys and Associates, Inc., Vernal, UT, NEPA Manager	Project Lead, Recreation, Visual Resources
Paul McGuire	Morrison-Maierle, Inc., Missoula, MT,	Wildlife, including Special Status Wildlife Species, Vegetation, including Noxious Weeds and Special Status Plant Species; Soils, Floodplains
Tanya Johnson	SWCA Consulting, Salt Lake City, UT, Archaeologist	Cultural Resources, Paleontology
Tish Stultz	The Stultz Group, LLC, Lehi, UT, Economist	Socio-economics
Troy D. Ostler	CIVCO Engineering, Vernal, Utah, Engineer	Project management

7.0 REFERENCES

- Anderson, D.E., O.J. Rongstad, and W.R. Mytton. 1989. Response of Nesting Red-Tailed Hawks to Helicopter Overflights. *The Condor* 91(2):296-299.
- Billings, M. 2008. Personal Communication. Uintah County Weed Department, Weed Supervisor. August 18, 2008.
- Braun, C.E., M.F. Baker, R.L. Eng, J.S. Gashwiler, and M.H. Schroeder. 1976. "Conservation Committee Report on the Effects of Alteration of Sagebrush Communities on the Associated Avifauna." *Wilson Bulletin* 88: 165-171.
- Bureau of Land Management (BLM). 1984. Final Environmental Impact Statement on the Book Cliffs Resource Management Plan. Bureau of Land Management, Vernal Field Office. November 1984.
- _____. 2002. Mineral Potential Report for Vernal Field Office, Encompassing Approximately 5.1 Million Acres in Duchesne, Daggett, Uintah and Grand Counties, Utah, August 2002.
- _____. 2005. Vernal Field Office Draft Resource Management Plan and Environmental Impact Statement, Vernal Field Office, Utah, January 2005.
- _____. 2006. Utah BLM NEPA Guidebook.
- _____. 2007. Potential Fossil Yield Classification System. Available on-line at http://www.blm.gov/nhp/efoia/wo/fy08/IM2008-009_att1.pdf.
- _____. 2008a. Vernal Field Office Record of Decision and Approved Resource Management Plan. Vernal Field Office, Utah, October 2008.
- _____. 2008b. BLM Manual Handbook H-1790-1.
- _____. 2008c. Proposed Resource Management Plan and Final Environmental Impact Statement. Bureau of Land Management, Vernal Field Office. August 2008.
- _____. 2009. Instruction Memorandum No. GR-2009-002 – "Green River District Reclamation Guidelines for Reclamation Plans". Green River District. January 2009.
- _____. 2010. BLM Utah NEPA Guidebook July 2010.
- Buy's and Associates (B&A). 2010. "Uintah County Seep Ridge Road Paving Project, Graham's Beardtongue (*Penstemon grahamii*) Survey Report". Prepared for the Bureau of Land Management Green River District, Vernal Field Office. Prepared by Buy's & Associates, Inc., Littleton, Colorado. June 2010. pp. 4
- Cashion, W. 1973. Geologic and Structure Map of the Grand Junction Quadrangle, Colorado and Utah. scale 1:250,000.
- Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. June 2004.

- Daitch, D.J., M.H. Imhof, P.C. Murphey. 2008. Paleontological Assessment for the Civco Seep Ridge Road Improvement Project. SWCA Paleontology Report #UT08-14583-27. Bureau of Land Management, Vernal Field Office.
- D'Eon, R. G. and R. Serrouya. 2005. Mule deer seasonal movements and multi-scale resource selection using global positioning system radiotelemetry. *Journal of Mammalogy* 86:736–744.
- Environmental Protection Agency (EPA). 2003. National Primary and Secondary Drinking Water Standards, EPA 816-F-03-016 June 2003, Accessed online at: <http://www.epa.gov/ogwdw/mcl.html#mcls>.
- Fitzgerald, J.P., C.A. Meaney, and D.M. Armstrong. 1994. Mammals of Colorado. Denver Museum of Natural History and University Press of Colorado. Niwot, CO. 467pp.
- Frickel Frickel, D.G., Shown, L.M., and Patton, P.C. 1975. An evaluation of hillslope and channel erosion related to oil shale development in the Piceance Basin, northwestern Colorado; Colorado Water Resources Circular No. 30, Denver, Colorado, Denver Service Center.
- Gordon, K.M., K.C. Keffer, and S.H. Anderson. 2003. Impacts of recreational shooting on black-tailed prairie dog behavior, population, and physiology. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming. Laramie, Wyoming.
- Grand County. 2010. Personal Communications with M. Brimhall, Grand County Administrator. Emails dated April 21 and 26, 2010.
- Hall, E. Raymond. 1981. The Mammals of North America, Vols. I & II. John Wiley & Sons, New York, New York. 1181p.
- Johnson, Tanya. 2009. *Class III Cultural Resource Inventory of the Seep Ridge Road in Uintah County, Utah*. Prepared by SWCA, Inc., Environmental Consultants, Salt Lake City, Utah. SWCA Cultural Res Rept No. 08-399. Submitted to Bureau of Land Management. Copies available from Utah State Historic Preservation Office.
- Karpowitz, J.F. 1984. Book Cliffs Big Game Inventory and Productivity Study. Utah Division of Wildlife Resources. Publ. 84-10.
- Lentsch, L.D., Hoskins, B.G. and Lubomusrov, L.M. 2000. The White River and Endangered Fish Recovery – A Hydrological, Physical and Biological Synopsis Final Report. Prepared for: Recovery Implementation Program for Endangered Fish Species of the Upper Colorado River.
- Lusby, G.C. and Toy, T.J. 1976. An evaluation of surface mine spoils area restoration in Wyoming using rainfall simulation, Earth Services Process, Vol. 1, Denver, Colorado.
- Parrish, J.R., F.P. Howe, R.E. Norvell. 2002. Utah Partners in Flight Avian Conservation Strategy Version 2.0. Utah Partners in Flight Program, Utah Division of Wildlife Resources. UDWR Publication Number 02-27. i-xiv, 302 pp.
- Renfrew, R.B., C.A. Ribic, J.L. Knack. 2005. Edge avoidance by nesting grassland birds: a futile strategy in a fragmented landscape. *The Auk* 122(2): 618-636.

