

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

**Proposed Land Use Plan Amendment and
Environmental Assessment**

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Cameron to Milford - 138 kV Transmission Line Project

***Location:* Beaver, Mineral Mountains, and Milford, Beaver County, Utah**

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ACRONYMS AND ABBREVIATIONS

Alt 1	Alternative 1
Alt 2	Alternative 2
APLIC	Avian Powerline Interaction Committee
BLM	Bureau of Land Management
BMP	Best Management Practices
CCFO	Cedar City Field Office
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGBA	Cedar, Beaver, Garfield, Antimony
CIA	Cumulative Impacts Area
DR	Decision Record
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
GPS	Global Positioning System
IB	Instructional Bulletin
IM	Instructional Memorandum
JBR	JBR Environmental Consultants, Inc.
KOP	Key Observation Point
kV	Kilovolt
MW	Megawatt
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PA	Proposed Action
OHV	Off Highway Vehicle

RMP	Resource Management Plan
ROW	Right-of-Way
SHPO	State Historic Preservation Office
SITLA	Utah School and Institutional Trust Lands Administration
SPCC	Spill Prevention, Control, and Countermeasures
SQR	Scenic Quality Rating
UDWR	Utah Division of Wildlife Resources
USC	United States Code
USFWS	US Fish and Wildlife Service
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WO	Washington Office

1.0 PURPOSE AND NEED

1.1 Introduction

PacifiCorp has filed an SF-299 Application for Transportation and Utility Systems and Facilities on Federal Lands within the Bureau of Land Management's (BLM) Cedar City Field Office (CCFO). PacifiCorp proposes to construct, operate, and maintain a 15-mile long, 138 kilovolt (kV) single circuit, overhead, primary transmission line within a right-of-way (ROW) between the Cameron Substation, near the town of Beaver, and the Milford Substation, near the town of Milford, in Beaver County, Utah (Proposed Action or project, **Figure 1.1-1** in **Appendix I**). PacifiCorp also proposes to expand the Cameron Substation. The ROW is requested for 30 years, and if in conformance with the grant may be renewed. If approved, construction would commence as soon as weather permits.

The proposed route for the transmission line would roughly parallel and make multiple crossings of Pass Road through the Mineral Mountains between the Cameron and Milford substations. The proposed transmission line would not meet Visual Resource Management (VRM) Class II objectives established for approximately 2.7 miles of the proposed route. BLM proposes to amend the Cedar, Beaver, Garfield, Antimony Resource Management Plan (CGBA RMP) to change the VRM Class from II to IV for lands containing the proposed route.

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of construction, operation, and maintenance of the proposed transmission line. This EA contains analysis of potential impacts that could occur along the length of the transmission line route resulting from the implementation of the Proposed Action or alternatives to the Proposed Action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts (defined under 40 CFR 1508.27) could result from the Proposed Action. "Significance" is defined by NEPA and is found in the Code of Federal Regulations 40 (CFR) 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record (DR) may be signed for the EA approving the selected alternative, whether the Proposed Action or another Action Alternative. A DR including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in "significant" environmental impacts beyond those already addressed in the CGBA RMP (BLM 1986).

1.2 Background

PacifiCorp's immediate objective for the project is to improve the transmission infrastructure to provide a consistent and reliable level of electrical service to meet the current and near-future electrical load demands in the Milford and west Beaver County area. PacifiCorp's plans for the area include maintaining the existing 46 kV line into the

area with the addition of a 138 kV line in a separate corridor that combined with the existing line would both serve Beaver County and create redundancy within the system (in this case redundancy means availability of back-up transmission capability in case of outage to the primary transmission line serving an area). Eventually, a 138 kV loop may be required to meet the needs of the area, and the proposed line would provide one segment of that loop; however, PacifiCorp has no foreseeable plans for a loop at this time.

Power is currently supplied to Milford and west Beaver County via a 46 kV radial system that runs between the Cameron and Milford substations (**Figure 1.1-1 in Appendix I**), which circumnavigates the Mineral Mountains to the south. The existing 46 kV system also receives power from the Blundell Geothermal Power Plant (Blundell) via a separate 46 kV transmission line connecting Blundell with the existing Milford Substation. In addition, a leg of the 46 kV system connecting the Milford and Cove Fort substations provides power to a communications site; however, this line does not have capacity to provide backup power supply to the Milford area. The power source for the Cove Fort substation is distant and the line supplying the substation is relatively small. Use of this line in case of an outage to the primary line would result in thermal overload of the line, the system would trip, and there would be voltage collapse in Milford, affecting over 90% of PacifiCorp's residential and commercial customers in Beaver County. Consequently, the existing Cove Fort to Milford transmission line does not provide redundancy.

The existing 46 kV system can provide a maximum of approximately 21.1 megawatts (MW) of energy without the support of generation from Blundell, and is capable of meeting electric demands in the Milford area during the period of time outside the spring and summer irrigation season. During the irrigation season, the system relies on generation from Blundell to meet electric demand. During the 2008 irrigation season the peak demand for the area was 27 MW, and power demand exceeded supply provided by the 46 kV system approximately five months out of the year.

The level of electrical output from Blundell fluctuates due to the fluctuation in the geothermal source. Fluctuations in energy production from Blundell affect the amount of energy available to the Milford and west Beaver County area. PacifiCorp estimates that a 38% voltage change on the 46 kV system at Milford results when power supply from Blundell is not available. In addition, the Blundell plant must be taken offline periodically to clean the mineral deposits that accumulate as a result of the geothermal source. System voltage collapse occurs when energy demand exceeds the supply from the 46 kV system and when additional generation from Blundell is not available, resulting in outages to customers who depend on the system for their electrical supply. In 2008 this situation occurred 17 times, lasting a total of 431 hours. Electrical outages pose a risk to public health and safety through the use of generators and candles, and may be life-threatening for persons dependent on electric power for heat and medical devices.

Customers in the Milford and west Beaver County area rely exclusively on the existing 46 kV transmission line for delivery of electrical service; there are no other transmission lines delivering electric service to this area. There is also no redundancy in the system; any physical line outage results in disruption of electric service. The existing 46 kV system is fundamentally unreliable due to the combination of excessive demand,

fluctuating generation at Blundell, and lack of redundancy in electric transmission lines. As a result, the system has been identified as one of the five poorest-performing in Utah with a three year total of 3,072,799 customer minutes lost.

The local electrical infrastructure is being used at full capacity to meet the electrical needs of customers, and the demand for electricity in the Milford and west Beaver County area is projected to continue to increase. The electrical load in Milford and west Beaver County has grown over the years with existing customers individually using 26 percent more electricity today than 20 years ago. In addition, industrial customers in the area cannot presently take their full current contracted load without jeopardizing the system in western Beaver County.

Because of the growth in electrical demand, the existing electrical transmission infrastructure capability has been exceeded. Blundell cannot be relied upon to consistently generate additional power (as demonstrated above) for times of peak demand. PacifiCorp estimates peak loads exceeded system capacity for over eight months in 2011, and that demand will exceed system capacity (without support of generation from Blundell) over nine months in 2013.

Beaver County Economic Development officials and county commissioners have voiced their concerns on several occasions about the possibility of opportunities being lost, or companies being deterred from developing in the area because of the lack of electrical facilities to support their operations. PacifiCorp is currently unable to meet requests for load increases received from existing local industries. In addition, there are two cement and lime companies that are considering building large plants in western Beaver and Millard Counties. Increased electric load that would result from any future industrial expansion could not be supported by PacifiCorp with existing infrastructure.

Lack of transmission infrastructure is hampering development and expansion of renewable energy in the area as well. Renewable projects have targeted the area for expansion of current projects and for new facilities that would not be possible without additional transmission capability.

1.3 Purpose of and Need for the Proposed Action

The purpose of the BLM action is to respond to the ROW application submitted by PacifiCorp to cross public lands in order to provide legitimate use of that land under Title V, Section 501, of the Federal Land Policy and Management Act (FLPMA) (43 U.S.C. § 1761), and to meet the applicant's objectives while preventing undue degradation per 43 CFR 2810.2 (a-d).

The need for the BLM action is established by the BLM's responsibility under the FLPMA (43 U.S.C. § 1761) to respond to a request for a ROW grant while avoiding or minimizing adverse impacts to other resource values and locating the uses in conformance with land-use plans.

The proposed project is primarily needed to provide voltage support to the system to meet current obligations and to allow for additional growth (described in **Section 1.2**). The proposed 138 kV transmission line would eliminate the dependency on Blundell generation to support the voltage in the Milford and west Beaver County area. A 138 kV transmission line would increase the previous load limit of 21.1 MW to a projected 48.2

MW without support from Blundell, in effect adding 27.1 MW capacity to the system. PacifiCorp anticipates that addition of the proposed 138 kV transmission line would meet area electrical demands for at least 10 years.

In addition to providing voltage to meet current obligations and allow for growth, the proposed transmission line would be designed to provide redundancy in the system, which would increase service reliability to this area. This would be accomplished by routing the 138 kV transmission line to achieve separation between the 46 kV and 138 kV systems such that an event (such as wildfire) would not be likely to damage both systems. Should the 138 kV system be damaged to the point of being inoperable, the 46 kV system could be utilized as a backup to provide electricity to the extent that the system could meet the electrical demand at the time of the outage.

1.4 Conformance with BLM Land Use Plans

Most of the project would occur on public lands administered by BLM's CCFO. Land use decisions for the Project Area are contained in the CGBA RMP (BLM 1986), as amended.

Development of utility infrastructure is recognized as an appropriate use of public lands in the CGBA RMP. The Proposed Action and Action Alternatives described below are in conformance with the approved CGBA RMP management objective to *"provide more effective public land management and to improve land use, productivity and utility through: a) accommodation of community expansion and economic development needs; b) improved land ownership patterns; and c) providing for the authorization of legitimate uses of public lands by processing use authorization such as rights-of-way, leases, permits, and State land selections in response to demonstrated public need."* The project is specifically provided for in Decision 3.1 (BLM 1986), which states that applications for use authorizations such as rights-of-way, leases, and permits be processed on a case-by-case basis.

The CGBA RMP management objective for visual resources is to, *"Plan, modify, and implement resource management activities in a manner which will minimize impacts to visual resources. Apply special emphasis in environmental assessment and project design to projects in the scene area (foreground visual zone) in order to meet [Visual Resource Management] objectives."* The Proposed Action would place the transmission line in the foreground of some areas designated in the CBGA RMP as VRM Class II. Placement of such facilities would not be consistent with Class II objectives (CBGA RMP Decision F.1; BLM 1986). Therefore, parts of the Proposed Action would not conform to the CBGA RMP. A plan amendment would be needed to change the VRM Class assigned to portions of the Project Area so that the entire Proposed Action would be in conformance with the CBGA RMP.

In conjunction with the Proposed Action, the BLM proposes to amend the CGBA RMP to change the VRM classification of approximately 594 acres of BLM-administered public lands, which would contain the proposed transmission line ROW, from their current classification of Class II to Class IV. The newly created Class IV area would buffer the north and east side of Pass Road by 350 feet and extend south and west of Pass Road to the existing Class III boundary, and connect to existing VRM Class IV

areas to the northwest and southeast (**Figure 1.4-1** in **Appendix I**). No RMP amendment would be required for the other Alternatives.

1.5 Decisions to be Made

The EA will inform two decisions to be made by the BLM. First, the BLM will decide whether or not to amend the CBGA RMP to change the VRM Class assigned to portions of the proposed ROW from VRM Class II to Class IV so that the entire Proposed Action would be in conformance with the CBGA RMP. Second, the BLM will decide whether to deny the proposed ROW, grant the proposed ROW, or grant the ROW with modifications.

1.6 Relationship to Statutes, Regulations, and Other Plans

This EA is being prepared in accordance with NEPA for projects involving federal lands. Title I of FLPMA declares that public lands will be managed in a manner "...that will provide for outdoor recreation and human occupancy and use." Title V of FLPMA gives authorization to the Secretary to grant ROWs over such lands for "systems for transmission or reception of radio, television, telephone, telegraph, and other electronic signals, and other means of communication." The request for the ROW for this Proposed Action has been submitted to the BLM under Title V of FLPMA.

FLPMA also requires that the BLM "develop, maintain, and when appropriate, revise land-use plans" (43 U.S.C. §1712). An amendment to the CGBA RMP may be necessary as described under **Section 1.4**.

The Project is consistent with all other federal laws and regulations, including:

- Endangered Species Act (ESA)
- Bald and Golden Eagle Protection Act
- Migratory Bird Treaty Act
- National Historic Preservation Act (NHPA)
- Clean Water Act
- Clean Air Act
- Floodplain Management (Executive Order 11988)
- Protection of Wetlands (Executive Order 11990)
- Environmental Justice (Executive Order 12898)
- BLM Sensitive Species Designation
- Rangeland Health Standards
- Native American Trust Management
- Federal Noxious Weed Act of 1974 (Executive Order 13112)

Issuing a ROW across BLM-administered lands to allow construction of a transmission line for purposes of increasing the reliability and availability of electrical power would be in accordance with BLM policy and authority. The ROW grant application would be subject to standard approval procedures as outlined in the ROW grant regulations (43 C.F.R. 2800).

The Project would comply with State of Utah and Beaver County statutes and applicable zoning regulations, and be consistent with relevant State and Beaver County land use plans. The Beaver County General Plan (1999) acknowledges federal land within the

county, which is used for livestock grazing, mineral extraction, and open space. The plan also encourages cooperation with federal agencies in decisions affecting the management and use of recreational facilities and road improvements on federally administered lands. The Project is in conformance with the Beaver County General Plan since it would have minimal impact on livestock grazing, mineral extraction, recreation, wildlife habitat, watersheds, and timber sales.

The Project would also be in conformance with the Utah Partners in Flight Avian Conservation Strategy Version 2.0 (Parrish et al. 2002), Birds of Conservation Concern 2008 (USFWS 2008), and Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds Instructional Memorandum (IM) 2008-50, Migratory Bird Treaty Act – Interim Management Guidance (BLM 2008).

1.7 Identification of Issues

Public notification of the project was initiated on January 7, 2011 via the Environmental Notification Bulletin Board, a BLM internet web site used to notify the public of potential projects on public lands in Utah. One comment letter was received. The Notice of Intent to prepare an EA was published in the Federal Register on August 24, 2012 (FR 77[165]:51559-51560). Two comment letters were received within the 30 day public scoping period. The EA was made available for public review from October 29, 2013 to November 27, 2013. Two comment letters were received within the 30 day public comment period. The letters and a matrix of responses to comments made are included in **Appendix A**. Comments have been addressed in this EA as indicated in the matrix. Based on the Interdisciplinary Team Checklist (**Appendix B**), the following issues were carried forward for analysis in this EA.

Soils: Clearing of vegetation within the ROW, in areas where poles would be installed, and along spur routes would expose soils, and could lead to erosion or otherwise alter the future productivity of soils.

Hydrology, Floodplains, and Water Resources: The Utah Riparian Management Policy, IM UT 2005-092, states that no new surface disturbing activities will be allowed within 100 meters (approximately 330 feet) of riparian areas unless it can be shown that:

- There are no practical alternatives, or
- All long-term impacts can be fully mitigated, or
- The activity will benefit and enhance the riparian area (BLM 2005).

The disturbance associated with the Proposed Action would be near Cherry Creek Spring, Cherry Creek, and associated riparian areas, and would cross steep terrain and bare soils that would be susceptible to increased erosion, all of which could affect water resources and hydrology. In addition, the proposed ROW would be in proximity to Wildcat Wash and the Beaver River, and disturbance from the project may impact limited areas within their floodplains.

Vegetation, Woodland Products, and Forestry: Vegetation in general, and areas with trees in particular, would be crushed or cleared and maintained at a low profile in certain areas within the ROW, creating an opportunity for expansion of populations of noxious or invasive species, and reduced forest product value. Washington Office (WO)

Instruction Bulletin (IB) 2012-097 (personal communication K. McAdams-Kunze 01/08/13) contains the BLM policy for the cutting and removal of timber and trees. The policy requires that the forest resource shall be appraised and sold at no less than the appraised value. The application of the proposed vegetation maintenance guidelines would require this policy be implemented.

Fish and Wildlife including Special Status Species: Implementation of the project could impact wildlife and their habitat, including migratory birds, raptors, mule deer (*Odocoileus hemionus*), and pronghorn antelope (*Antilocapra americana*). There is also potential for several BLM sensitive species to occur in the vicinity of the Project.

Range Resources: Five grazing allotments would be crossed by the Proposed Action or Action Alternatives: Mineral Range, Milford Bench, Minersville #2, North Creek, and Whitaker. Clearing of trees, increased erosion, or the spread of noxious and/or invasive weeds associated with ground disturbance could adversely impact range resources.

Wilderness Characteristics: The proposed transmission line would be within the Granite Peak area, which has been identified by the BLM as an area with wilderness characteristics. Wilderness characteristics could be affected for the long term under the Proposed Action.

Recreation: The proposed transmission line would be located in a well-used travel and dispersed recreational corridor, and would be within two miles of the developed Rock Corral recreation site. Recreation could be affected for the long term under the Proposed Action.

Visual Resources: Construction of the transmission line would introduce new visual elements into the landscape. Portions of the proposed transmission line would be within areas currently designated VRM Classes II and III, and Class II areas are proposed to be changed to Class IV under the Proposed Action.

Cultural Resources: Implementation of the project could impact cultural resources that occur within and adjacent to the Project Area. The Paiute Tribe of Utah indicated that there are possible impacts to cultural sites in the area.

Socioeconomics: The existing electric transmission system is fundamentally unreliable and under certain circumstances is inadequate to meet the current electrical demands of western Beaver County. The proposed project would provide additional capacity to meet existing electrical demand and contracted levels of service, and potentially facilitate growth in residential and commercial subscribers in the service area, which may impact job opportunities and local economic growth.

1.8 Issues Considered but Eliminated from Further Analysis

The BLM is required to consider many authorities when considering a federal action. Those elements of the human environment that have been determined by BLM resource specialists to be not present in the area addressed in this EA or not be affected are identified (determination of NP or NI) and summarized in the CCFO's Interdisciplinary Team Checklist (**Appendix B**).

1.9 Summary

This chapter has presented the purpose of and need for the project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the project. The Proposed Action, Action Alternatives, and No Action Alternative are presented in **Chapter 2**. The affected environment is described for those resources potentially impacted by the project in **Chapter 3**. The potential environmental impacts or consequences resulting from the implementation of the Proposed Action and alternatives are then analyzed in **Chapter 4** for each of the identified issues.

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2.1 Proposed Action

The Proposed Action is to construct, operate, and maintain a 138 kV overhead, single circuit, primary transmission line and expand the Cameron Substation near Beaver, Utah (**Figure 2.1-1** in **Appendix I**).

The Proposed Action is also to amend the CGBA RMP to change the VRM classification of approximately 594 acres of BLM-administered public lands, which would contain the proposed transmission line ROW, from their current classification of Class II to Class IV. The newly created Class IV area would buffer the north and east side of Pass Road by 350 feet and extend south and west of Pass Road to the existing Class III boundary, and connect to existing VRM Class IV areas to the northwest and southeast (**Figure 1.4-1** in **Appendix I**).

2.1.1 Right-of-Way

Under the Proposed Action, the requested ROW for the proposed primary 138kV transmission line would total 15.3 miles in length, of which 12.0 miles, covering 122.8 acres, would be on BLM-administered land. The requested ROW would be 60 feet wide (30 feet each side of the center line) except for 7.3 miles, over the Mineral Mountains, where the requested ROW would be 100 feet wide (50 feet each side of the center line; see **Figure 2.1-1** in **Appendix I**).

The ROW would extend from the applicant's interconnected system in the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 8, T. 29 S., R. 8 W., Salt Lake Base and Meridian (S.L.B. & M.), in a northwesterly direction to the applicant's interconnected system in the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 7, T. 28 S., R. 10 W., S.L.B. & M. **Appendix C** contains detailed project maps that number the poles along the proposed transmission line. The 60-foot wide ROW would begin at structure 136 (Section 8, T. 29 S., R. 8 W.) and continue 2.4 miles west to structure 173 (middle of Section 12, T. 29 S., R. 9 W.), where it would change to a 100-foot wide ROW. At that point structures would mostly change from single to double and triple poles. The wider ROW (100 feet wide vs. 60 feet wide) would be needed to accommodate double and triple poles, which would be wider than the single poles, along with necessary workspace. The 100-foot wide ROW would continue west-northwest over Mineral Mountains for 7.3 miles. At structure 240 the ROW would return to 60 feet wide (SE $\frac{1}{4}$ of Section 24, T. 28 S., R. 10 W.) and would continue west-northwest to structure 327, terminating at the Milford Substation (Section 7, T. 28 S., R. 10 W.), located 5.6 miles from structure 240.

In addition to BLM-administered lands, the requested ROW would cross 3.3 miles of private land encompassing about 23.9 acres.

2.1.2 Facility Design

Route and Redundancy. The route of the Proposed Action would physically separate the proposed 138 kV transmission line from the existing 46 kV system such that simultaneous damage to both systems would be unlikely, resulting in redundancy in the system.

Transmission Line. The transmission line would be supported on single, double, and triple, wood pole “TG” (raptor-safe) type structures (**Appendix D**). Concern regarding avian electrocutions on transmission lines has resulted in the development of avian-safe (or raptor-safe) design guidelines (APLIC 2006). The standard raptor-safe design includes a minimum vertical separation of 60 inches between conductors. Adequate spacing (60 inches or greater, see **Appendix D**) between conductors would be implemented for this project per Avian Power Line Interaction Committee (APLIC) recommendations. These standards have been met or exceeded in the Rocky Mountain Power *Utah Avian Protection Plan* (RMP 2011), accepted by the BLM. These design features would minimize the potential for avian electrocutions on the transmission lines.

In general, single poles would be installed in the 60-foot ROW section, and double and triple (H frame) pole structures would be installed in the 100-foot ROW, although a few single poles would be installed in the 100-foot ROW between poles 145 and 172 (see **Appendix C**).

Triple pole structures would be installed at large turning points and double pole structures would be installed as tangent and small angle turning points.

The transmission line would have approximately 79 single pole, 48 double pole, and 10 three pole wood structures on BLM-administered land. An additional 52 single poles would be installed on private property. Poles would be between 55 and 90 feet in height from ground to top. The distance from the pole to the conductor attached to each insulator would be at least 66 inches. There would be five vertical feet between each conductor. These specifications meet or exceed the “Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006” (APLIC 2006).

Substation. The existing Cameron Substation is located on 1.7 acres of private land east of Beaver, Utah. **Figure 2.1-2** (found in **Appendix I**) presents the work planned in the vicinity of the Cameron Substation. The Cameron Substation would be expanded by 1.0 acre of private land to the west-northwest. The expanded yard would be enclosed with a precast concrete wall and chain link fence. A new ring bus would be constructed and the existing three-inch bus would be extended to connect to the new ring bus in the expansion area. The ground grid would be expanded to cover the substation expansion area.

Four existing poles in the vicinity of the Cameron Substation would need to be replaced and new poles added to accommodate the new infrastructure associated with the substation expansion. Three triple pole structures would be added on private lands to the north and south of the substation expansion area, and one double pole structure would be added on BLM-administered lands to the north of the substation. Total permanent disturbance for the proposed additional poles would be less than 0.01 acre. Pole replacement would temporarily disturb 2.9 acres, 1.9 acres of private land and 1.0 acre of BLM-administered land.

2.1.3 Facility Construction

As soon as weather permits, the ROW would be staked and flagged by placing a stake in the ground at each structure location. Primary access to the ROW from State Route 21 would be Pass Road. Portions of the ROW directly correspond with Pass Road's route; therefore, Pass Road would be the construction access for those segments. Other pole areas would be accessed by overland travel outside the ROW, or spur routes, from Pass Road. Approximately 7.7 miles of temporary spur routes would be needed (0.6 mile outside the ROW). These spur routes would be bladed routes measuring approximately 12 feet in width, totaling 10.4 acres (1.5 acres outside the ROW) of disturbance. Planned spur routes are identified on the Pole Locations and Access Routes maps found in **Appendix C**. An estimated 6 miles of existing access would be used within the ROW.

Vegetation within the ROW would be managed according to the wire zone-border zone concept, in compliance with PacifiCorp's Transmission and Distribution Vegetation Management Program (PacifiCorp 2008). The wire zone is the portion of the ROW that includes an area extending 10 feet out from either side of the wire(s). The border zone is the portion of the ROW between the wire zone and the ROW boundary. For this type/size of transmission line and components, vegetation within the wire zone would be comprised of grasses, legumes, herbs, ferns, and low-growing shrubs (under 5 feet at maturity). Vegetation in the border zone could consist of tall shrubs or short trees (up to 25 feet in height at maturity), grasses, and forbs.

Prior to construction, large vegetation, including trees and larger shrubs (vegetation that would be more than 5 feet high at maturity), would be removed from temporary access routes and within the wire zone to meet the above described specifications. Trees in the wooded areas within the wire zone (35 feet wide for single poles and 50 feet wide for double poles) of the ROW (estimated to be approximately 48.6 acres under the Proposed Action) would be cleared to avoid potential contact with conductors and other potential construction and maintenance problems associated with the trees, such as interference with equipment operation or those that pose a threat to the safety of workers. Trees would be felled using a chainsaw and would be lopped and scattered or bull hogged within the ROW. Slash would be scattered within the ROW outside the wire zone.

In compliance with WO IB 2012-0097, an appraisal would be conducted prior to vegetation disturbance to establish the appraised value of any wood products that would be cleared from the ROW. In conjunction with the project, the BLM would contract with PacifiCorp for sale of any affected wood products.

Pole structures would generally be installed in sequential order starting from either end of the line. The sequence of construction may be altered due to weather, wildlife timing restrictions, or other factors. Holes would be dug for the poles using a backhoe, trackhoe, or auger, except for locations accessed by helicopter. Blasting may be required for placement of poles in rocky areas. Rubber tired or track vehicles would be used to haul the structure components (poles, insulators, crossarms, hardware, etc.) to the pole locations; the type of vehicle used will be dependent on the type of equipment needed, type of access available, and local site conditions.

Depending on the topography, final design, and sensitivity of the area, a helicopter would also be used to deliver poles at some pole locations. Pole foundations would be hand dug (using manual tools) and helicopters would be used for poles 182, 201, and 202 (**Figure 2.1-3** in **Appendix I**) which would be placed in areas of steep topography where overland access to or between poles would not be possible or where these methods would avoid unnecessary environmental impacts.

Poles would be assembled on the ground within a short-term disturbance area at the pole locations and erected by a boom truck. In areas not vegetated with trees that would require cutting, lower vegetation types (shrubs, etc.) would be trampled and crushed. Typical structure installation at each pole location would involve short-term surface disturbance of approximately a 100 by 50-foot rectangle area around each structure; totaling approximately 29.5 acres. Short-term disturbance areas are those areas that would be disturbed in conjunction with construction and rehabilitated at the completion of construction. Beginning with staking and flagging of the route (described above), through stabilization and rehabilitation (see **Section 2.2**) there would be intermittent activity at each pole location over the course of the 12 month construction period.

When structures are in place, the conductors would be strung. A pulling line, or sock line, would be laid along the route by a light vehicle (where there is vehicular access within the ROW) or by hand. Ground crews would place the sock line in pulleys on each structure at the conductor location. Approximately nine pulling stations would be required within and adjacent to the ROW. Each pulling station area (see maps in **Appendix C**) would measure approximately 800 by 100 feet, and would be used to pull the conductor through the pulleys using a reel truck.

Estimated disturbance associated with the Proposed Action is detailed in **Table 2.1-1**.

After installation, there would be permanent disturbance consisting of the presence of each pole in the ground. The permanent disturbance would consist of an area approximately a five by five-foot square with the pole in the center. Total permanent disturbance associated with the presence of 257 poles would be less than 0.2 acre.

Total short-term disturbance associated with pulling stations would be 12.4 acres. Pulling stations at corners would be partially located outside of the ROW. These pulling stations would also be used as framing and turn-around pads. The only required staging area would be established at PacifiCorp's Milford Substation/Service Center; no new surface disturbance would be required at the staging area.

Construction would take approximately 12 months and would begin as soon as the necessary authorizations have been obtained. The number of trips needed to set each pole (transport material, dig the hole, set the pole, run the sock line, etc.) would be approximately six trips per pole. The total number of trips needed to set the poles would be about 816 on BLM-administered land and about 216 on private land.

Table 2.1-1 Summary of Estimated Disturbance for the Proposed Action

Project Component		BLM	Private	Total
Miles of ROW	60-foot-wide ROW	4.7	3.3	8.0
	100-foot-wide ROW	7.3	0	7.3
	Total Miles of ROW	12.0	3.3	15.3
Acres of ROW	60-foot-wide ROW	34.1	23.9	58.0
	100-foot-wide ROW	88.7	0	88.7
	Total Acres of ROW	122.8	23.9	146.7
Number of Poles	Single	79	52	131
	Double	48	0	48
	Triple	10	0	10
Acres of Short-term Disturbance* – Poles		15.7	6.0	21.7
Acres of Long-term Disturbance** – Poles		<0.2	<0.1	<0.2
Number of Pulling Stations		7	2	9
Acres of Short-term Disturbance* – Pulling Stations	Within ROW	5.8	0.8	6.6
	Outside ROW	4.1	1.7	5.8
Miles of Access to be Constructed	Within ROW	6.1	1.0	7.1
	Outside ROW	0.6	0	0.6
Acres of Short-term Disturbance* from Access Construction		9.7	1.5	10.4
Miles of Existing Roads that would be used for Access within the ROW		6.0	1.7	7.7
Acres of Disturbance from Substation Construction	Short-term*	1.0	1.9	2.9
	Long-term**	<0.01	1.1	1.1
Acres of vegetation to be cut during construction and maintained (cut when necessary) over the life of the line within the ROW***		48.6	0	48.6
Total Acres of Disturbance	Short-term - Infrastructure*	35.3	12.1	47.4
	Long-term - Infrastructure**	<0.2	1.1	1.3
	ROW Vegetation Management***	48.6	0	48.6

* Short-term disturbance areas are those areas that would be disturbed in conjunction with construction and rehabilitated at the completion of construction.

**Long-term disturbance areas are those areas that would remain disturbed upon completion of construction, such as poles and the substation expansion. Areas of long-term disturbance on BLM land would be reclaimed at the end of the life of the transmission line.

***ROW vegetation management during construction and maintenance over the life of the project would result in short- and long-term impacts, depending on the resource. Cut areas would be seeded and would be expected to revegetate, resulting in short-term impacts to resources such as soils and water. Maintaining the wire zone free from trees would result in long-term impacts to visual resources and forest products. Vegetation management acreage would overlap with short- and long-term disturbances in some cases.

The types of equipment and vehicles anticipated to be used in the project include pickup trucks, bucket trucks, rubber-tired or track-mounted augers, cranes, cement trucks, flatbed reel trucks, off highway vehicles (OHVs), and tractor trailers. There would be three to seven vehicles in or around construction sites or in the ROW at any one time. The work force on construction sites or in the ROW at any one time would be approximately five to ten people. During project activities, vehicle parking and material stockpiles would be located within the ROW on disturbed areas (e.g., access routes, pole locations, substations).

No vehicle refueling would occur within the ROW or along off-ROW access routes. Diesel fuel, gasoline, engine oil, and antifreeze in mobile equipment are the only hazardous material liquids proposed for use on the ROW during construction and maintenance. No toxic or hazardous substances would be stored in the ROW or generated during maintenance or any phase of the project. Toxic or hazardous substances (such as those listed above) used in conjunction with the project would be stored at PacifiCorp's Milford Substation/Service Center.

All areas of temporary disturbance, including temporary spur routes, would be rehabilitated in accordance with the Design Features to Reduce Impacts presented in **Section 2.2, Stabilization and Rehabilitation.**

2.1.4 Operation and Maintenance

PacifiCorp would maintain the ROW in accordance with the BLM grant stipulations. Trees within the ROW would be maintained at a low profile over the life of the project, following the wire zone/border zone concept described in **Section 2.1.3.** The wire zone, would be maintained free of trees and larger vegetation; trees would be felled using a chainsaw and would be lopped and scattered or bull hogged within the ROW. Slash would be scattered within the ROW outside the wire zone. Given the vegetation communities present within the ROW, minimal maintenance of vegetation within the border zone would be anticipated to maintain trees and shrubs below 25 feet in height.

Routine maintenance activities are ordinary maintenance tasks that have historically been performed and carried out on a routine basis to identify and repair any deficiencies. As a part of routine maintenance, the transmission line would have regularly scheduled visual inspections via off road vehicles or helicopter. Routine maintenance activities would not require new ground disturbances; however, previously disturbed areas may be redisturbed. Access would be via existing access routes where possible; former temporary access routes (to specific pole locations, for example) may be reused if necessary. Routine maintenance would follow the same precautions as taken during construction. BLM would be contacted prior to initiation of routine maintenance activities on public lands.

Emergency maintenance activities are those activities necessary to repair a power line or prevent damage to a line. Such work is required to eliminate a safety hazard, prevent imminent damage to the power line or to restore service in the event of an outage. Emergency maintenance would involve prompt movement of crews to repair or replace any damage. BLM would be contacted in a timely manner regarding emergency maintenance on public lands. Crews would be instructed to protect plants, wildlife, and other environmental resources.

Restoration procedures following completion of routine or emergency maintenance (raking out tracks, recontouring disturbed areas if needed, reseeding, etc.) would be similar to those previously described for construction.

2.1.5 Design Features to Reduce Impacts

The following Design Features to Reduce Impacts would be implemented to minimize environmental impacts from the proposed Project under any of the Action Alternatives. These design features would also apply to operation and maintenance of the completed transmission line. The BLM may inspect the project both during and after project completion to ensure compliance with these design features and other requirements.

Air Resources: When needed, water would be applied to the ROW, temporary spur routes, and/or access routes throughout the construction period to control dust emission levels.

Water Resources: All perennial and intermittent streams and dry washes would be spanned by the transmission line with a buffer of at least 10 feet between the stream bank and the nearest pole. To the extent practical, all disturbances associated with installation of poles would be on the upslope side of the pole. In areas where there is a perceptible slope, straw waddles would be placed or silt fence constructed downslope of disturbance to impede sediment from entering surface waters. Straw waddles or silt fence would be maintained until disturbance areas are successfully revegetated.

In order to minimize disturbance and protect water resources to the extent possible, poles would be placed as far away as possible from wetlands or riparian areas, as agreed upon with the BLM. Disturbance within 100 meters of riparian areas would be avoided, where possible, or minimized, in compliance with UT IM 2005-091. Poles would be located to achieve at least 100 meters of separation from riparian areas in compliance with UT IM 2005-091, where possible. In areas where at least 100 meters of separation from riparian areas could not be achieved, poles would generally be placed as far away as possible from riparian areas, on the opposite side of Pass Road from water resources to create a buffer between the disturbance and water resources, as agreed upon with the BLM. Poles to be installed on the Cherry Creek side of Pass Road would have straw waddles or silt fence installed on the downslope side of the disturbance area to prevent water erosion from reaching Cherry Creek or its associated riparian area. Cutting of trees within the ROW in areas within 100 meters of riparian areas would be minimized, and avoided where no barrier (such as Pass Road) exists.

In the process of managing vegetation within the ROW, machine work would not be within 50 feet of a live stream (PacifiCorp 2008).

BMPs would be used as needed to control stormwater discharges. These practices include material handling and temporary storage procedures that minimize the exposure of potential pollutants to stormwater, spill prevention and response, sediment and erosion controls, and physical stormwater controls. Site runoff would be controlled and managed in accordance with BLM BMPs.

Hazardous Materials and Wastes: No vehicle refueling would occur within the ROW or along off-ROW access routes. Covered dumpsters located on the Project Area would contain all refuse. Refuse would be removed on a regular basis to an approved disposal

facility. Portable toilets would be used on site, and would be maintained on a regular schedule. Upon project completion, all construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes would be removed from the site and disposed of properly.

The only substantial sources of potential petroleum or other hazardous material spills would be from mobile equipment. No refueling of vehicles would occur within the ROW or along off-ROW access routes. If a fuel/oil or other hazardous material spill were to occur, the BLM and other required regulatory agencies would be contacted as soon as possible, actions would be taken immediately to minimize the amount and spread of the spill material, and cleanup would be conducted in accordance with a BLM-approved spill prevention, control, and countermeasures (SPCC) plan.

Such measures may include straw bale plugs, earthen berms, or use of other absorbent materials. If necessary, soil remediation would be conducted and would include the removal of contaminated soils to an approved facility and a soil sample(s) would be taken to verify the success of the site remediation. In addition, PacifiCorp would follow any other local, state, or federal regulations related to the use, handling, storing, transporting, and disposing of hazardous materials.

Fire Prevention and Protection: All construction personnel would have fire tools and extinguishers available at all times and would be trained in basic fire control procedures. Construction staff would adhere to all BLM-required Fire Prevention and Suppression Measures. During the operations and maintenance phase of the project, vegetation would be maintained clear of poles, and any or all trees within the ROW would be removed or maintained at a height that would not contact the conductors, or pose a fire hazard.

All areas would be revegetated per the Stabilization and Rehabilitation section below. The spread of weeds, which tend to increase fire hazard, would be controlled per the Invasive, Non-native Species section below.

Woodland Products and Forestry: Cutting of trees would be limited to areas of absolute necessity for safe construction, operations, and maintenance practices. Specifically, within the ROW cutting of trees would be limited to the wire zone and access routes. As described in **Section 2.1.3**, an appraisal would be conducted prior to construction to establish the appraised value of any wood products that would be cleared from the ROW, and PacifiCorp would purchase those wood products through a contract with the BLM.

Cultural Resources: A project-specific Class III pedestrian cultural resource inventory for the Proposed Action ROW has been completed. The results of this survey were documented in a report, with associated maps, and submitted to the BLM. The BLM consulted with the Utah State Historic Preservation Office on the determinations of eligibility and effect to National Register eligible sites within the Area of Potential Effect for this undertaking. Overall, the majority of National Register eligible sites would be avoided through project design, such as spanning sites and limiting construction equipment to existing roads. However, it was determined that two sites would be adversely effected by the Proposed Action ROW.

Because of this potential adverse effect, a historic properties treatment plan was prepared in consultation with the SHPO, the Hopi Tribe and the Paiute Indian Tribe of Utah for these two sites (42BE874 and 42BE3662). Mitigation measures outlined in the Historic Properties Treatment Plan include archaeological methods such as artifact analysis and archaeological monitoring

All other National Register eligible sites (11 total) would be flagged for avoidance, prior to construction, to ensure that they aren't adversely affected by any construction activities. Archaeological monitoring during construction will also take place at all National Register eligible sites.

If, during any project activities, cultural, historical, or prehistoric resources, including any potentially of Native American religious interest, are inadvertently discovered, the BLM Authorized Officer would be notified and all work in the area would cease. A professionally trained archeologist would work with the Utah State Historic Preservation Office (SHPO) and affiliated or interested Tribes to determine eligibility for the National Register of Historic Places (NRHP). Construction personnel would be instructed to watch for cultural artifacts while working on the project. In the event vertebrate paleontological resources are discovered, including human remains, the BLM Authorized Officer would be notified.

Visual Resources: The proposed transmission line would not be routed along ridgelines while traversing the Mineral Mountains, minimizing skylining from the perspective of viewers. The project would use dark wood poles and non-reflective wire that would blend and reduce contrast with the natural surroundings. Revegetation of disturbance areas both within and outside the ROW would help reduce the appearance of contrast in areas with grassland and shrub vegetation. Where trees would be cut within the ROW, the edges of the ROW would be feathered somewhat (in a manner, and to an extent determined by the BLM) to reduce the visual impression of a "crisp" line at the ROW margins.