- Rodriguez-Estrella, R., J.A. Donazar, and F. Hiraldo. 1998. Raptors as indicators of environmental change in the scrub habitat of Baja California Sur, Mexico. *Conservation Biology*, Vol 12, No. 4 (August 1998): 921-925.
- Sawyer, H., R. Nielson, D. Strickland, and L. McDonald. 2006. 2006 Annual Report. Sublette Mule Deer Study (Phase II): Long-term monitoring plan to assess potential impacts of energy development on mule deer in the Pinedale Anticline Project Area. Western Ecosystems Technology, Inc. Cheyenne, WY. 101pp + appendices.
- Seglund, A.E., A.E. Ernst, M. Grenier, B. Luce, A. Puchniak, and P. Schnurr. 2004. White-tailed Prairie Dog Conservation Assessment.
- State of Utah. 2008. Written Communication. Office of the Governor, Public Lands Policy Coordination. September 22, 2008.
- Steidl, R.J. and R.G. Anthony. 2000. Experimental effects of human activity on breeding bald eagles. *Ecological Applications*, Vol. 10, No. 1. (February, 2000) pp. 258-268.
- Tileston, J.V. and R.R. Lechleitner. 1966. Some Comparisons of the Black-tailed and White-tailed Prairie Dogs in North-central Colorado. *The American Midland Naturalist* 75(2):292-316.
- Uintah County. 2007. Uintah County General Plan, as amended. Uintah County, Utah.
- Uintah County Road Department. 2005. Traffic Counts on County Roads.
- Uintah County Weed Department. 2008. Uintah County Weed Management website. Available at <http://www.co.uintah.ut.us/weedctrl/weedid.htm>
- Uintah County. 2009. Public comments made by M. McKee, Uintah County Commissioner during the Uintah Basin Oil and Gas Collaborative Work Group Meeting of April 9, 2009, Vernal, Utah.
- U.S. Department of Agriculture –Natural Resource Conservation Service (USDA-NRCS). 2007. Soil Properties available at: <http://soildatamart.nrcs.usda.gov>.
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 2006. Soil Survey Geographic (SSURGO) Database for Uintah Area, Utah – Parts of Daggett, Grand and Uintah Counties.
- United States Fish and Wildlife Service (USFWS). 1987. Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, Final. USDI, Denver, Colorado. September 29, 1987.
- _____. 2007. Conservation Agreement – Graham’s beardtongue (*Penstemon grahamii*). Approved November 2007 by the Utah Department of Natural Resources, Utah BLM and the USF&WS. Pp. 25.
- _____. 2008. Critical Habitat Portal. Available at: <http://criticalhabitat.fws.gov/>. Accessed on February 29, 2008.
- U.S. Geological Survey (USGS). 2008. Stream Gauging Data. Available at: <http://waterdata.usgs.gov/hwis/>.

Utah Division of Environmental Quality (UDEQ). 2000. Standards of Quality for Waters of the State, R317-2, Utah Administrative Code.

Utah Division of Water Rights. 2009. Water Rights Database. Available at:
<http://www.waterrights.utah.gov/cblapps/wrprint.exe?wrnum=41-3523>. Accessed 03/30/2009.

Utah Division of Wildlife Resources (UDWR). 2002. Strategic Management Plan for Sage Grouse. Publication 02-20. June 11, 2002.

_____. 2007a. Utah Big Game Annual Report – 2006. Prepared by Kent R. Hersey and Anis Aoude. Publication No. 07-22. Salt Lake City, Utah, pp. 178.

_____. 2007b. Utah Black Bear Annual Report – 2006. Prepared by Kent R. Hersey and Kevin Bunnell. Publication No. 07-21. Salt lake City, Utah. Page 10.

_____. 2008a. Utah Big Game Annual Report 2008. Annual Performance Report for Federal Aid Project W-65-M.

_____. 2008b. UDWR working data for white-tailed prairie dog (Unpublished data).

_____. 2008c. UDWR working data for greater sage-grouse. (Unpublished data).

_____. 2008d. Burrowing Owl (*Athene cunicularia*). Wildlife Notebook Series No. 11.

_____. 2008e. Utah Conservation Data Center. Burrowing Owl. <http://dwrcdc.nr.utah.gov/rsgis2/Search/Display.asp?FINm=thecuni>.

_____. 2008f. Utah Cougar Annual Report – 2006 and 2007. Prepared by Kent R. Hersey and Kevin Bunnell. Publication No. 08-35. Salt Lake City, Utah. Page 13.

_____. 2009a. Wildlife News. Press Release – “Dreams Come True – Bison Released in the Book Cliffs. February 5, 2009.

_____. 2009b. Internal working correspondence to BLM on UDWR’s initial comments on the working EA document. Dated April 13, 2009.

Utah Division of Wildlife Resources – Utah Natural Heritage Program (UDWR-UNHP). 2007. Utah Sensitive Species List. Last updated December 14, 2007.

_____. 2008. Utah Conservation Data Center. Available at:
<http://dwrcdc.nr.utah.gov/rsgis2/Search/Display.asp?FINm=ursearch>.