Human Health and Safety: The contractor performing blasting, if necessary, would comply with applicable regulations and standards established by the regulatory agencies, codes, and professional societies, including the rules and regulations for storage, transportation, delivery, and use of explosives. Whenever blasting operations are in progress, explosives would be stored, handled, and used as provided by law, including safety and health regulations for construction. No explosives would be stored on the Project Area.

Construction sites would be managed to prevent harm to any person and property. During construction, all employees, project managers, supervisors, inspectors, contractors, and subcontractors would be required to conform to contractor safety procedures. All personnel would be adequately trained to perform their tasks. Heavy equipment would be outfitted with Occupational Safety and Health Administration-required safety devices such as backup warnings and seat belts. Hard hats, safety boots, ear and eye protection, and other personal safety equipment would be available to any personnel requesting it. All accidents and injuries would be reported to the appropriate contractor safety officer.

Invasive, Non-Native Species: All equipment, including pickup trucks and passenger vehicles, would be cleaned of soils, seeds, vegetative matter, or other debris or matter that could contain or hold noxious seeds prior to entering the Project Area. The cleaning of equipment would also be done any time thereafter if the equipment leaves the Project Area, is used on another project, and reenters the Project Area. PacifiCorp would follow any regulations pertaining to control of noxious weeds on BLM land. Specifically, Scotch thistle will be controlled prior to construction using BLM approved methods or will be buffered by at least 100 feet and avoided by construction and maintenance personnel and equipment. PacifiCorp would be responsible for any future weed control work, if needed, as a result of the implementation of this project. Any proposed use of herbicides would comply with BLM requirements.

Public Access: Baseline public access levels to the ROW would be maintained. However, new access created by the project would be reclaimed and would not be available to the public after project completion. When feasible, access roads that traverse crucial or substantial mule deer ranges would be gated or blocked to limit public access during the project. New access created by the project would be reclaimed and would not be available to the public after project completion. Methods for reclamation include obstructing the path with berms or boulders, revegetating the surface, or restoring the road to its natural contour and vegetation.

Stabilization and Rehabilitation: Vegetation removal would be kept to that necessary to install the line and for future safe operation in accordance with PacifiCorp's Transmission and Distribution Vegetation Management Program (PacifiCorp 2008). Any brush or trees removed during construction would be used as mulch during reclamation activities.

All areas subject to short-term ground disturbance (e.g., pole areas, spur routes) would be restored to original contours. Disturbed areas around poles and on spur routes would be raked and seeded. All area within the ROW that would be clear cut of trees would be seeded as soon as practicable. A certified weed-free seed mix, approved by the BLM, would be used during reclamation activities, and would utilize native species found in or endemic to the area (see **Appendix E**). The objective of reclamation would be to restore temporarily disturbed areas impacted as part of this project to at least 50 percent of the range site potential within three years of completion of restoration efforts. If the rehabilitation objective is not achieved, PacifiCorp would be responsible for further restoration activities or shall provide monetary compensation to BLM to complete any additional restoration activities. Monitoring and final evaluation of the success of reclamation would be the responsibility of PacifiCorp in close coordination with the BLM.

Any trees felled as part of vegetation maintenance (following PacifiCorp 2008) would be lopped and scattered or bull hogged within the ROW, and outside of the wire zone. PacifiCorp would be responsible for further restoration activities or monetary compensation if rehabilitation objectives are not achieved.

Soils. Stabilization and revegetation efforts would be especially focused in areas of soils that are farmlands of statewide importance or soils susceptible to wind and water erosion, in order to re-establish vegetation and prevent erosion or other deterioration of

important farmlands. Tree cutting within the ROW would not occur in areas of soil units sensitive to wind or water erosion.

Livestock Grazing: PacifiCorp would ensure that any livestock grazing facility improvements and pipelines would remain in a serviceable condition. If damage occurs to any pipelines, fences, or other improvements, PacifiCorp would be responsible for the immediate repair or replacement. PacifiCorp would coordinate with the BLM to avoid conflicts with grazing activities in specific areas, such as adjusting planned construction during times when cattle are being moved into or out of the area. Vehicles operating in the allotments would obey all posted speed limits and use caution to avoid collision with livestock.

Upon completion of the project, the objective of reclamation would be to restore temporarily disturbed areas impacted as part of this project to at least 50 percent of the range site potential within three years of completion of restoration efforts. If the rehabilitation objective is not achieved, PacifiCorp would be responsible for further restoration activities or shall provide monetary compensation to BLM to complete any additional restoration activities. Monitoring and final evaluation of the success of reclamation would be the responsibility of PacifiCorp in close coordination with the BLM.

During the operations and maintenance phase of the Project, maintenance or repairs requiring extensive work within an allotment would be coordinated with the permittee through the BLM to avoid conflicts.

Wildlife: General Wildlife (e.g., jack rabbits, lizards, snakes, squirrels, etc.) and Protected Species (e.g., those species protected under various State, Federal, and BLM laws or regulations, like special status species); see **Section 3.2.4**.

General Provisions: No firearms, air guns, or archery equipment would be allowed on the project sites to prevent shooting of any wildlife. No pets would be permitted on project sites, as they are prone to harassment (i.e., chasing) of wildlife that can lead to death or stress of wildlife individuals. To prevent entrapment of wildlife during construction, any open pits (pole holes) would be monitored throughout the construction day. Excavated pits more than two-feet deep would be covered at the close of each day. Alternatively, fencing may be erected around open pits or trenches. At the beginning of the construction day and before pits are filled, they would be inspected for trapped wildlife. If any wildlife are found, they would be moved out of harm's way. No pesticides would be used on project sites. Encounters with a special status species would be reported to the BLM and/or the appropriate oversight agency (e.g., U.S. Fish and Wildlife Service [USFWS]). Any contractor or employee who inadvertently kills or injures a protected species would immediately report the incident to the BLM and/or the appropriate oversight agencies. Any required blasting would be scheduled outside fawning or other biologically sensitive times.

Greater Sage-grouse: No construction or maintenance activities would occur within Utah Division of Wildlife Resources (UDWR) mapped occupied greater sage-grouse (*Centrocercus urophasianus*) habitat between March 15 and June 15. Preconstruction greater sage-grouse (spring) surveys will be required prior to any ground disturbing activities. Other design/mitigation features include reclamation (see above) and avoidance if possible. If avoidance of habitat is not possible, disturbance and activity

would be minimized and appropriate mitigation would be applied, in coordination with the BLM and UDWR, for such impacts (UDWR 2013). Construction monitoring in greater sage-grouse habitat could also minimize impacts by halting activities if greater sage-grouse are discovered near construction sites. PacifiCorp would install perch deterrents and guy wire flight deterrents in areas identified by the BLM and UDWR as having the potential for greater sage-grouse, depending on the pole design in those specific areas. Speeds for equipment utilizing temporary or permanent access routes in conjunction with the project would be limited to 20 miles per hour to reduce potential for collision with greater sage-grouse, as well as other wildlife.

Big Game: No construction or maintenance activities within mule deer summer range from May 1 to June 15 and crucial winter range from November 15 to April 30. When feasible, access roads that traverse mapped crucial or substantial mule deer habitat would be gated or blocked to limit public access during the project. New access created by the project would be reclaimed and would not be available to the public after project completion. Methods for reclamation include obstructing the path with berms or boulders, revegetating the surface, and restoring the road to its natural contour.

No construction or maintenance activities within pronghorn fawning range from April 15 to June 15.

Raptors and Migratory Birds: In order to avoid or minimize impacts on the nesting success of raptors, activities would not occur within recommended spatial and seasonal buffers, and would follow Utah BLM Best Management Practices for Raptors and Their Associated Habitats in Utah (BLM 2006). Spatial buffers would be one half mile and seasonal buffers (BLM 2006) would be March 1 – August 31 for species observed in the Project Area (see **Chapter 3**).

If golden eagles are determined to be nesting in the area, spatial buffers would remain at one half mile but seasonal buffers could be extended to January 1 – August 31 (BLM 2006). If existing topography limits actual line-of-sight between an active nest (i.e., the nest has eggs or young) and construction activities, the spatial and seasonal buffers could be reduced if approved by the BLM based on site specific analysis. Raptor surveys would be completed during the spring/summer prior to construction.

When work would occur during the migratory bird nesting season (generally defined as April 1 – July 30 [BLM 2008] a migratory bird nesting survey would be completed 72 hours prior to construction in a particular area. If an active nest were discovered, the BLM biologist would be notified and a 100-foot buffer would be established around the nest to prevent nest abandonment until after the migratory bird nesting season or until the young have fledged.

Raptor electrocutions would be minimized by utilizing adequate spacing (60 inches or greater, see **Appendix D**) between conductors per APLIC recommendations (APLIC 2006). These design features, built in accordance with Rocky Mountain Power's *Utah Avian Protection Plan*, would minimize the potential for avian electrocutions on the transmission line (RMP 2011). With the possible exception of emergency maintenance, the BLM would be contacted prior to any maintenance activities.

Termination: If the project is to be terminated or abandoned, a joint inspection would be held with the BLM and PacifiCorp. This would be held to agree upon an acceptable rehabilitation plan for the area.

2.2 Alternative 1- Southern Route

Alternative 1, the Southern route, would avoid areas designated VRM Class II and would not require amendment of the CBGA RMP. The ROW for this alternative deviates from the proposed ROW beginning at pole 173, shifting the transmission line to the south around the base of Bradshaw Mountain, then turns north briefly paralleling State Route 21, and eventually reconnecting with the proposed ROW near pole 288 (**Figure 1.1-1 in Appendix I**).

2.2.1 Right-of-Way

Under Alternative 1, the requested ROW for the proposed primary 138kV transmission line would total 19.6 miles in length, of which 12.3 miles, covering 115.2 acres, would be on BLM-administered land. The requested ROW would be 60 feet wide (30 feet each side of the center line) except for 6.4 miles where the requested ROW would be 100 feet wide (50 feet each side of the center line; see **Figure 1.1-1 in Appendix I**).

The ROW would extend from the applicant's interconnected system in the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 8, T. 29 S., R. 8 W., S.L.B. & M., in a northwesterly direction to the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 12, T. 29 S. R. 9 W., at which point the proposed transmission line would turn in a southerly direction until it reached the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 14, T. 29 S., R. 9 W., S.L.B. & M.; the line would then turn and travel west for approximately 8.2 miles to the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 15, T. 29 S., R. 10 W., S.L.B. & M. At this point the line would turn north for approximately 5.5 miles to the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 16, T. 28 S., R. 10 W., S.L.B. & M., where it would again extend in a northwesterly direction terminating at the Milford Substation (Section 7, T. 28 S., R. 10 W.).

In addition to BLM-administered lands, the requested ROW would cross 6.2 miles of private land and 1.1 miles of State Institutional Trust Lands Association (SITLA) land, encompassing about 45.1 and 13.3 acres, respectively.

2.2.2 Facility Design

Route and Redundancy. The Alternative 1 route would provide redundancy similar to the Proposed Action, which would physically separate the proposed 138 kV transmission line from the existing 46 kV system such that simultaneous damage to both systems would be unlikely, resulting in redundancy in the system.

Transmission Line. The transmission line would be supported on single, double, and triple, wood pole "TG" (raptor safe) type structures as described for the Proposed Action in **Section 2.1.2**. The transmission line would have approximately 76 single pole, 56 double pole, and 5 three pole wood structures on BLM-administered land. An additional 84 single pole structures would be installed on private property; and 10 double pole structures would be installed on SITLA land. Poles would be designed as described in for the Proposed Action in **Section 2.1.2**.

Substation. Proposed expansion of the existing Cameron would occur as described for the Proposed Action in **Section 2.1.2.**

2.2.3 Facility Construction

Facility construction under Alternative 1 would generally be as described for the Proposed Action in **Section 2.1.3** with a few exceptions. Alternative 1 would require a total of 9 pulling stations and approximately 11.1 miles of new access (overland travel). Pole foundations would be hand dug (using manual tools) and helicopters would be used for approximately five poles, which would be placed in areas of steep topography where overland access to or between poles would not be possible or where these methods would avoid unnecessary environmental impacts. Estimated disturbance associated with Alternative 1 is detailed in **Table 2.2-1.**

As under the Proposed Action, any trees in the wooded areas within the ROW under Alternative 1 (estimated to be 46.4 acres of mostly pinyon-juniper) would be cleared during construction and would be maintained at a low profile over the life of the project. Trees would be felled using a chainsaw and would be lopped and scattered within the ROW.

Table 2.2-1 Summary of Estimated Disturbance for the Alternative 1 Southern Route

Project Component		BLM	Private	SITLA	Total
Miles of ROW	60-foot wide ROW	7.0	6.2	0	13.2
	100-foot wide ROW	5.3	0	1.1	6.4
	Total Miles of ROW	12.3	6.2	1.1	19.6
Acres of ROW	60-foot wide ROW	50.9	45.1	0	96.0
	100-foot wide ROW	64.2	0	13.3	77.6
	Total Acres of ROW	115.2	45.1	13.3	173.6
Number of Poles	Single	76	84	0	160
	Double	56	0	10	66
	Triple	5	0	0	5
Acres of Short-term Disturbance* – Poles		15.8	9.6	1.2	26.6
Acres of Long-term Disturbance** – Poles		0.1	<0.1	<0.1	0.2
Number of Pulling Stations		6	3	partial	9
Acres of Short-term Disturbance* – Pulling Stations	Within ROW	1.9	0.9	0	2.8
	Outside ROW	7.2	2.2	.1	9.5
Miles of Access to be Constructed	Within ROW	8.6	0.1	2.4	11.1
	Outside ROW	0.4	0	0.3	0.7
Acres of Short-term Disturbance* from Access Construction		13.3	3.9	0.1	17.3
Miles of Existing Roads that would be used for Access within the ROW		2.2	1.4	0	3.6

Project Component		BLM	Private	SITLA	Total
Acres of Disturbance from Substation Construction	Short-term*	1.0	1.8	0	2.8
	Long-term**	<0.01	1.1	0	1.1
Acres of vegetation to be cut during construction and maintained (cut when necessary) over the life of the line within the ROW***		39.7	0	6.7	46.4
Total Acres of Disturbance	Short-term - Infrastructure*	37.2	18.7	1.4	57.3
	Long-term - Infrastructure**	0.1	1.1	<0.1	1.3
	ROW Vegetation Management***	39.7	0	6.7	46.4

* Short-term disturbance areas are those areas that would be disturbed in conjunction with construction and rehabilitated at the completion of construction.

**Long-term disturbance areas are those areas that would remain disturbed upon completion of construction, such as poles and the substation expansion. Long-term disturbance areas on BLM land would be reclaimed at the end of the life of the transmission line.

***ROW vegetation management during construction and maintenance over the life of the project would result in short- and long-term impacts, depending on the resource. Cut areas would be seeded and would be expected to revegetate, resulting in short-term impacts to resources such as soils and water. Maintaining the wire zone free from trees would result in long-term impacts to visual resources and forest products.

2.2.4 Design Features

Design features for Alternative 1 would be the same as the Proposed Action, except for the following.

Cultural Resources: Should Alternative 1 be implemented, a Class III cultural resource inventory would be conducted prior to any construction activities. Similar to the Proposed Action, Alternatives 1 would avoid, by design or redesign, NRHP-eligible cultural resource sites. If avoiding any NRHP-eligible sites were not possible, appropriate mitigation of these sites would be implemented. A site-specific treatment plan would be prepared in consultation with SHPO and the Tribes for any NRHP-eligible sites that could not be avoided. All other NRHP-eligible sites would be flagged for avoidance, prior to construction, to ensure no inadvertent construction-related impacts to these sites and to ensure that construction staging areas do not impact the properties. Monitoring of the sites would be conducted. If impacts to any NRHP-eligible sites were necessitated, then testing and mitigation of the site would be conducted prior to construction through development of an approved treatment plan.

Utah Prairie Dog: Portions of the Alternative 1 alignment are mapped as 'requiring low intensity surveys' for Utah prairie dog (*Cynomys parvidens*; UPD). All low intensity survey areas providing suitable UPD habitat that could be impacted by the project (within a 0.5-mile buffer of the ROW or other disturbance areas) would be surveyed prior to project initiation during the UPD active period.

2.3 Alternative 2, Cove Fort to Milford Route

The ROW for Alternative 2, the Cove Fort to Milford route, would cross the Mineral Mountains north of the proposed ROW. This alternative would not require amendment

of the CBGA RMP. Under Alternative 2, an existing 46 kV transmission line between the Cove Fort Substation and the Blundell Geothermal Plant would be replaced by a 138 kV transmission line, which could be constructed within the existing ROW in segments, allowing for the portions of the line under construction to be de-energized. In addition, the line would be extended to the Milford Substation and a new substation would be constructed in the Cove Fort vicinity.

Under Alternative 2, the ROW for the proposed primary 138kV transmission line would total 22 miles in length, of which approximately 16 miles, covering 116 acres, would be on BLM-administered land. In 2007 approximately four miles of the existing 46 kV transmission line was damaged or destroyed by a fire. This stretch of the transmission line was rebuilt, replacing 39 structures with new infrastructure that would support 138 kV transmission and would not need to be replaced should Alternative 2 be selected. For analysis purposes, the disturbance calculations for Alternative 2 in this EA do not include the portion of the route that was previously reconstructed; however, the ROW for the project would include the entire length of the line.

The existing transmission line extends southwest from a small substation at Cove Fort, east of Interstate 15 (I-15) and just south of the intersection of I-15 and I-70 at Cove Fort (**Figure 1.1-1** in **Appendix I**). After crossing the northern extent of the Mineral Mountains, the existing 46 kV transmission line connects to the Blundell Geothermal Plant and continues southwest from Blundell to the Milford Substation.

2.3.1 Right-of-Way

The ROW would extend from the applicant's interconnected system in the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 14, T. 26 S., R. 7 W., S.L.B. & M., in a southwesterly direction for 22.3 miles, terminating at the Milford Substation (Section 7, T. 28 S. R. 10 W.). A section of this power line has already been re-built, the rebuild starts in the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 26, T. 26 S., R. 8 W., S.L.B. & M and spans 39 poles (3.76 miles) in a southwesterly direction with the rebuild ending in the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 5, T. 27 S., R. 8 W., S.L.B. & M.

In addition to BLM-administered lands, the requested ROW would cross 5.7 miles of private land encompassing about 41.3 acres, and 3.7 miles of SITLA land encompassing about 31.9 acres.

2.3.2 Facility Design

Route and Redundancy. Under Alternative 2, the existing 46 kV transmission line would be replaced between the Cove Fort and Milford substations. Approximately 11 miles of the route would be parallel to the existing 46 kV transmission line connecting the Blundell Geothermal Plant with the Milford Substation. This portion of the Alternative route would not provide redundancy in the system because an event, such as wildfire, could damage both the 138 kV system, as well as the portion of the 46 kV system connecting Blundell with the Milford Substation. At the present, the 46 kV system cannot meet peak power demand without assistance from Blundell. Therefore, Alternative 2 would only provide partial redundancy.

Transmission Line. The existing 46 kV line would be replaced within the existing ROW by the proposed 138 kV transmission line. The transmission line would be supported on

single wood pole “TG” (raptor safe) type structures as described for the Proposed Action in **Section 2.1.2**. Poles would be designed as described in **Section 2.1.2**.

Substation. A new substation would be constructed on two acres of BLM-administered public land south and east of the intersection of I-15 and I-70 in the Cove Fort vicinity, near the site of the existing substation.

2.3.3 Facility Construction

Facility construction under Alternative 2 would generally be as described for the Proposed Action in **Section 2.1.3** with a few exceptions. Alternative 2 would require a total of 13 pulling stations and 6.3 miles of new access (overland travel). Estimated disturbance associated with Alternative 2 is detailed in **Table 2.3-1**.

Forested areas along the Alternative 2 ROW have recovered from the 2007 Milford Fire. Because only clearing of occasional scattered trees within the ROW is anticipated, the design features specified under the Proposed Action would not apply under this alternative. Along the Alternative 2 ROW there are no solid forested areas, only occasional scattered trees, and the ROW is presently maintained for the existing transmission line. No additional tree clearing is anticipated.

2.3.4 Design Features

Design features for Alternative 2 would be the same as the Proposed Action, except for the following.

Woodland Products and Forestry: Because no additional tree clearing is anticipated, the design features specified under the Proposed Action would not apply under this alternative.

Cultural Resources: Should Alternative 2 be implemented, a Class III cultural resource inventory would be conducted prior to any construction activities. Similar to the Proposed Action, Alternatives 2 would avoid, by design or redesign, NRHP-eligible cultural resource sites. If avoiding any NRHP-eligible sites were not possible, appropriate mitigation of these sites would be implemented. A site-specific treatment plan would be prepared in consultation with SHPO and the Tribes for any NRHP-eligible sites that could not be avoided. All other NRHP-eligible sites would be flagged for avoidance, prior to construction, to ensure no inadvertent construction-related impacts to these sites and to ensure that construction staging areas do not impact the properties. Monitoring of the sites would be conducted. If impacts to any NRHP-eligible sites were necessitated, then testing and mitigation of the site would be conducted prior to construction through development of an approved treatment plan.

Table 2.3-1 Summary of Estimated Disturbance for the Alternative 2 Cove Fort to Milford Route

Project Component		BLM	Private	SITLA	Total
Miles of ROW*	60-foot wide ROW	15.9	5.1	1.4	22.3
Acres of ROW	60-foot wide ROW	115.5	37	10	162.5
Number of Poles	Single	167	68	16	251
Acres of Short-term Disturbance** – Poles		20.1	16.2	1.8	38.1
Acres of Long-term Disturbance*** – Poles		0.1	<0.1	<0.1	0.1
Number of Pulling Stations		7	5	1	13
Acres of Short-term Disturbance** – Pulling Stations	Within ROW	2.0	2.6	0.3	4.9
	Outside ROW	7.5	5.2	1.1	13.8
Miles of Access to be Constructed	Within ROW	1.8	1.2	0	3.0
	Outside ROW	3.1	0.2	<0.1	3.3
Acres of Short-term Disturbance** from Access Construction		6	1.7	<0.1	7.7
Miles of Existing Roads that would be used for Access within the ROW		1.1	1.7	<0.1	2.8
Acres of Disturbance from Substation Construction	Short-term**	3.0	0	0	3.0
	Long-term***	2.0	0	0	2.0
Acres of vegetation to be cut during construction and maintained (cut when necessary) over the life of the line within the ROW****		0	0	0	0
Total Acres of Disturbance	Short-term**	39.7	24.1	4.5	68.4
	Long-term - Infrastructure***	2.1	<0.1	<0.1	2.2
	ROW Vegetation Maintenance****	0	0	0	0

*ROW mileages shown in the table are for portions of the Alternative 2 existing transmission line that would require construction and do not include the portion of the existing transmission line that has already been rebuilt to support 138 kV transmission. Total ROW length would be approximately four miles longer including the rebuilt section.

** Short-term disturbance areas are those areas that would be disturbed in conjunction with construction and rehabilitated at the completion of construction.

***Long-term disturbance areas are those areas that would remain disturbed upon completion of construction, such as poles and the substation expansion. Acres of forest maintenance would be reclaimed at the end of the life of the transmission line.

****Alternative 2 would replace an existing line within an existing ROW. Current vegetation management for the existing line would continue with no net change in vegetation within the ROW.

2.4 No Action Alternative

Under the No Action Alternative, the requested ROW would not be granted, and a new transmission line would not be constructed.

2.5 Other Alternatives Considered but Eliminated from Further Analysis

During development of alternatives for the project, a total of five alternatives to the Proposed Action were explored. Ultimately the Southern and the Cove Fort to Milford alternatives were carried forward for analysis and the remaining two alternatives were dismissed from detailed analysis. The two alternatives that were dismissed from detailed analysis are discussed briefly in the next two subsections.

2.5.1 New ROW Following State Route 21

The Milford area is currently serviced by an existing transmission line between Cameron and Milford via a route corresponding to State Route 21 (**Figure 1.1-1**). Under this Alternative, 138 kV service would be provided via a new transmission line separate from the existing 46 kV transmission line along State Route 12. The existing lower voltage line would need to remain energized while the new line is under construction; therefore, the new 138 kV transmission line would need to be constructed in and require a new ROW on the opposite side of State Route 21 for safe separation of the energized line from the new line under construction. For safe construction and operation of both the existing 46 kV and 138 kV transmission lines, the new line would need to be separated from the existing line by at least 50 feet. The new ROW would either be parallel and adjacent to the existing ROW, or on the opposite side of State Route 21. The ROW for this route would be considerably longer than the proposed ROW resulting in additional voltage drop. Construction of a new 138 kV transmission line following the route of the existing line to carry higher voltage was considered but ultimately rejected, primarily because upgrading existing lines would not provide for redundancy in the system. Under this Alternative, 138 kV service would either be provided through replaced infrastructure in the existing ROW, which would mean there would be no alternate source of power for the Milford area in case of outage; or via a 138 kV line across the highway from the existing 46 kV system, in which case, as both lines would be vulnerable to the same threat, such as wildfire.

This alternative would avoid impacts to substantial summer mule deer habitat and would disturb 13 acres of crucial winter habitat, which would be half or less the acreage of the disturbance acreage of the analyzed alternatives. However, it would:

- Result in at least twice as much short-term disturbance than the alternatives analyzed in detail in this EA.
- Cross 17.6 miles of low intensity UPD survey area, which would be over three times the distance of the portion of the Alternative 1 route crossing the low intensity survey area; the Proposed Action and Alternative 2 routes would not cross the low intensity survey area.
- Cross 11.6 miles of occupied greater sage-grouse habitat, which would be more than ten times the length of the portion of the Proposed Action route, and three

times the length of the portion of the Alternative 1 route that crosses occupied habitat.

For these reasons and other reasons discussed earlier, the alternative of constructing a transmission line in a new ROW along State Route 21 was eliminated from further analysis.

2.5.2 South Central Route

One alternative route, the South Central route (**Figure 1.1-1 in Appendix I**), was determined to be feasible, and was explored, but ultimately not brought forward for detailed analysis. The ROW for the South Central route alternative deviates from the proposed ROW for approximately five miles through the Mineral Mountains, beginning at pole 173, shifting the transmission line south and generally upslope of Pass Road. The ROW for the South Central route would rejoin the proposed ROW near pole 220.

The ROW for the South Central route would be 0.5-mile longer than the proposed ROW, with an additional 40 double poles and 8 triple poles; this would result in an increase of 12 acres of short-term disturbance, and two additional pulling stations, further increasing short-term disturbance by 3 acres. An estimated additional 2.7 miles of overland travel access routes would be required under this alternative, disturbing 4.8 acres more than the Proposed Action. The lands that the ROW for the South Central route would cross are rugged and steep in places. This alternative would likely require more pole foundations to be hand dug and helicopters used for pole placement than the Proposed Action because the transmission line would be located at higher elevations than the Proposed Action, the transmission line would be skylined from some vantage points, and more visible. The visual impact of the transmission line and its associated ground disturbance would be greater under this alternative. For these reasons, the South Central route was dismissed from detailed analysis.

2.5.3 Design Feature Not Carried Forward - Riparian Buffer Routing Alternative

As explained in **Section 2.1.5**, it is the BLM's policy (UT IM 2005-091) that disturbance within 100 meters of riparian areas would be avoided, where possible, or minimized. In design of the Proposed Action route, PacifiCorp and its contractors evaluated options to minimize overall disturbance in the area of poles 170 through 186. Placement of the transmission line to achieve at least 100 meters of separation from the riparian area (in compliance with UT IM 2005-091) further northeast would have resulted in additional access construction. Placement of the transmission line further southwest of the riparian area would have increased the length of the line, which would have increased overall disturbance and place the line on the south side of Cherry Creek in an area difficult to access. While these alternatives would have achieved the goal of locating the transmission line and associated disturbance outside the 100-meter riparian buffer, ultimately they would have resulted in greater resource disturbance and impacts that would outweigh the benefits of avoiding disturbance within the buffer.

2.6 Alternatives Comparison

Table 2.6-1 compares the estimated disturbance of the Proposed Action and Alternatives.

Table 2.6-1 Alternatives Comparison

Project Component		Proposed Action	Alternative 1	Alternative 2
Miles of ROW	60-foot wide ROW	8.0	13.2	22.3*
	100-foot wide ROW	7.3	6.4	0
	Total Miles of ROW	15.3	19.6	22.3*
Acres of ROW	60-foot wide ROW	58.0	96.0	162.5
	100-foot wide ROW	88.7	77.6	0
	Total Acres of ROW	146.7	173.6	162.5
Number of Poles	Single	131	160	251
	Double	48	66	0
	Triple	10	5	0
Acres of Short-term Disturbance** – Poles		21.7	26.6	38.1
Acres of Long-term Disturbance*** – Poles		<0.2	0.2	0.1
Number of Pulling Stations		9	9	13
Acres of Short-term Disturbance** – Pulling Stations	Within ROW	6.6	2.8	4.9
	Outside ROW	5.8	9.5	13.8
Miles of Access to be Constructed	Within ROW	7.1	11.1	3.0
	Outside ROW	0.6	0.7	3.3
Acres of Short-term Disturbance** from Access Construction		10.4	17.3	7.7
Miles of Existing Roads that would be used for Access within the ROW		7.7	3.6	2.8
Acres of Disturbance from Substation Construction	Short-term**	2.9	2.8	3.0
	Long-term***	1.1	1.1	2.0
Acres of forested vegetation to be cut during construction and maintained (cut when necessary) over the life of the line within the ROW****		48.6	46.4	0

Project Component		Proposed Action	Alternative 1	Alternative 2
Total Acres of Disturbance	Short-term - Infrastructure**	47.4	57.3	68.4
	Long-term - Infrastructure***	1.3	1.3	2.2
	Vegetation Management****	48.6	46.4	0
Amend the CGBA RMP to change VRM Class designations?		Yes	No	No

*ROW mileages shown in the table are for portions of the ROW for the Alternative 2 route that would require construction and do not include the portion of the ROW for the Alternative 2 route that has already been rebuilt to support 138 kV transmission. Total route length would be approximately four miles longer including the rebuilt section.

** Short-term disturbance areas are those areas that would be disturbed in conjunction with construction and rehabilitated at the completion of construction.

***Long-term disturbance areas are those areas that would remain disturbed upon completion of construction, such as poles and the substation expansion. Long-term disturbance areas on BLM land would be reclaimed at the end of the life of the transmission line.

****ROW vegetation management during construction and maintenance over the life of the project would result in short- and long-term impacts, depending on the resource. Cut areas would be seeded and would be expected to revegetate, resulting in short-term impacts to resources such as soils and water. Maintaining the wire zone free from trees would result in long-term impacts to visual resources and forest products. Alternative 2 would replace an existing line within an existing ROW. Current vegetation management for the existing line would continue with no net change in vegetation within the ROW.

3.0 AFFECTED ENVIRONMENT

This chapter presents the potentially affected environment (e.g., the physical, biological, social, and economic values and resources), by resource, of the Project Area. The Project Area encompasses the potentially affected areas within and surrounding the Proposed Action, Alternative 1, and Alternative 2 ROWs. Only those resources present in the Project Area and potentially impacted (determination of PI; see **Appendix B**) are carried forward. Resources potentially affected include soils, water, vegetation, forestry resources, wildlife, range, wilderness, recreation, visual resources, cultural resources, and socioeconomics. This chapter provides the baseline for comparison of impacts/consequences to these resources, which are described in **Chapter 4**.

For some resources it is important to describe the conditions associated with a specific pole; therefore, unique pole numbers are required for each pole. In addition, in order to make poles identifiable with a particular alternative, a series of pole numbers were assigned by alternative. The poles for the Proposed Action were assigned numbers in the 100 to 300 range. Poles for Alternative 1 were assigned numbers in the 400 to 500 range. Poles for Alternative 2 were assigned numbers in the 600 to 800 range (see maps in **Appendix C** for pole numbering for each alternative). The alternative ROWs contain some poles that are also part of the Proposed Action ROW. Each pole is only assigned one number; those poles common to both the Proposed Action and Action Alternatives retain their Proposed Action pole numbering.

3.1 General Setting

The Project Area is located in east-central Beaver County, Utah. This area lies in the Central Basin and Range Ecoregion. This ecoregion is described as having north-south trending mountain ranges separated by broad xeric basins and valleys (CEC 2010). Elevations in the Project Area range between 4,900 and 7,400 feet. Annual precipitation in the Project Area ranges from 10-12 inches (usclimatedata.com). The ecoregion has a dry, mid-latitude desert climate, marked by hot summers and dry winters (CEC 2010).

3.2 Issues Brought Forward for Analysis

3.2.1 Soils

Common soil associations located within the Project Area include Hiko Peak-Decca-Sheeprock (gravelly and very gravelly coarse sandy loam, sandy loam, loam, and sandy clay loam); Snake Hollow-Blackett-Blue Star (coarse sandy loam and sandy loams); Pharo-Pass Canyon (gravelly, cobbly, and very cobbly loams and sandy loams); and Rock Land-Bearskin-Cowers association (sandy loams and gravelly coarse sandy loams). These soils range from gently sloping to very steep, well drained to somewhat excessively drained, and shallow to deep depending on topography. Rock outcrops and rock lands are common throughout the Pharo-Pass Canyon and Rock Land-Bearskin-Cowers associations.

3.2.1.1 Sensitive Soils

For purposes of this analysis, sensitive soils include soils that are highly susceptible to wind or water erosion, prime farmland, and farmland of state-wide importance.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible (NRCS 2012). For this analysis, soils “susceptible” to wind erosion are those in group 1 or 2.

Water erodibility (Kw) is an experimentally measured value that quantifies the susceptibility of soil particles to detach and move via runoff and raindrop impact. Values vary from 0.02 (least erodible) to 0.69 (most erodible) (NRCS 2012). For this analysis, soils “susceptible” to water erosion are those with Kw ≥ 0.4.

The Etta loam series, found within the Project Area near I-15 and the Cove Fort Substation, was identified as Prime Farmland if irrigated by the National Resource Conservation Service (NRCS). Etta loam is found on both BLM and private lands either side of and along I-15 near the point where the Alternative 2 route would cross the interstate. The areas of Etta loam along I-15 are mostly irrigated and presently cultivated with alfalfa hay. The existing transmission line along the Alternative 2 route crosses Etta loam west of I-15 through fields that are irrigated (although there are areas that do not appear to receive any irrigation water), and that are presently cultivated with hay. Currently, the wheel line irrigation system operates in close proximity to the existing transmission line with little, if any loss of irrigation acreage. It is concluded that the existence of the transmission line has resulted in no substantial loss of prime farmlands.

In addition, some land that falls short of the criteria for prime farmland is considered to be “farmland of statewide importance” for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods (NRCS 2011).

Table 3.2-1 lists the soils units present in the Project Area with prime farmland status and erodibility level.

Table 3.2-1 Soils Units in the Project Area

Soil Unit	Sensitive Soils		
	Prime Farmland or Farmland of Statewide Importance	Wind Erodiability Group ¹	Water Erodiability (K _w) ²
Black Ridge extremely rocky silt loam (6 to 30 percent slopes)	No	8	0.15
Blue Star cobbly sandy loam (3 to 10 percent slopes)	No	4	0.17
Cowers-Bearskin Association (2 to 30 percent slopes, eroded)	No	3	0.24
Decca-Hiko Peak Complex (1 to 30 percent slopes)	No	5/3	0.32/0.17
Dixie-Garbo Complex (3 to 8 percent slopes)	No	7/5	0.24/0.10
Escalante-Hiko Peak complex (2 to 10 percent slopes, eroded)	No	3/5	0.28/0.10

Soil Unit	Sensitive Soils		
	Prime Farmland or Farmland of Statewide Importance	Wind Erodibility Group ¹	Water Erodibility (K _w) ²
Etta loam	Yes*	6	0.28
Etta clay, heavily variant	Yes	4	0.28
Fruitland loam (3 to 6 percent slopes)	Yes	4L	0.37
Hansel loam (1 to 3 percent slopes)	No	6	0.32
Harding silt loam (0 to 2 percent slopes)	No	4L	0.55
Haybourne course sandy loam (1 to 10 percent slopes)	No	3	0.24
Heist-Crestline, Thick Surface Complex (0 to 5 percent slopes)	No	3	0.20
Hiko Peak coarse sandy loam (3 to 30 percent slopes)	Yes	3	0.17
Hiko Peak cobbly loam (2 to 10 percent slopes)	No	5	0.20
Hiko Peak gravelly loam, cool (8 to 15 percent slopes)	No	5	0.15
Hiko Peak-Crestline Complex (3 to 8 percent slopes)	No	5/3	0.15/0.20
Hiko Peak Decca Association (1 to 15 percent slopes)	No	5	0.15/0.32
Manderfield loam, moderately deep over gravel (1 to 3 percent slopes)	No	6	0.32
Manderfield gravelly loam (1 to 3 percent slopes)	Yes	7	0.15
Manderfield loam (3 to 6 percent slopes)	Yes	6	0.32
May Day Association (10 to 60 percent slopes)	No	8	0.05
Mill Hollow-Pharo Association (2 to 30 percent slopes)	No	6	0.10/0.05
Mineral Mountain extremely rocky loam (30 to 60 percent slopes)	No	8	0.05
Mud Springs extremely rocky coarse sandy loam (30 to 60 percent slopes)	No	8	0.10
Musinia-Ushar complex (0 to 2 percent slopes)	Yes	6	0.43
Pass Canyon very rocky coarse sandy loam (5 to 30 percent slopes, eroded)	No	6	0.05
Phage cobbly loam (30 to 50 percent slopes, eroded)	No	5	0.20
Phage loam (3 to 10 percent slopes, eroded)	Yes	4L	0.32
Phage very rocky loam (30 to 60 percent slopes, eroded)	No	6	0.10
Phage-Black Ridge association (3 to 30 percent slopes)	No	6/8	0.10/0.15
Phage-Bodacious-Rock outcrop complex (15 to 60 percent slopes)	No	6	0.15
Pits, Gravel-Dumps complex (0 to 4 percent slopes)	No	N/A	N/A
Red Butte Association (3 to 60 percent slopes, eroded)	No	6/8	0.05/0.15
Red Butte very cobbly loam (3 to 50 percent slopes, eroded)	No	6	0.05
Red Rock silt loam (1 to 3 percent slopes)	No	5	0.43
Rock Land	No	N/A	N/A

Soil Unit	Sensitive Soils		
	Prime Farmland or Farmland of Statewide Importance	Wind Erodibility Group ¹	Water Erodibility (K _w) ²
Sheeprock-Cokel Complex (3 to 30 percent slopes)	No	2/5	0.05/0.10
Snake Hollow coarse sandy loam (3 to 10 percent slopes)	No	3	0.20
Snake Hollow coarse sandy loam (3 to 10 percent slopes, eroded)	No	3	0.20
Snake Hollow-Blue Star Association (3 to 10 percent slopes)	No	3	0.20/0.17
Trenton-Bonolden, Very Slightly Sodic Association	No	6/4L	0.32/0.10
Ushar loam (1 to 6 percent slopes, severely eroded)	No	4L	0.37
Ushar loam (3 to 10 percent slopes)	Yes	4L	0.37
Ushar-Mosida Association (3 to 30 percent slopes)	No	6/4L	0.10/0.37
Wallsburg-Maple Mountain Association (3 to 60 percent slopes, eroded)	No	7/8	0.15/0.05
Wet alluvial land	No	N/A	N/A
Woodrow, Slightly Saline – Blue Star Complex (0 to 5 percent slopes)	No	4L/5	0.43/0.10

¹For this analysis, soils “susceptible” to wind erosion are those in group 1 or 2. Source: NRCS 2012

²For this analysis, soils “susceptible” to water erosion are those with Kw ≥ 0.4. Source: NRCS 2012*Identified by the NRCS as Prime Farmland if irrigated.

3.2.2 Water Resources

3.2.2.1 Floodplains

According to the Federal Emergency Management Administration, Milford is located in a No Special Flood Hazard Area Zone C, which is defined as an area of minimal flood hazard, usually depicted on the flood insurance rate maps as above the 500-year flood level. The remainder of Beaver County is Zone D, areas with possible but undetermined flood hazards; no flood hazard analysis has been conducted (FEMA 2011a and b). There are no maps of floodplains for the Project Area.

The Proposed Action, Alternative 1, and Alternative 2 alignments cross the Beaver River and an unnamed canal southeast of Milford. An analysis (JBR 2011) determined the width of the Beaver River floodplain area would likely be confined by various road prisms, and would vary from approximately 700 to 1,500 feet in the areas where the Proposed Action or Alternative 2 alignments cross either the Beaver River or the unnamed canal (or one of its diversions).

3.2.2.2 Hydrology (Surface Water)

The entire Project Area is within the Beaver River watershed. The Beaver River is an intermittent stream in the Milford area, dry at times during the year, but carrying water seasonally and after storm events. The Beaver River crosses an unnamed canal southeast of Milford, carrying water from the West Point Reservoir. The Proposed Action, Alternative 1, and Alternative 2 alignments cross the Beaver River and this unnamed canal. The Proposed Action, Alternative 1, and Alternative 2 alignments also

cross the High Line Canal and the Low Line Canal, which are used for distribution of irrigation water. These canals are located approximately two miles to the east of, and parallel to the Beaver River.

The ROW for Alternative 1 would also cross Cherry Creek very close to where it would join the proposed ROW, between poles 172 and 401.

Named surface waters crossing the alignments are shown in **Figure 3.2-1** (labeled blue lines; figure found in **Appendix I**). All the alignments would also cross several (unnamed) dry washes, depicted by unlabeled blue lines on **Figure 3.2-1**.

3.2.2.3 Springs and Wetland/Riparian Resources

Cherry Creek Spring, a second unnamed spring, and the associated riparian resources, are located west of the location for Proposed Action Pole 183, and west of Pass Road. Cherry Creek Spring is located within the Mineral Mountains Allotment riparian enclosure pasture, approximately 500 feet from the Proposed Action ROW. Cherry Creek, and its associated riparian resources, is down slope less than 100 meters (approximately 330 feet) on the south side of Pass Road, and parallels the road for approximately 1.5 miles to the east of Cherry Creek Spring.

The Alternative 1 ROW would be close to Limestone Spring, Pole Line Spring, Oak Spring, Shearing Coral Spring, and five other unnamed springs. The Alternative 1 ROW would cross Cherry Creek near the point where Alternative 1 diverges from the Proposed Action ROW.

The nearest spring to the Alternative 2 ROW is approximately 1,500 meters away.

Springs in proximity to the alignments are shown in **Figure 3.2-1** (found in **Appendix I**).

3.2.3 Vegetation, Woodland Products, and Forestry

3.2.3.1 Vegetation

Based on Provisional Southwest Regional GAP data (USGS 2005), the majority of the Project Area occurs within three landcover categories.

Inter-Mountain Basins Big Sagebrush Shrubland. This ecological system occurs typically in broad basins between mountain ranges, plains and foothills between 4,920 and 7,550 feet elevation. Soils are typically deep, well-drained and non-saline (USGS 2005, <http://earth.gis.usu.edu/swgap/legenddataquery.php> SCODE = S054).

Colorado Plateau Pinyon-Juniper Woodland. This ecological system is typically found at lower elevations ranging between 4,920 and 8,000 feet. These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges (USGS 2005, <http://earth.gis.usu.edu/swgap/legenddataquery.php> SCODE = S039).

Rocky Mountain Gambel Oak-Mixed Montane Shrubland. This ecological system of shrublands is most commonly found along dry foothills, lower mountain slopes, and at the edge of the western Great Plains from approximately 6,560 to 9,510 feet elevation, and is often situated above pinyon-juniper woodlands (USGS 2005, <http://earth.gis.usu.edu/swgap/legenddataquery.php> SCODE = S046).

A field visit was conducted by JBR Environmental Consultants, Inc. (JBR) on October 21, 2010 to describe and further map the existing vegetative communities along the

proposed ROW. Global Positioning System (GPS) locations of vegetation community breaks were recorded in the field and marked on topographical maps. This information as well as aerial photos and UDWR Geographic Information System (GIS) data were then used to map the vegetative communities in and surrounding the Project Area. The greater Project Area contains the following eight vegetation communities (see **Figure 3.2-2 in Appendix I**).

Mahogany-Conifer. Composed of mixed conifer and dominated by mountain mahogany (*Cercocarpus ledifolius*), this vegetation community has very dense canopy cover and dominates the higher elevations.

Pinyon-Juniper. This community generally follows the middle elevations, skirted by sagebrush below and mahogany-conifer above. Pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus utahensis*) dominate the overstory while big sagebrush dominates the understory. All Pinyon-Juniper vegetation mapped on **Figure 3.2-2** (found in **Appendix I**) was also mapped as Colorado Plateau Pinyon-Juniper Woodland by Southwest Regional GAP (USGS 2005).

Riparian. Associated with standing water and a small stream (i.e., vicinity of Cherry Creek Spring, along the Proposed Action alignment). Vegetation is dominated by various grass species and is differentiated from other vegetation communities by riparian vegetation and the presence of velvet ash (*Fraxinus velutina*).

Sagebrush. This community dominates the un-burnt, lower elevations and is a virtual monoculture of big sagebrush (*Artemisia tridentata*). Soils are deep and fertile as indicated by the size of individual sagebrush plants.

Greasewood. Greasewood (*Sarcobatus vermiculatus*) is dominant in this low-elevation saline basin area surrounding Milford (mapped by UDWR). Shadscale (*Atriplex confertifolia*) is a co-dominant in many areas.

Woodland- and Shrub-Covered Low Mountains. This vegetation is dominant in the east side of the Project Area that was not covered by the field survey (mapped by UDWR).

Burn – Oak. Prior to recent wildfires, these areas were likely dominated by pinyon-juniper forests along with stands of Gambel oak (*Quercus gambelii*) and mahogany. Post-fire vegetation is composed mainly of Gambel oak, big sagebrush, and rubber rabbitbrush (*Ericameria nauseosa*). Cheat grass (*Bromus tectorum*) is also very pervasive.

Burn - Mixed Grasses. Prior to recent wildfires, this community was likely comprised of big sagebrush and grease wood (*Sarcobatus vermiculatus*). Post-fire vegetation is dominated by forage kochia (*Bassia prostrata*), green rabbitbrush (*Chrysothamnus viscidiflorus*), Indian rice grass (*Achnatherum hymenoides*), crested wheatgrass (*Agropyron cristatum*), intermediate wheatgrass (*Thinopyrum intermedium*) and cheat grass.

Noxious, Non-native, and Invasive Species. Three areas of Scotch thistle (*Onopordum canthium*) infestation were identified as a part of the general biological survey of the Proposed Action ROW (**Figure 3.2-2 in Appendix I**).

3.2.3.2 Woodland Products and Forestry

The forestry resources and woodland products that could be affected by the Proposed Action or other action alternatives are fuel wood, posts, Christmas trees, and pine nuts. All four activities are permitted for public use on some BLM-administered lands, with associated fees. Within the Project Area, as indicated in **Section 3.2.3.1**, there are stands of pinyon and juniper trees, patches of conifers, and areas of scrub oak and mountain mahogany that supply woodland products.

The BLM has identified and specifies management of green wood cutting areas in the CCFO. There are two green and dry wood cutting areas crossed by the Proposed Action ROW: Cherry Creek Spring, which is approximately 227 acres, located along Pass Road in the central part of the Mineral Mountains; and Harkley Mountain, which is approximately 4,943 acres, located on either side of Pass Road west of the Mineral Mountains. Much of the Harkley Mountain area burned in the mid-1990s with the Honey Boy fire. The Proposed Action ROW goes through a portion of the area that is unburned. Recently the demand for fuel wood has been low; trees in the Project Area haven't been cut for fuel wood because there are other areas that are easier to access (personal Communication between C. Egerton (BLM) and S. Davis (JBR), March 09, 2011).

3.2.4 Wildlife including Special Status Species

3.2.4.1 Wildlife

Wildlife habitat in the Project Area is typical of the region, comprised of mainly shrub steppe, grasslands, pinyon-juniper, and oak. The 2007 Milford Flat Wildfire affected the northern portion of the Project Area, where the majority of the habitat burned but has now recovered through Emergency Stabilization and Rehabilitation efforts by the BLM.

During spring and summer of 2011 (mid-May through mid-July), the proposed ROW was surveyed by JBR biologists walking generally parallel and meandering transects spaced 30 to 50 feet apart through the entire ROW. During the survey, all plant and wildlife species that were observed were recorded. In addition to various birds and bats, biologists observed mule deer, elk (*Cervus canadensis*), cottontail rabbit (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), and unidentified squirrel (*Spermophilus* sp; JBR 2012). ROWs for the Action Alternatives were not surveyed.

Bats. During vocalization recording surveys of the proposed ROW, a total of 60 bat calls were recorded. The calls were analyzed by a qualified individual and four species were detected: big brown bat (*Eptesicus fuscus*), western small-footed myotis (*Myotis ciliolabrum*), long-legged myotis (*Myotis volans*), and Brazilian free-tailed bat (*Tadarida brasiliensis*; JBR 2012). These bats are insectivorous and roost in caves, mines, buildings, and crevices.

Big Game. Big game species known to occur in the Project Area include mule deer, pronghorn, and elk. Portions of the Project Area are designated by the UDWR as crucial winter and substantial summer habitat for mule deer, yearlong habitat for pronghorn, and substantial winter and yearlong habitat for elk (**Figure 3.2-3 in Appendix I**). In addition, mule deer and pronghorn fawning and elk calving is expected within summer or yearlong ranges for these species; fawning and calving generally occurs between

May 15 and July 15. Mule deer, the most abundant and important big game species in Utah (UDWR 2008), are discussed in more detail below.

Mule Deer. Deer are adaptable ungulates that occur in a variety of habitats, but generally prefer areas that contain a mosaic of habitat types. Preferred areas provide thick brush or tree-covered areas for cover, small openings for forage, and water sources (WAFWA 2003).

Most mule deer herds move some distance between seasonal ranges. Mule deer migrations in the Mineral Mountains follow a common elevation pattern, in which deer winter at lower elevations that tend to be drier, such as foothills, and migrate to relatively moist higher elevations during the spring and summer (WAFWA 2009). There are 442,448 acres of crucial winter range and 41,985 acres of substantial summer range within the Beaver (#22) mule deer herd management unit. Sixty eight percent of the crucial winter range in the Beaver unit is on BLM land (UDWR 2006).

The Beaver unit population objectives are 11,000 animals. The 2012 population in the Beaver unit was estimated at 8,700 animals, about eighty percent of the objective (personal communication with Riley Peck, UDWR Wildlife Biologist, June 20 2013). Overall, the loss, degradation, and alteration of mule deer range are thought to be the main reasons for mule deer population declines over the last few decades. A lack in the quality and quantity of winter range is often the most substantial factor limiting the growth of deer herds, although summer range can affect fawn production and overwinter survival (UDWR 2008).

Mule deer rely on shrubs during the winter, and succulent, green forage during spring and summer to maintain population levels (UDWR 2008). Some parts of the Project Area that were previously dominated by shrubs (and encroaching pinyon-juniper) were burned in the 2007 Milford Fire, which was the largest in Utah's history.

In general, higher-elevation (>6,500 feet) burned areas within and outside the Project Area have recovered while lower-elevation areas have not yet reached recovery objectives (personal communication with Rhett Boswell, UDWR Wildlife Biologist, June 19 2013). Previously burned areas may eventually provide forage in locations that previously provided thermal and escape cover; however, shrubs within burned winter range are currently occurring at a fraction of their previous density, if at all. Much of the Project Area contains undisturbed crucial winter range that was not burned in the 2007 Milford Fire, and thus provides good habitat in a larger area that is still struggling to recover.

Mule deer may currently be experiencing pressure from human disturbance in the Project Area along Pass Road, as increased access creates opportunities for harassment and poaching. Approximately 24 acres within crucial winter habitat and about nine acres within substantial summer habitat are currently disturbed by Pass Road (assuming a 25-foot width). In addition, the road fragments a relatively undisturbed area of crucial winter range. Migrating herds that must cross roads such as Pass Road between seasonal ranges are at increased risk for deer-vehicle collisions, especially if traffic increases correspond to seasonal movements (Messmer and Klimack 1999); however, Pass Road is an unpaved road and traffic speed is low.

Migratory Birds. The Project Area provides foraging and nesting habitat for a variety of passerines. A list of birds observed in the Project Area is available in the Biological Survey Results Report (JBR 2012).

Raptors. All areas within 0.5 mile of the proposed ROW were surveyed for raptor nests. Four raptor nests were identified, along with several raptor observations along the proposed ROW. Raptors observed during the survey include American kestrel (*Falco sparverius*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), Northern harrier (*Circus cyaneus*), prairie falcon (*Falco mexicanus*), red-tailed hawk (*Buteo jamaicensis*), and sharp-shinned hawk (*Accipiter striatus*). In general, the Project Area, including the alternative alignments, provides good raptor habitats and many species are likely to use the general area for nesting and foraging.

3.2.4.2 Threatened, Endangered, and Candidate Species

Portions of the Alternative 1 alignment are mapped as 'requiring low intensity surveys' for UPD (USFWS 2010) because they are within a fixed radius (an area between 5 and 10 miles) from a known or historic UPD colony, which is located to the south. The USFWS defines the area requiring low intensity surveys as potentially containing suitable habitat for UPD. The Proposed Action route and Alternative 2 do not intersect an area requiring surveys.

Regarding candidate species, there is no mapped brooding or winter range for greater sage-grouse within two miles of the Project Area. The Project Area does contain mapped occupied habitat identified by UDWR. The Utah Natural Heritage Program indicates several observations of greater sage-grouse in the Project Area, including brooding and nesting habitat (not mapped), at least two historic leks, and at least three additional observations of greater sage-grouse individuals or sign (UNHP 2012a). Three protocol lek surveys for greater sage-grouse were conducted in 2011 within four miles of the proposed ROW; however, no leks, individuals, or sign were observed (JBR 2012).

3.2.4.3 BLM Sensitive Species

The BLM designates BLM sensitive species as those that occur on BLM public lands and for which BLM has the capability to substantially affect the conservation status of the species through management. In planning, including NEPA, the BLM considers all site-specific methods and procedures needed to bring species and their habitats to the condition under which management as "sensitive" would no longer be necessary (BLM Manual 6240.2). BLM sensitive plant and wildlife species are discussed below.

BLM Sensitive Wildlife. **Table 3.2-2** contains a list of sensitive species that may occur in the Project Area. There are 22 BLM sensitive wildlife species listed for the CCFO. Suitable habitat for 13 of these species occurs along the Proposed Action or Action Alternative ROWs. All other species on the Utah state list were eliminated because their distribution does not include the Project Area or the Project Area does not contain suitable habitat. Species occurrence information includes Geographical Information System (GIS) data from the Utah Natural Heritage Program (UNHP 2012a) and observations from the field survey (**Appendix F**).

Table 3.2-2 BLM Sensitive Wildlife Species that May Occur in the Project Area

Species	Habitat description	Possible occurrence in the Project Area		
		PA	Alt 1	Alt 2
Bald eagle <i>Haliaeetus leucocephalus</i>	Bald eagles occur in Utah generally on a migratory or wintering basis. Bald eagles are opportunistic predators, especially in winter, when they will feed on any available fish, waterfowl, small mammal, or carrion. Bald eagles tend to concentrate wherever food is available, roosting in large groups in forested stands that provide protection from harsh weather. They may also winter in upland habitats, feeding on small mammals and deer carrion.	Yes Foraging habitat	Yes Foraging habitat	Yes Foraging habitat
		Potential foraging habitat for bald eagles is available in the Project Area. However, there are no lakes or reservoirs with large trees in the Project Area suitable for nesting or winter roosting. There are known occurrences of bald eagle along and east of I-15 (Figure 3.2-3 in Appendix I ; UNHP 2012a). No nests were observed during the field survey (Appendix F).		
Big free-tailed bat <i>Nyctinomops macrotis</i>	The big free-tailed bat prefers rocky and woodland habitats, where roosting occurs in caves, mines, old buildings, and rock crevices. The species is active year-round, spending summers in temperate North America and migrating to warmer areas in the winter.	Yes Suitable woodland and rocky habitat	Yes Suitable woodland and rocky habitat	Yes Suitable woodland and rocky habitat
Burrowing owl <i>Athene cunicularia</i>	Burrowing owls breed in open grassland and prairie habitats that contain mammal burrows (UNHP 2012b; Klute et al. 2003). They use a wide variety of arid and semi-arid environments, with well-drained, level to gently sloping areas characterized by sparse vegetation and bare ground. Burrowing owls require a mammal burrow or natural cavity surrounded by sparse vegetation; frequently, black-tailed prairie dog burrows are used (Klute et al. 2003).	Yes Suitable habitat	Yes Suitable habitat	Yes Suitable habitat
		Open grassland habitats are present in the Project Area and there are several known occurrences of the species near each of the Action Alternatives, predominantly in the vicinity of Milford (Figure 3.2-3 in Appendix I ; UNHP 2012a). No individuals or sign were observed during the designated survey for burrowing owl (Appendix F).		

Species	Habitat description	Possible occurrence in the Project Area		
		PA	Alt 1	Alt 2
Ferruginous hawk <i>Buteo regalis</i>	Ferruginous hawk nest substrates vary throughout their range and show great flexibility from trees and shrubs, cliffs, utility structures, and ground outcrops. Habitat preference during breeding includes flat and rolling terrain in grasslands, agriculture lands, sagebrush/saltbush/greasewood shrub lands, and the periphery of pinyon-juniper forests. Ferruginous hawks avoid high elevations, forests, and narrow canyons. Because of a strong preference for elevated nest sites, they are often present on cliffs, buttes, and creek banks.	Yes* Suitable habitat	Yes Suitable habitat	Yes Suitable habitat
		Grassland and shrubland habitats are present in the Project Area and there are known occurrences of the species near each of the Action Alternatives (Figure 3.2-3 in Appendix I ; UNHP 2012a). A ferruginous hawk nest was observed during the biological site survey (Appendix F).		
Fringed myotis <i>Myotis thysanodes</i>	In Utah, the fringed myotis has been found in a moderately wide range of habitats: lowland riparian, desert shrub, pinyon-juniper, pinyon-juniper-sagebrush, sagebrush-rabbitbrush, mountain meadow, ponderosa pine forest, and montane forest and woodland. The fringed myotis roosts in caves, mines, and buildings (Oliver 2000).	Yes Suitable habitat	Yes Suitable habitat	Yes Suitable habitat
Greater sage-grouse <i>Centrocercus urophasianus</i>	See Section 3.2.4.2	Yes	Yes	Yes
Kit fox <i>Vulpes macrotis</i>	The kit fox most often occurs in open prairie, plains, and desert habitats. The kit fox opportunistically eats small mammals (primarily rabbits and hares), small birds, invertebrates, and plant matter.	Yes Suitable habitat	Yes Suitable habitat	Yes Suitable habitat
		Suitable open desert habitat is present in the Project Area and there is a known occurrence of the species near Milford (Figure 3.2-3 in Appendix I ; UNHP 2012a). No individuals or sign were observed during the designated survey for kit fox (Appendix F).		

Species	Habitat description	Possible occurrence in the Project Area		
		PA	Alt 1	Alt 2
Long-billed curlew <i>Numenius americanus</i>	Long-billed curlews use expansive, open, level to gently sloping or rolling grasslands with short vegetation such as shortgrass or recently grazed mixed-grass prairie. They commonly nest in both wet and dry prairie and in pastures, but rarely nest in hayland, cropland, fallow, or stubble fields (Dechant et al. 2003).	Yes* Suitable habitat	Yes	Yes Suitable habitat
		Suitable grassland habitat is present in the Project Area, and there is a known occurrence of the species in the Beaver River Bottom (Figure 3.2-3 in Appendix I ; UNHP 2012a). Long-billed curlews were observed during the biological site survey (Appendix F).		
Pygmy rabbit <i>Brachylagus idahoensis</i>	Pygmy rabbits are small, secretive rabbits that dig their own burrows. Pygmy rabbits are limited to habitat characterized by deep, friable soils and tall (often greater than six feet), dense sagebrush, which provides both food (95% of the diet) and cover. Burrows are usually located on slopes at the base of sagebrush plants.	Yes Suitable habitat	Yes Suitable habitat	Yes Suitable habitat
		The Project Area contains big sagebrush and soils suitable for digging burrows. No known occurrences of the species, and no individuals or sign were observed during the designated survey for pygmy rabbit (Appendix F).		
Short-eared owl <i>Asio flammeus</i>	Short-eared owls are found in grasslands, shrublands, and other open habitats. Short-eared owls nest beginning in April, on the ground in a small depression excavated by the female (UNHP 2012b).	Yes Suitable habitat	Yes Suitable habitat	Yes Suitable habitat
		There are agricultural croplands in the vicinity of the Project Area as well as a marshy area and burn-created grasslands. No known occurrences of the species, and species was not incidentally observed during the biological site survey (Appendix F).		
Spotted bat <i>Euderma maculatum</i>	Spotted bats occur in a variety of habitats from desert to montane coniferous forest, including pinyon-juniper woodlands, ponderosa pine, open pasture, and coniferous forest. These bats roost in deep rock crevices in canyon walls and cliffs and rarely inhabit caves. Forage areas are primarily over dry, open coniferous forest, often associated with riparian or wet meadows.	Yes Suitable habitat–	Yes Suitable habitat–	Yes Suitable habitat–

Species	Habitat description	Possible occurrence in the Project Area		
		PA	Alt 1	Alt 2
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	Townsend's big-eared bats occur in a variety of habitats from desert shrub to deciduous and coniferous forest over a wide range of elevations. During the summer, these bats roost in abandoned mines, caves, and occasionally empty or occupied buildings or bridges. Maternity colonies and winter hibernacula occur in mines and caves.	Yes Suitable habitat	Yes Suitable habitat	Yes Suitable habitat
		There are deep cavern and mines likely present in the area as well as other preferred habitats. There are many known occurrences of the species in the southern portion of the Project Area (Figure 3.2-3 in Appendix I ; UNHP 2012a).		
Western toad <i>Bufo boreas</i>	Western toads are found in a variety of habitats such as desert springs and streams, meadows and woodlands, and in and around ponds, lakes, reservoirs, and slow-moving rivers and streams. Breeding areas are typically shallow water areas at the edges of ponds, or lakes, stream or river edges with slow-moving water, or other flooded or ponded areas (Keinath and McGee 2005). After breeding, western toads move to more terrestrial habitats and eventually to hibernacula that may be a substantial distance from the breeding site (up to 2.5 km, but usually much less; Keinath and McGee 2005).	Yes Suitable habitat	Yes Suitable habitat	No
		Springs such as Cherry Creek, Pole Line, and Limestone may provide breeding habitat and adjacent suitable uplands for post-breeding and hibernating. No known occurrences of the species and not incidentally observed (Appendix F).		

*Species was found in Project Area during surveys.

Dedicated surveys (i.e., for specific wildlife species) were conducted along the proposed ROW in 2011 (**Appendix F**). Dedicated surveys were conducted for burrowing owls, kit fox, raptor nests (including bald eagle and ferruginous hawk), northern goshawk, pygmy rabbits, and bats. Ferruginous hawk (an adult found dead under a nest; see **Appendix F**) and long-billed curlew were the only sensitive species observed or detected.

Long-billed curlews were observed within the Burn - Mixed Grasses vegetation community (**Section 3.2.3.1**), on the west side of the Mineral Mountains. A ferruginous hawk nest, which had been predated, was also recorded during biological surveys in 2011. The nest was located on the west side of the Mineral Mountains within the transition zone of the sagebrush and Pinyon-Juniper vegetation communities (**Section 3.2.3.1**, see JBR 2012).

3.2.5 Range Resources

The Project Area occurs within seven grazing allotments: Milford Bench, Milford Cattle, North Creek, Mineral Range, Minersville #2, Pine Creek/Indian Creek, and Whitaker, all of which are used for cattle grazing. The additional poles associated with the Cameron Substation expansion would be the only disturbance within the North Creek Allotment. Most of the Project Area falls within the Mineral Range Allotment, which is separated into three use areas, North, South, and West. **Table 3.2-3** summarizes use information for the portions of these seven allotments. **Figure 3.2-4** (found in **Appendix I**) shows the location of allotments along the Proposed Action and Action Alternative ROWs.

Table 3.2-3 Grazing Allotments in the Project Area

Allotment		Alternative ROW Crossed	Number of Livestock (cattle)	Season of Use	AUMs	Total Acreage
Milford Bench		Alt 2	259	11/01 – 5/15	295	11,975
Milford Cattle		Alt 1 Alt 2	83	12/01 – 4/30	340	7,025
Mineral Range	North Use Areas	Alt 2	1,012	05/15 - 10/15	4,925	34,588
	South Use Areas	Proposed Action Alt 1	1,001	05/15 - 10/15	4,680	26,916
	West Use Areas	Proposed Action Alt 1 Alt 2	393	05/01 - 10/15	2,029	27,876
Minersville #2		Alt 1	151	12/01 – 4/30 5/01 – 10/15	781	18,000
North Creek		Proposed Action Alt 1	645	05/20 – 07/20	1,303	5,609
Pine Creek/ Indian Creek – North Pasture		Alt 2	149	5/16 – 10/15	135	1,101
Whitaker		Proposed Action Alt 1 Alt 2	259	11/01 - 05/15	1,285	27,139

3.2.6 Wilderness Characteristics

The Proposed Action alignment passes close to and a short segment crosses the Granite Peak area with wilderness characteristics (BLM 1998 & 2011 Inventory). The Granite Peak inventory unit contains approximately 17,028 acres that were inventoried and determined to contain wilderness characteristics. The unit contains a portion of the

Mineral Mountains, with the west side of the unit characterized by dramatic granite slabs and enormous standing rocks. The unit is rich in natural beauty with spectacular views into and from the range.

Vegetation is varied and consists of complex plant associations including coniferous forests, pinyon and juniper forests, and mixed mountain brush communities, along with drainages with flowing water supporting typical riparian vegetation (BLM 2005).

The inventory evaluation states that most of the inventory unit appears natural with the imprints of people substantially unnoticeable. The evaluation notes that several developments related to mining and livestock grazing are present in the inventory unit; the existing human imprints substantially unnoticeable from the ground (BLM 2005).

The inventory unit has ample size and rugged topography that works with diverse vegetation to screen visitors from other humans and their activities, insuring outstanding opportunities for solitude. The area provides outstanding opportunities for a variety of primitive recreation activities including camping, hiking, photography, rock climbing, and horseback riding (BLM 1998 & 2011).

3.2.7 Recreation

The entire CBGA Planning Area is managed as an Extensive Recreation Management Area (BLM 1986). The southern portion of the Project Area is easily accessed from State Route 21; the northern portion is accessible via secondary roads. The Mineral Mountains and Pass Road provide the majority of recreation opportunity in the Project Area. Pass Road is used for sightseeing and access to the Mineral Mountains, which is likely used for activities such as hunting, snowmobiling, horseback riding, hiking, mountain biking, solitude, OHV use, and rock collecting. Burned areas in the Mineral Mountains (concentrated in the northern portion of the Project Area) may have received relatively fewer recreation visits in the past several years due to a reduction in scenic quality (i.e., vegetation changes). However, vegetation in these areas has mostly recovered due to rehabilitation efforts.

Recreation opportunities in the vicinity of the Project Area include Rock Corral Recreation Area (north of the proposed ROW at the western edge of the Mineral Mountains, off Pass Road) and Minersville Reservoir (south of the Project Area, off State Route 21).

3.2.8 Visual Resources

3.2.8.1 Visual Resource Components

Visual contrast analysis compares the existing, characteristic features and contrasts of the landscape to the contrasts imposed on that landscape by a proposed project. The combination of slope of the Project Area, the type of vegetation impacted, and the scenic quality rating for the lands containing the Project Area drives the impacts to landscape scenery. The impact to viewers depends on the level of contrast in the landscape, the sensitivity of the viewers, and the distance from which the viewers observe the contrast. These aspects of the visual environment are discussed below.

Slope. Project Area slopes affect the visibility of the project in the landscape from different angles and distances. The slopes within the Project Area range from zero to eight percent. The eastern- and western-most portions of the Project Area are relatively

flat with low slopes; the central portions of the Project Area through the Mineral Mountains have greater slope.

Vegetation Type. The type and height of vegetation that would be affected by the project affect the visibility of the project in the landscape from different angles and distances. Detailed information about vegetation in the Project Area is presented in **Section 3.2.3.1**, above. For purposes of visual analysis, vegetation in the Project Area has been grouped into two categories: grassland, sagebrush, and agriculture (vegetation under 12 feet tall) and pinyon-juniper woodland or other forested types (vegetation over 12 feet tall). The eastern- and western-most portions of the Project Area contain grassland and sagebrush vegetation under 12 feet tall; the central portion of the Project Area through the Mineral Mountains contains pinyon-juniper , oak, or mahogany/conifer vegetation over 12 feet tall.

Scenic Quality Ratings. Scenic quality evaluation measures the visual appeal of a landscape. BLM-administered lands are rated as Class A, Class B, or Class C based on the apparent scenic quality, where a rating of A is most scenic, and a rating of C is least scenic. The eastern-most portion of the Project Area is open and panoramic, with the Mineral Mountains as a backdrop when looking west, and has a Scenic Quality Rating (SQR) of B. The central portion of the Project Area through the Mineral Mountains is somewhat enclosed, bounded on the sides by slopes of the Mineral Mountains. The lower elevations of this area are visible from populated areas and roads, and the SQR is A. The western-most portion of the Project Area is open and panoramic, with the Mineral Mountains as a backdrop when looking east, and has a SQR of C.

Viewer Sensitivity. Sensitivity Levels are a measure of public concern for scenic quality. BLM-administered land areas are assigned high, medium, or low sensitivity levels based on consideration of types of users, amount of use, public interest, adjacent land uses, special areas, and other factors. The eastern-most portion of the Project Area consists of a rural residential area with urban centers and the I-15 corridor, with an overall sensitivity rating of moderate (BLM 2010). Sensitive viewers in this Unit would be travelers on Pass Road and I-15. Viewers in the south- and north-central portion of the Project Area through the Mineral Mountains have a general awareness and appreciation of recreation and natural areas, therefore the overall sensitivity rating for the majority of the unit is moderate. A portion of the area in the higher elevations to the north of Pass Road was identified as a unique geologic feature in the Basin and Range Physiographic region with a high sensitivity rating. Pass Road itself falls into areas with a moderate or low sensitivity rating, where maintenance of visual quality has either moderate or low value, respectively (BLM 2010). The western-most portion of the Project Area has some small game and antelope hunting in the area, but the overall sensitivity level is low and maintenance of visual quality has low value (BLM 2010).

3.2.8.2 Project Area Units

The Project Area for the transmission line was divided into four units to facilitate visual analysis, based on information in BLM (2010). These units are shown in **Figure 3.2-5** (found in **Appendix I**) and summarized in **Table 3.2-4**.

Table 3.2-4 Summary of Visual Analysis Units and their Characteristics

	Visual Analysis Units			
	1 – Southeast	2 – Middle	3 - West	4 - Northeast
Slope				
Proposed Action	Gentle; on the lower end of the 0 to 8 percent range	Range from 0 to 8 percent, but are generally on the higher end of the range as the alignment traverses the Mineral Mountains.	Gentle; on the lower end of the 0 to 8 percent range	N/A
Alternative 1		Mostly over 15 percent		N/A
Alternative 2	N/A	Range from 0 to over 15 percent		Range from 8 to over 15 percent range
Vegetation	Low and rounded with regular, continuous lines, containing grassland and sage <12 feet tall	Large irregular masses with patchy areas, with irregular lines around rock outcrops; dark greens, grays reds and yellow in color; and smooth to medium and rough in texture. Pinyon-juniper and woodlands over 12 feet tall.	Includes low agricultural fields and rangeland with some juniper, with linear agricultural edges; colored in shades of green, gray, and brown; with smooth to medium texture. Grassland and sage under 12 feet tall.	Irregular, with mostly yellow and grey hues, consisting of primarily grasses, with scattered sage and juniper.
Scenic Quality Rating (SQR)	B	A	C	B
Visual Resource Inventory (VRI) Class	IV	II	IV	III (I-15 corridor) IV (elsewhere)
Sensitivity Rating	Moderate	High (unique, high-elevation geologic features north of Pass Road [Granite Peaks]) Moderate (Pass Road)	Low	Moderate

	Visual Analysis Units			
	1 – Southeast	2 – Middle	3 - West	4 - Northeast
Sensitive Viewers	Travelers on Pass Road	Travelers on Pass Road and recreational users throughout the area. Users have a general awareness and appreciation of recreation and natural areas.	Users on local highways and secondary roads, including small game and antelope hunters	Travelers on I-15 and users on secondary roads, including ranchers, hunters, and OHV recreationists.
Landform	Flat and low with straight horizontal lines, dull light tan, beige, and gray colors; and a smooth, uniform texture.	Rough, jagged, steep and irregular with bold, angular, broken lines; shades of gray, tan and red in color; and rough in texture.	Bowl-shaped reservoir; flat to rolling with horizontal lines, buff in color and smooth textured	Low and rounded with horizontal lines, black and grey colors, and medium texture.
Contrast	Weak	Strong	Weak	Weak overall, but relatively higher in areas with lava flows.
Landscape description	Open and panoramic, with the Mineral Mountains as a backdrop when looking west.	Somewhat enclosed, bounded on the sides by slopes of the Mineral Mountains. The lower elevations of this area are visible from populated areas and roads.	Open and panoramic, with the Mineral Mountains as a backdrop when looking east.	Open and panoramic, with the Mineral Mountains as a backdrop when looking west.

Unit 1 – Southeast (Proposed Action and Alternative 1). Unit 1 extends from the eastern-most edge of the Project Area, where the proposed transmission line would extend from the boundary of the Mineral Mountains to its connection with the existing transmission line. The area containing this unit is a rural residential area with urban centers. The Visual Resources Inventory (BLM 2010) describes the area as flat, primarily urban valley with agriculture and rangeland, and mountain views to east and west.” Unit 1 includes the Cameron Substation expansion area.

Unit 2 – Middle (Proposed Action and other Action Alternatives). Unit 2 generally contains the Mineral Mountains area. The Visual Resources Inventory (BLM 2010) describes the area as, “Massive, unique, highly eroded mountains, varied vegetation and high seasonal color contrast.”

Unit 3 – West (Proposed Action and other Action Alternatives). Unit 3 extends from the western-most edge of the Project Area where the proposed transmission line would extend from Milford to the boundary of the Mineral Mountains. The Visual Resources

Inventory (BLM 2010) describes the area as, “Uniform overall with some variety in vegetation and muted colors. Adjacent scenery adds interest.”

Unit 4 – Northeast (Alternative 2). Unit 4 extends from the eastern-most edge of the Project Area, where the Alternative 2 transmission line would extend from the boundary of the Mineral Mountains to the Cove Fort Substation. The area containing this Unit is a rural rangeland area that is not a scenic destination (although it receives use). The Visual Resources Inventory (BLM 2010) describes the area as “low, rolling rangelands with lava flows and cinder cones, with adjacent mountains to the south and east.” Unit 4 includes the Cove Fort substation site.

3.2.8.3 Compliance with BLM Visual Resource Management Objectives

The BLM (which for this project is the CCFO) uses a VRM system to manage visual resources on public lands. The primary objective of VRM is to maintain the existing visual quality of BLM administered public lands and to protect unique and fragile visual resources. The VRM system uses four classes to describe the different degrees of modification allowed to the basic elements of the landscape (i.e., line, form, color, and texture; BLM 1980).

The VRM Classes and their objectives are described in **Table 3.2-5**.

Table 3.2-5 Visual Resource Management Classes

VRM Class	Objectives
I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and should not attract attention.
II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
IV	The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the landscape (BLM 1986b).

Figure 3.2-6 (found in **Appendix I**) shows the current VRM class designations for the Project Area.

In order to assess compliance with BLM visual resource management objectives along the proposed ROW, six Key Observation Points (KOPs) were selected for analysis (**Figures 3.2-6** and **3.2-7** in **Appendix I**; **Table 3.2-6**). Further description of KOPs is contained in **Appendix G** (Visual Resources Technical Report).

Table 3.2-6 Visual Analysis Viewpoints

Key Observation Point Number	Viewpoint
1	Intersection of State Route 21 and Pass Road
2	Pole 174
3	Poles 186 and 187
4	Pole 199
5	Intersection of Pass Road with Frontage East of Milford
6	I-15 in Beaver

3.2.9 Cultural Resources

Cultural resources are defined as any definite location of past human activity identifiable through field survey, historical documentation, and/or oral evidence. Cultural resources include archaeological or architectural sites, structures, or places, and places of traditional cultural or religious importance to specified groups whether or not represented by physical remains. Cultural resources have many values and provide data regarding past technologies, settlement patterns, subsistence strategies, and many other aspects of history.

The NHPA of 1966, as amended, and its implementing regulations (36 CFR 60 and 800) require that federal agencies take into account the effects of their undertakings on cultural resources that are listed or eligible for listing to the NRHP; eligible or listed resources are identified as “historic properties.”

3.2.9.1 Cultural Overview

The Eastern Great Basin has a long record of human occupation. The archaeological record demonstrates a substantial reliance on wetland and lake-edge resources by both hunters and gatherers during the Paleoindian, Archaic, and Late Prehistoric periods and horticulturalists during the Formative period. Several summaries of regional prehistory have been written (Jennings 1978; Aikens and Madsen 1986; Grayson 1993).

This historic period is generally subdivided into five periods or themes: Exploration and the Fur Trade; Settlement and Economic Development; Development of Communities and Industries; Decline, Depression, and World War II; and the Post-World War II period.

Class I Cultural Resource Literature Review. A Class I literature review for all alternatives was conducted. The Class I literature review for the Proposed Action ROW revealed 77 previously recorded sites within 0.5-mile either side of the Proposed Action ROW and 57 previously recorded sites within 0.5-mile either side of the Alternative 1 ROW. The 77 sites within 0.5 mile of the Proposed Action ROW include 35 prehistoric sites, 31 historic sites, 5 multi-component sites (i.e., both prehistoric and historic components), and 6 unknown affiliation. Prehistoric site types are mainly lithic scatters and lithic/ceramic scatters. Sites containing diagnostic artifacts indicate the Archaic and Formative periods. Historic site types are dominated by trash scatters, irrigation features

(canals, ditches), roads, railroad features, and other misc. structures/features. Thirteen of the previously recorded cultural resource sites were recorded within the Proposed Action 60-foot wide ROWs.

The 57 sites within 0.5 mile of the Alternative 1 include 24 prehistoric, 28 historic, 4 multi-component, and 1 unknown affiliation. Prehistoric site types include mostly lithic scatters and lithic/ceramic scatters. Sites containing diagnostic artifacts indicate the Archaic and Formative periods. Historic site types include trash scatters, ranching features, railroad features, irrigation features, and roads.

A Class I literature review was also conducted for the 26 mile long Alternative 2 ROW (Wygant and Boley 2012). A total of 272 previously recorded sites are within 0.5 mile either side of Alternative 2, of which 45 are located within the 60-foot-wide ROW. The 272 sites include 219 prehistoric, 35 historic, 4 multi-component, and 14 unknown. Prehistoric sites dominate and generally include lithic scatters, quarries, lithic/groundstone scatters, lithic/ceramic scatters, and campsites. Sites containing diagnostic artifacts indicate the Paleoindian through Protohistoric periods. Historic sites generally include trash scatters, sheep herders camps, roads, railroad features, and other misc. structures/features.

The site density, or archaeological sensitivity, is estimated to be similar for the Proposed Action and Alternative 1 (Yoder and Neilson 2011). For Alternative 2, the site density, or archaeological sensitivity, is estimated to be higher than the Proposed Action and Alternative 1 (Wygant and Boley 2012).

Class III Pedestrian Cultural Resource Inventory. An intensive Class III pedestrian inventory was conducted along the Proposed Action ROW. The Class III cultural resource inventory (Yoder and Neilson 2011) documented 23 cultural resource sites within the Proposed Action ROW, which includes the 13 previously recorded sites. Of these 23 cultural resource sites, 10 were determined to be not eligible and 13 were determined to be eligible to the NRHP. The Utah SHPO concurred with these determinations.

The cultural resource sites within the Proposed Action ROW included 12 lithic scatters, 2 multi-component (prehistoric and historic) artifact scatters, 2 ditches, 1 canal, 1 powerline, 1 fenceline, 2 roads, 1 railroad, and 1 historic debris scatter (see **Table 3.2-7** below).

Table 3.2-7 Cultural Resource Sites

Site Number	Site Type	Cultural Affiliation	NRHP Determination
42BE867	Lithic Scatter	Unknown Aboriginal	Not Eligible
42BE868	Lithic Scatter	Unknown Aboriginal	Not Eligible
42BE870	Lithic Scatter	Formative	Eligible
42BE872	Lithic Scatter	Formative	Eligible
42BE874	Multicomponent artifact scatter	Formative / Euro-American	Eligible
42BE2012	Railroad	Euro-American	Eligible
42BE2201	Historic Road	Euro-American	Not Eligible
42BE2285	Historic Fence Line	Euro-American	Not Eligible
42BE2423	State Route 21	Euro-American	Not Eligible
42BE2430	Historic Artifact Scatter	Euro-American	Not Eligible
42BE2439	Harris Ditch	Euro-American	Eligible
42BE2441	Willis Ditch	Euro-American	Eligible
42BE2808	Mammoth Canal	Euro-American	Eligible
42BE3662	Multicomponent artifact Scatter	Unknown Aboriginal / Euro-American	Eligible
42BE3663	Power Line	Euro-American	Not Eligible
42BE3664	Lithic Scatter	Unknown Aboriginal	Not Eligible
42BE3665	Lithic Scatter	Unknown Aboriginal	Eligible
42BE3666	Lithic Scatter	Unknown Aboriginal	Not Eligible
42BE3667	Lithic Scatter	Unknown Aboriginal	Eligible
42BE3668	Lithic Scatter	Archaic	Eligible
42BE3669	Lithic Scatter	Archaic	Eligible
42BE3670	Lithic Scatter	Unknown Aboriginal	Not Eligible
42BE3671	Lithic Scatter	Late Prehistoric	Eligible

A Class III pedestrian survey was not conducted on either Alternative 1 or Alternative 2. As stated above, Alternative 1 would have similar density and cultural resources as the proposed action. Alternative 2 would have a much higher cultural resource density than the proposed action.

3.2.10 Socioeconomics

Beaver County is a rural county located in southwest Utah, created in 1856. With a land area of about 2,590 square miles, there is an average of 2.6 persons per square mile. Beaver County is midway between Las Vegas, Nevada and Salt Lake City along Interstate 15. Two major transportation corridors, I-15 and the Union Pacific railroad, run through Beaver County. Beaver City, the county seat located along I-15, is the largest city in the County. The town of Milford is located 30 miles west of Interstate 15.

The Project Area traverses several county land zones including Multiple Use (MU-20), Agriculture (A-20, A-5), Highway Commercial District (C-H), and General Industrial District (M-G) (Beaver County 1993). Land ownership in Beaver County is predominantly federal (78 percent) with private/local government (12.4 percent) and state (9.6 percent) comprising the rest (UGOPB 2003).

As explained in **Section 1.2**, the existing electric transmission system providing electricity to the Milford area of Beaver County is inadequate to meet current levels of demand. The existing system is fundamentally unreliable because there is no redundancy in the system. When there is an outage in the existing 46 kV system there are presently no other systems to provide power to the Milford area. As of the 2010 Census, the population of Beaver County was 6,629 (U.S. Census Bureau 2012). This is a 10.4 percent increase from the 2000 population of 6,005. The county reported 2,908 housing units in 2010 with 2,091 households and 2.94 persons per household. Nineteen building permits were issued in 2010 (U.S. Census Bureau 2012). PacifiCorp provides electrical service to approximately 2,000 customers in the affected portion of Beaver County. Because of reliability problems with the existing transmission line, and because there are no other lines providing service to the area, each of these customers lose approximately 500 minutes, or over eight hours of electrical service each year (pers. communication between S. Davis and M. Shepherd, PacifiCorp, January 23, 2013).

The local economy has traditionally been dependent on agriculture, grazing, and mining. Agriculture is still important to the County. PacifiCorp serves several customers with irrigation systems that use electricity for irrigation pumping during the six month irrigation season from mid-April to mid-October (actual number and amount of electricity consumed unknown). Another major agricultural entity in Beaver County serviced by the existing electric transmission system is Circle Four Farms, which is part of Murphy-Brown LLC, the largest producer of pork in the world. Circle Four Farms raises and markets 1.2 million hogs per year and employs approximately 425 people at its Milford location (Utah DEQ 2009).

CS Mining owns or controls a flotation mill and a number of high-grade copper ore deposits located in the Milford Mineral Belt in Beaver County (Facebook – CS Mining 2013). PacifiCorp is contracted to provide electricity to CS Mining for their operations. PacifiCorp is presently meeting its contracted load for CS Mining; however, the existing transmission line servicing Milford is at capacity, and the load demands jeopardize the system.

Average annual income in Beaver County in 2008 was \$53,244 (EDCUtah 2009). Major employers in the County include: Circle Four Farms, Beaver School District, Beaver Valley Hospital, Union Pacific Railroad, and Beaver County (EDCUtah 2009). Tourism in the County includes destinations such as Puffer Lake, Three Creeks Reservoir, and the Mineral Mountains, as well as its proximity to some of Utah's National Parks.

4.0 ENVIRONMENTAL IMPACTS

4.1 Introduction

This chapter provides analysis of those resources that would be potentially impacted by the Proposed Action or alternatives. Those resources that were identified as potentially being affected by the proposed project and described in **Chapter 3** are analyzed for impacts. Impact analysis will address the potential outcomes of the alternatives, as well as the BLM's proposal to amend the CGBA RMP to change the VRM Class of a portion of the lands containing the Proposed Action. These impacts sections for the alternatives assume that all standard Best Management Practices (BMPs) as well as Design Features to Reduce Impacts described in **Section 2.2** would be implemented with project design and construction. Because all known mitigating measures have been included in the Descriptions of the Alternatives, the environmental consequences described below are unavoidable.

4.2 General Analysis Assumptions and Guidelines

In general, the methodology for analysis of impacts to the affected environment that would result from the alternatives is to describe the changes that would result from implementation of the project, quantify those changes where possible (such as acres of disturbance to specific resources, or changes in visual characteristics), and determine compliance with any governing laws, regulations, or policies. Acreages were calculated using GIS and datasets available for each resource. Where applicable, generally accepted thresholds were used to focus analysis on resources that would be sensitive to impacts (such as soils susceptible to water or wind erosion).

Where appropriate, resource-specific assumptions and guidelines are presented under each resource analyzed.

4.3 Direct and Indirect Impacts

Potential impacts can be direct or indirect, and are described in terms of cause, nature of the impact, and the context and intensity.

The Council on Environmental Quality (CEQ) regulations define direct impacts as those effects "...which are caused by the action and occur at the same time and place" (40 CFR 1508.8(a)). Indirect impacts are defined as those effects "...which are caused by the action and are later in time or farther removed into the distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on water and air and other natural systems, including ecosystems" (40 CFR 1508.8(b)).

In this analysis, short-term impacts are those effects that would occur over a period of five years or less (i.e., during construction of the line and the period of time required for revegetation to become established). Long-term impacts are those effects that would occur over a greater than five-year period (i.e., after revegetation is established).

4.3.1 Soils

For purposes of the analysis of impacts to soils, long-term disturbance would result at the pole locations due to occupation of the pole site and lack of revegetation in immediate proximity of the poles. Long-term disturbance would also result in areas of substation expansion, within the footprint of the substation. All short-term disturbance areas (tree cutting, access routes, pole construction areas, pulling stations, and temporary disturbance areas around substations) would be revegetated. Once the temporary disturbance areas are revegetated, for the purpose of soils impact analysis, they are no longer disturbed and would not be susceptible to erosion any more so than surrounding vegetated areas.

Indicators of impacts to soils include:

- Acreage of disturbance to soils
- Acreage of disturbance to sensitive soils
- Acreage of disturbance to soils susceptible to erosion
- Acreage of disturbance to prime farmland, and farmland of statewide importance in private ownership.

4.3.1.1 Impacts Common to All Action Alternatives

Construction. Soils in the Project Area under any of the Action Alternatives would be disturbed where trees would be cut within the ROW, along new access routes, existing unimproved roads (e.g., Pass Road) due to extraordinary levels of use, at pole sites, at pulling stations, and at substation expansion sites. Construction of the line and operation of heavy equipment in the process of hauling poles and other materials within the Project Area would lead to compaction of soils in some areas.

Newly disturbed areas associated with tree cutting, pole installation, and transmission line construction under any of the Action Alternatives would be susceptible to wind and water erosion until new vegetation becomes established.

Operations, Maintenance, and Termination. Disturbance to soils within the ROW from operation and maintenance of the proposed transmission line would occur through emergency repair to or routine maintenance of poles or conductors. In addition, soils would be disturbed in areas wherever ROW maintenance is necessary to maintain the height of vegetation at target levels over the life of the line. Overall, disturbance to soils resulting from maintenance activities would be short-term, minimal in extent, and limited to the immediate area of any temporary access route, pole repair, or vegetation management.

Table 4.3-1 provides the acreage of disturbance of sensitive soils (prime farmland or farmland of statewide importance; wind erosion concern or water erosion concern) by alternative.

Table 4.3-1 Disturbance in Sensitive Soils Units in the Project Area

Soil Unit		Acres of Disturbance within Soil Units by Alt			Prime Farmland or Farmland of Statewide Importance	Wind Erosion Concern	Water Erosion Concern	Project Components Located in this Soil Unit
		Proposed Action	Alt 1	Alt 2				
Etta loam	Short-term	0	0	0.5	X			PA, Alt1:None
	Long-term	0	0	<0.01				Alt2: Poles, access roads
Etta clay, heavily variant	Short-term	0	0	1.0	X			Alt1:None
	Long-term	0	0	<0.01				Alt2: Poles, access roads
Fruitland loam (3 to 6 percent slopes)	Short-term	0	0	0.2	X			Alt1:None
	Long-term	0	0	0				Alt2: Temporary pole disturbance (no actual poles), access roads
Harding silt loam (0 to 2 percent slopes)	Short-term	2.6	1.6	3.2			X	PA: Poles, pulling stations, access roads
	Long-term	0.01	0.01	0.01				Alt1: Poles
Hiko Peak coarse sandy loam (3 to 30 percent slopes)	Short-term	11.6	4.1	0	X			PA: Poles, pulling stations, access roads, tree -cutting area
	Long-term	0.02	0.01	0				Alt1: Poles
Manderfield gravelly loam (1 to 3 percent slopes)	Short-term	0.9	0.9	0	X			PA: substation
	Long-term	0.2	0.2	0				Alt1: substation
Manderfield loam (3 to 6 percent slopes)	Short-term	0.1	0.1	6.2	X			PA/Alt1: Temp pole disturbance (no actual poles)
	Long-term	0	0	0.01				Alt2: Poles, pulling stations, access roads
Usinia-Usher Complex (0 to 2 percent slopes)	Short-term	0	0	0.6	X			PA/Alt1:none
	Long-term	0	0	<0.01				Alt2: Poles, access roads

Soil Unit		Acres of Disturbance within Soil Units by Alt			Prime Farmland or Farmland of Statewide Importance	Wind Erosion Concern	Water Erosion Concern	Project Components Located in this Soil Unit
		Proposed Action	Alt 1	Alt 2				
Phage loam (3 to 10 percent slopes, eroded)	Short-term	0	2.0	0	X		PA: none Alt1: Poles, Tree-cutting area Alt2:none	
	Long-term	0	<0.01	0				
Red Rock silt loam (1 to 3 percent slopes)	Short-term	0	0.1	2.8		X	PA: none Alt1: Poles Alt2: Poles, access roads, pulling stations	
	Long-term	0	<0.01	0.01				
Sheeprock-Cokel Complex (3 to 30 percent slopes)	Short-term	0.8	0.1	0.1		X	PA: Poles, pulling stations, access roads Alt1: Poles Alt2: Poles	
	Long-term	<0.01	<0.01	<0.01				
Woodrow, Slightly Saline – Blue Star Complex (0 to 5 percent slopes)	Short-term	0.5	0.5	0.8		X	PA: Poles, access roads Alt1: Poles Alt 2: Poles, Pulling stations, access roads	
	Long-term	<0.01	<0.01	<0.01				
Total Short-term		16.5	9.4	15.5				
Short-term Farmland Disturbance		12.6	7.1	8.6				
Short-term Disturbance to Areas Susceptible to Erosion		3.9	2.3	6.9				
Total Long-term		0.2	0.2	<0.1				
Long-term Farmland Disturbance		0.2	0.2	<0.1				
Long-term Disturbance to Areas Susceptible to Erosion		<0.1	<0.01	<0.1				

Table 4.3-2 shows the ownership of prime farmland or farmland of statewide importance by alternative.

Table 4.3-2 Ownership of Prime, Unique, or Farmland of Statewide Importance by Alternative

Soil Unit	Acres of Short-term Disturbance within Soil Unit					
	Proposed Action		Alt 1		Alt 2	
	BLM	Private	BLM	Private	BLM	Private
Etta loam*	0	0	0	0	0.1	0.4
Etta clay, heavily variant	0	0	0	0	0	1.0
Fruitland loam (3 to 6 percent slopes)	0	0	0	0	0.2	0
Hiko Peak coarse sandy loam (3 to 30 percent slopes)	11.6	0	4.1	0	0	0
Manderfield gravelly loam (1 to 3 percent slopes)	0	0.9	0	0.9	0	0
Manderfield loam (3 to 6 percent slopes)	0	0.1	0	0.2	0	6.2
Musinia-Usher Complex (0 to 2 percent slopes)	0	0	0	0	0	0.6
Phage loam (3 to 10 percent slopes, eroded)	0	0	2.0	0	0	0
Total	11.6	1.0	6.1	1.1	0.4	8.2

*Identified by the NRCS as Prime Farmland if irrigated.

4.3.1.2 Proposed Action

Total short-term disturbance to soils resulting from access, and pole and substation construction and tree cutting under the Proposed Action would be approximately 81.9 acres. Of the short-term disturbance approximately 16.5 acres would be sensitive soils. Of the sensitive soils disturbed, approximately 24% of the short-term disturbance would be to soils sensitive to erosion. Total long-term disturbance to sensitive soils would be approximately 0.2-acre, the majority of which would be to farmland.

One soil type that would be disturbed within the Proposed Action ROW, Sheeprock-Cokel Complex, is in a wind erodibility group that would indicate higher susceptibility to wind erosion than most other soils in the Project Area. Poles, pulling stations, and access routes would be located in this soil unit. Total short-term disturbance to Sheeprock-Cokel Complex soils would be approximately 0.8-acre and total long-term disturbance would be less than 0.01-acre.

Two soil types that would be disturbed within the Proposed Action ROW qualify as highly susceptible to water erosion: Harding silt loam and Woodrow Slightly Saline – Blue Star Complex. Within Harding silt loam, there would be disturbance created by poles, pulling stations, and access roads. Within Woodrow soils, there would be disturbance created by poles and access roads. Total short-term disturbance within soils highly susceptible to water erosion under the Proposed Action would be

approximately 3.1 acres; total long-term disturbance to this soil type would be approximately 0.01-acre.

Farmland of statewide importance that would be disturbed within the Proposed Action ROW include Hiko Peak coarse sandy loam, Manderfield gravelly loam, and Manderfield loam soils. Pole construction, access routes, pulling stations, and tree cutting would cause disturbance in areas of Hiko Peak Coarse Sandy Loam. The substation expansion would disturb Manderfield gravelly loam and there would be pole construction disturbance in areas of Manderfield loam; however no poles would be placed within this soil type. Total short-term disturbance to farmland of statewide importance would be approximately 12.6 acres. Long-term disturbance to Manderfield gravelly loam from substation expansion would be approximately 0.2-acre. Under the Proposed Action, approximately one acre of short-term disturbance to farmland of statewide importance would occur on private property. Under the Proposed Action there would be no impacts to prime farmland.

4.3.1.3 Alternative 1, Southern Route

Total short-term disturbance to soils resulting from access, pole, and substation construction, and tree cutting under Alternative 1 would be approximately 92.7 acres. Of the short-term disturbance approximately 9.4 acres would be sensitive soils. Of the sensitive soils disturbed, approximately 24% of the short-term disturbance would be to soils sensitive to erosion. Total long-term disturbance to sensitive soils would be approximately 0.2-acre, the majority of which would be to farmland of statewide importance.

Under Alternative 1, poles would result in disturbance to soil types susceptible to erosion including Harding silt loam, Red Rock silt loam, Sheeprock Cokel Complex, and Woodrow slightly saline-Bluestar Complex soils, totaling approximately 2.3 acres in the short term, and approximately 0.01-acre in the long term.

Phage loam, Manderfield loam, Manderfield gravelly loam, and Hiko Peak loam are the soil type classified as farmland of statewide importance that would be disturbed along the Alternative 1 ROW. Approximately 7.1 acres of short-term disturbance and approximately 0.2-acre of long-term disturbance within farmland of statewide importance would result from implementation of the project under Alternative 1.

Under Alternative 1, approximately 1.1 acre of short-term disturbance to farmland of statewide importance would occur on private property. Under Alternative 1 there would be no impacts to prime farmland.

4.3.1.4 Alternative 2, Cove Fort to Milford Route

Total short-term disturbance to soils resulting from access, and pole and substation construction under Alternative 2 would be approximately 68.2 acres. Of the short-term disturbance approximately 17.6 acres would be sensitive soils. Of the sensitive soils disturbed, approximately 39% of the short-term disturbance would be to soils sensitive to erosion. Total long-term disturbance to sensitive soils would be less than 0.1-acre.

Under Alternative 2, poles, pulling stations, and access routes would result in disturbance to soil types susceptible to erosion including Harding silt loam, Red Rock silt loam, Sheeprock Cokel Complex, and Woodrow slightly saline-Bluestar Complex

soils, totaling approximately seven acres in the short term, and less than 0.1-acre in the long term.

Etta loam soils, considered Prime Farmland if irrigated, occur along the Alternative 2 ROW near the proposed Cove Fort substation. Poles and access routes would occur within Etta loam soils under Alternative 2. Overall short-term disturbance in prime farmland soils would be 0.5-acre; long-term disturbance would be less than 0.01-acre. In the long term, the new poles would replace existing poles within irrigated and cultivated fields of prime farmland. Assuming the poles be replaced along the same alignment as existing poles, there would be no impact to agricultural operations on prime farmland, as irrigation systems in use are designed such that the poles do not interfere.

Farmland of statewide importance also occurs along the Alternative 2 ROW and include Etta clay, Fruitland loam, Manderfield loam, and Musina-Usher Complex. Total short-term disturbance within farmland of statewide importance under Alternative 2 would be approximately 8.6 acres; total long-term disturbance would be less than 0.1-acre.

Under Alternative 2, approximately 8.2 acres of short-term disturbance to prime farmland or farmland of statewide importance would occur on private property.

4.3.1.5 No Action Alternative

No soils would be disturbed as a result of the No Action Alternative.

4.3.1.6 Summary of Impacts

Table 4.3-3 summarizes impacts to soils by alternative.

Table 4.3-3 Summary of Impacts to Soils by Alternative

Type of Disturbance	Disturbance (Acres)		
	Proposed Action	Alt. 1	Alt. 2
Total Short-term Disturbance	81.9	92.7	68.2
Total Long-term Disturbance	1.2	1.2	2.2
Sensitive Soils - Total Short-term Disturbance	16.5	9.4	17.6
Short-term Farmland Disturbance - Total	12.6	7.1	10.7
Short-term Farmland Disturbance – Private Lands	1.0	1.1	10.3
Short-term Disturbance to Prime Farmland	0	0	0.5
Short-term Disturbance to Areas Susceptible to Erosion	3.9	2.3	6.9
Sensitive Soils - Total Long-term Disturbance	0.2	0.2	<0.1
Long-term Farmland Disturbance	0.2	0.2	<0.1

Type of Disturbance	Disturbance (Acres)		
	Proposed Action	Alt. 1	Alt. 2
Long-term Disturbance to Prime Farmland	0	0	<0.01*
Long-term Disturbance to Areas Susceptible to Erosion	<0.1	<0.01	<0.1

*Poles of the existing transmission line that would be replaced under Alternative 2 result in existing long-term disturbance to prime farmland, similar to the amount estimated here.

4.3.2 Water Resources

For purposes of the analysis of impacts to water resources, long-term disturbance would result at the pole locations due to lack of revegetation in immediate proximity of the poles. All short-term disturbance areas (tree cutting, access routes, pole construction areas, pulling stations, and temporary disturbance areas around substations) would be revegetated. Once the temporary disturbance areas are revegetated, for the purpose of water resources impact analysis, they are no longer disturbed and would not be susceptible to erosion any more so than surrounding vegetated areas.

Indicators of impacts to water resources include:

- Number of springs and/or streams potentially impacted
- Acreage of disturbance within the 100-meter buffer of springs, streams, and their associated riparian areas
- Acreage of tree cutting within the 100-meter buffer.

4.3.2.1 Impacts Common to All Action Alternatives

Construction. Under all Action Alternatives, any wetlands and all perennial and intermittent streams and dry washes would be spanned by the power line. However, it is possible that proposed access routes and pulling stations may cross dry washes.

The Utah Riparian Management Policy, IM UT 2005-091 states that no new surface disturbing activities will be allowed within 100 meters (approximately 330 feet) of riparian areas unless it can be shown that:

- There are no practical alternatives, or
- All long-term impacts can be fully mitigated, or
- The activity will benefit and enhance the riparian area (BLM 2005).

Under all Action Alternatives, several power poles would be placed in the Beaver River floodplain. Given the size of the poles and the width of the floodplain, however, the poles would have no measureable impact on the movement of water through the area. The portions of the Beaver River that would have project components placed in close proximity are not on BLM lands; therefore IM UT 2005-091 would not apply.

Hydrology of the Project Area could be affected by erosion of newly exposed soils.

Operations, Maintenance, and Termination. Similar to construction, any work within the floodplain to maintain or repair the proposed transmission line would have no measureable impact on the movement of water through the area. Future maintenance

of vegetation within the wire zone in the ROW would be expected to result in little or no ground disturbance. Any future trees cut would be small in stature, and would expose little or no unprotected soils to the effects of wind and water erosion, which could result in sedimentation of the springs, creeks, or riparian areas. No impacts to water resources would be anticipated from operation and maintenance of the transmission line.

4.3.2.2 Proposed Action

On the east side of the Proposed Action ROW, the proposed transmission line would be outside, and would not impact the floodplain for Wildcat Wash.

There would be no ground disturbing activities within the Cherry Creek riparian system. The nearest pole of the transmission line to a riparian area under the Proposed Action has been designed to be constructed approximately 100 feet (28 meters) from the riparian area associated with Cherry Creek Spring. This routing was determined to be the most practical option that would minimize overall disturbance.

In order to analyze the impact of placing poles within 100 meters of riparian areas, using aerial photography, a 100-meter buffer was created around Cherry Creek Spring, the unnamed spring, and their riparian areas; and Cherry Creek (**Figure 4.3-1** in **Appendix I**).

Approximately 16 poles along the Proposed Action ROW (**Figure 4.3-1** in **Appendix I**) would be placed within 100 meters from the Cherry Creek riparian system, including poles 170 through 186. Also, pulling stations 6 and 7 are within the 100-meter buffer. Poles 173 through 186, pulling station 7, nine temporary access spur routes leading from Pass Road to pole locations for poles 174-179 and 181-183, and 7.5 acres of associated areas that would be cleared of trees would be within the 100-meter buffer, but would be separated from Cherry Creek, the springs, and any associated riparian areas by Pass Road.

Disturbance from pulling and tensioning site 6 would be kept on or north of Pass Road to the extent possible. Exposed soils from disturbance in relatively close proximity to the water source could result in erosion and sedimentation. Approximately 9.5 acres of short-term disturbance and 0.01-acre of long-term disturbance within 100 meters of Cherry Creek, the spring, or associated riparian areas would occur north of Pass Road.

Poles 165, 166, and 170 through 172, and 0.8-acre of associated areas that would be cleared of trees would be within the 100-meter buffer of Cherry Creek south of Pass Road. Approximately 1.3 acres of short-term disturbance and less than 0.01-acre of long-term disturbance within 100 meters of Cherry Creek, the spring, or associated riparian areas would occur south of Pass Road.

Approximately 10.8 acres of short-term disturbance and 0.01-acre of long-term disturbance within 100 meters of Cherry Creek, the spring, or associated riparian areas would result from implementation of the Proposed Action. The total acreage of the 100-meter buffer area surrounding Cherry Creek and Cherry Creek Spring where project components would be placed is approximately 87.3 acres.

4.3.2.3 Alternative 1, Southern Route

The eastern portion of the Proposed Action ROW would be common with the Alternative 1 ROW, as Alternative 1 diverges from the Proposed Action at Pole 172. As under the Proposed Action, the proposed transmission line for Alternative 1 would not impact the floodplain for Wildcat Wash. **Figure 4.3-2** (found in **Appendix I**) shows the Alternative 1 project components in relation to the various springs. As described under the Proposed Action in **Section 4.3.2.2**, poles 165, 166, and 170 through 172 would be placed within the 100-meter buffer of Cherry Creek; however, there would be no ground disturbing activities within the Cherry Creek riparian system.

There would be no ground disturbing activities within the riparian systems associated with springs unique to Alternative 1. Examination of aerial photographs did not reveal obvious riparian areas associated with the springs unique to Alternative 1. To account for any riparian areas, the buffer around the springs was extended by a 10 meter radius, for a total of 110 meters. Pole 424 would be within the 100-meter buffer of Limestone Spring; total short-term disturbance within the 100-meter buffer from pole construction, access, and tree clearing would be 0.2-acre. Pole 436 would be within the 100-meter buffer of Pole Line Spring; total short-term disturbance within the 100-meter buffer from pole construction, access, and tree clearing would be 0.3-acre. Pole 442 would be within the 100-meter buffer of two unnamed springs; total short-term disturbance within the 100-meter buffer from pole construction, access, and tree clearing would be 0.8-acre. Pole 473 would be within the 100-meter buffer of an unnamed spring; total short-term disturbance within the 100-meter buffer from pole construction, access, and tree clearing would be 0.3-acre.

Approximately 5.3 acres of short-term disturbance and less than 0.01-acre of long-term disturbance within 100 meters of springs and anticipated riparian areas would result from implementation of the Proposed Action.

Alternative 1 has not been engineered; pole locations are approximated within the alternative ROW based on average span length. Should Alternative 1 be selected, poles could potentially be designed to be located outside the 100-meter buffer.

4.3.2.4 Alternative 2, Cove Fort to Milford Route

There are no springs, streams, or riparian areas within 100 meters of the Alternative 2 ROW. The Alternative 2 ROW crosses one unnamed canal near Milford that would be spanned by the power line.

4.3.2.5 No Action Alternative

There would be no impacts to floodplains, hydrology, or water resources under the No Action Alternative.

4.3.3 Vegetation

For purposes of the analysis of impacts to vegetation, long-term disturbance would result at the pole locations due to occupation of the pole site and lack of revegetation in immediate proximity of the poles, and in tree cutting areas, as those areas would be revegetated with grasses and forbs (changing the vegetative community). Long-term disturbance would also result in areas of substation expansion, within the footprint of the substation. All short-term disturbance areas (tree cutting, access routes, pole construction areas, pulling stations, and temporary disturbance areas around substations) would be reseeded and allowed to revegetate. Once the temporary disturbance areas are revegetated, for the purpose of vegetation impact analysis, they are no longer disturbed.

Indicators of impacts to vegetation include acreage of short- and long-term disturbance to existing vegetation.

4.3.3.1 Impacts Common to All Action Alternatives

Construction. Under any of the Action Alternatives, vegetation would be removed in the portions of the Project Area where the substations would be constructed or expanded, and in the immediate vicinity of pole locations. Vegetation would be crushed and damaged in temporary disturbance areas, such as in areas of overland access, construction areas around pole locations, and in pulling and staging areas. In portions of the ROWs that are vegetated by trees (i.e., pinyon-juniper, Gambel oak, or mahogany-conifer), all of the trees would be cut within wire zone in the ROW. While the tree cutting areas would be reseeded and would be expected to revegetate in the short term, disturbance to the vegetative community would be long-term. Ground disturbance associated with construction would provide an opportunity for non-native and invasive species to spread.

Operations, Maintenance, and Termination. Operation and maintenance of the proposed transmission line and new substation facilities under any of the Action Alternatives would generally occur within previously disturbed areas; no additional disturbance of vegetation would be expected. Occasional repairs and periodic inspection of the line may require overland travel that would result in areas of crushed vegetation.

4.3.3.2 Proposed Action

Construction. Construction would disturb a total of approximately 81.9 acres of vegetation for the short term. Of the short-term disturbance area, approximately 48.6 acres would be forested vegetation within the ROW that would be cut to clear the ROW.

Operations, Maintenance, and Termination. Project infrastructure would occupy approximately 1.3 acres, resulting in a long-term disturbance to vegetation. There would be approximately 48.6 acres of long-term disturbance where forested vegetation would be removed and the area within the Proposed Action ROW would be maintained at a low profile with grasses and forbs over the life of the transmission line. At the end of the life of the transmission line, these areas of long-term disturbances would be restored to pre-project conditions to the extent possible (all occur on BLM lands).

4.3.3.3 Alternative 1, Southern Route

Construction. Construction would disturb a total of approximately 92.7 acres of vegetation for the short term. Of the short-term disturbance area, approximately 46.4 acres would be forested vegetation within the ROW that would be cut to clear the ROW.

Disturbed areas within linear ROWs where populations of noxious, non-native, and invasive weeds occur can allow for expansion of weed populations. The Alternative 1 ROW would disturb vegetation and soils allowing for the spread of these species, providing a new linear route through the area.

Operations, Maintenance, and Termination. Project infrastructure would occupy approximately 1.3 acres, resulting in a long-term disturbance to vegetation. There would be 46.4 acres of long-term disturbance where forested vegetation would be removed and the area within the Alternative 1 ROW would be maintained at a low profile with grasses and forbs over the life of the project. At the end of the life of the transmission line, these areas of long-term disturbances would be restored to pre-project conditions to the extent possible (i.e., acreage on BLM lands).

4.3.3.4 Alternative 2, Cove Fort to Milford Route

Construction. Construction would disturb a total of approximately 68.4 acres of vegetation for the short term. There would be no long-term disturbance to forested vegetation as the ROW is maintained for an existing transmission line.

Disturbed areas within linear ROWs where populations of noxious, non-native, and invasive weeds occur can allow for expansion of weed populations. While the proposed project would disturb vegetation and soils allowing for the spread of these species, the Alternative 2 ROW would be along an existing ROW, an existing linear feature that would have already transmitted these species through the area.

Operations, Maintenance, and Termination. Project infrastructure would occupy approximately 2.2 acres, resulting in a long-term disturbance to vegetation. Tree species within the ROW would continue to be maintained at a low profile over the life of the transmission line and would be restored to pre-project conditions to the extent possible at the end of the project.

4.3.3.5 No Action Alternative

There would be no impacts to vegetation resources under the No Action Alternative.

4.3.4 Woodland Products and Forestry

WO IB 2012-0097 is the BLM's policy guidance for the removal and disposal of vegetative resources. For the purposes of analysis of impacts to woodland products and forestry, all areas where trees would be cut would be considered long-term disturbance. Regardless of whether areas are allowed to revegetate as trees, the time required for

the trees to mature to function as a wood product resources would be within the long-term timeframe.

Indicators of impacts to woodland products and forestry include acreage of species that produce woodland products to be cut, and tons/cords of wood that would result.

4.3.4.1 Impacts Common to all Action Alternatives

Construction. In compliance with WO IB 2012-097, prior to project initiation, the portion of the ROW that would be cleared of trees would have an appraisal of the value of the wood products. There may be some loss of Christmas tree sales from the area. There would also be a loss of pine nuts through the cutting of the pinyon trees; however, pine nut production in the area is not very high.

Operations, Maintenance, and Termination. The wire zone of the ROW would be maintained free of trees for safe operation and maintenance of the transmission line. This area would be maintained with grasses and forb vegetation and would not produce wood products for the life of the project. No cutting of trees outside the ROW is anticipated.

4.3.4.2 Proposed Action

Construction. As described in **Section 2.1.3**, all trees would be cleared within the wire zone of the ROW, as deemed necessary for safety by PacifiCorp. In addition, trees may be cut in areas to provide temporary access and in areas needed for pole construction or pulling stations (see maps in **Appendix C**). Within these areas, 40.4 acres of trees that could be used for woodland products (pinyon-juniper, mountain mahogany, and oak shrubland that has not been burned) occur and would likely be removed. The BLM estimates these areas of trees would produce approximately 186 green tons of wood products, which would equate to approximately 62 cords.

Baseline public access levels to the ROW would be maintained, but new access created by the project would not be available to the public after project completion. Therefore, no new access would be created to facilitate the public's harvesting of trees. The green wood cutting areas described in **Section 3.2.3.2** would be crossed by the Proposed Action ROW. There may be some loss of Christmas tree sales from the area. There would also be a loss of pine nuts through the cutting of the pinyon trees; however, pine nut production in the area is not very high.

Operations, Maintenance, and Termination. The wire zone of the Proposed Action ROW is presently vegetated with 48.6 acres of species that would potentially produce woodland products in the future. The wire zone would be maintained with grasses and forbs for the life of the project and would not produce wood products.

4.3.4.3 Alternative 1, Southern Route

Construction. As described in **Section 2.1.3**, all trees would be cleared within the wire zone of the ROW, as deemed necessary by PacifiCorp. In addition, trees may be cut in areas to provide temporary access and in areas needed for pole construction or pulling stations (see maps in **Appendix C**). Within these areas, 45.5 acres of trees that could be used for woodland products (pinyon-juniper, mountain mahogany, and oak shrubland) occur and would likely be removed. The BLM estimates these areas of trees

would produce approximately 614 green tons of wood products, which would equate to approximately 204 cords of wood.

Operations, Maintenance, and Termination. The wire zone of the Proposed Action ROW is presently vegetated with 46.4 acres of species that would potentially produce woodland products in the future.

4.3.4.4 Alternative 2, Cove Fort to Milford Route

No woodland products or forestry resources would be affected by construction, operation, maintenance, or termination under Alternative 2 because the area is sparsely vegetated with species that would produce woodland products and the proposed transmission line would be installed within the ROW for an existing transmission line which is already maintained at a low profile.

4.3.4.5 No Action Alternative

The No Action Alternative would have no impact on woodland products or forestry resources.

4.3.5 Wildlife including Special Status Species

For purposes of the analysis of impacts to wildlife and special status species, long-term disturbance would result in areas where project infrastructure occupy habitat (such as substation locations) or in areas where the habitat has been modified (such as tree cutting areas or areas where project infrastructure accentuates predation). Long-term disturbance can also result from habitat fragmentation. Short-term disturbance to wildlife and special status species would result from noise, vibration, or increased human activity that would cease upon completion of construction, or in areas where habitat effects would be short term (such as revegetated areas).

For purposes of calculating acreages of short- and long-term disturbance to species habitat below, areas of short-term disturbance include temporary disturbance at pole locations, pulling sites, and temporary access. Long-term disturbance would include areas occupied by project infrastructure and other long-term modifications.

4.3.5.1 Impacts Common to All Action Alternatives

The following sections describe impacts to general wildlife (i.e., those species not protected under State, Federal, or BLM laws or regulations; these include some lizards, snakes, rabbits, rodents, non-native species, and species that can be legally harvested with an appropriate license (e.g., coyotes); bats; big game; migratory birds; Threatened, Endangered, and Candidate species; and BLM sensitive species that may occur in the Project Area. Impact summaries for each alternative follow these sections.

General Wildlife

Construction. Construction would remove or alter wildlife habitat in all areas of temporary and permanent disturbance. Wildlife could be displaced in the short term due to noise and human presence and over the long term due to a change in habitat type and condition and due to the presence of the transmission line. Seasonal restrictions and other design features could minimize short-term displacement for those species that would not use an area during the season of construction, but when they return, they could still avoid the area over the long term due to the same reasons discussed. Removal or alteration of habitat would be a direct impact to wildlife.

Removal or alteration of habitat during construction could lead to fragmentation of wildlife habitat. This would be either a direct, indirect, and short- or long-term impact depending on whether wildlife species avoid the line after construction is complete. The noise and activity of construction, including human presence, would disperse wildlife into the surrounding areas; however, this direct effect would generally be short-term, as most wildlife would be expected to return to the Project Area after noise and activity levels subside.

Direct impacts to small mammals and reptiles may occur during construction when individuals are unable to move away from vehicles and other machinery used to install the transmission line. Mortality or injury would occur if individuals are buried or run over by equipment.

Operations, Maintenance, and Abandonment. Indirect impacts to smaller wildlife would occur due to the increase in perch sites along the transmission line (for raptors). Predation on small mammals, reptiles, and birds may increase along the line due to the improved visibility and accessibility of the area by raptors. These impacts would be long-term (i.e., for the life of the transmission line).

Occasional repairs and periodic inspection of the transmission line may require overland travel that would result in short-term noise disturbance as well as potential alternation of habitat. Wildlife may temporarily leave the area while maintenance of the transmission line is underway, and most would return to the area once the disturbance has passed.

Bats

Construction. Direct habitat removal impacts to bats would not occur because there would be no disturbance to caves or buildings, and limited potential to impact crevices where bats may roost. The species' insect prey base would be unaffected by construction, and all aquatic/riparian areas (potential foraging habitat for bats) would be avoided. Construction may displace bats temporarily from foraging (aquatic and other) habitats within and adjacent to the ROW; these noise impacts would be short-term.

Regarding disturbance close to aquatic habitats that bats may use for foraging, approximately 11 acres of the Proposed Action ROW comes within 100 meters of these areas (i.e., Cherry Creek spring and Cherry Creek), and approximately 5 acres of the Alternative 1 ROW comes within 100 meters of these areas (i.e., several named and unnamed springs and Cherry Creek). The Alternative 2 ROW does not come within 100 meters of any mapped spring or visible riparian system (on an aerial photo). All three action alternatives cross the Beaver River, High Line Canal, and Low Line Canal, which likely provide foraging habitat for bats; these areas would be spanned (by at least 10 feet); however, noise impacts during construction may temporarily displace bats from these areas.

Operations, Maintenance, and Abandonment. There would be no impacts to bats once the transmission line is constructed and operational.

Big Game

Construction. Big game would not be directly impacted by construction equipment because they are likely to move away from the disturbance area or could be easily seen and avoided. Mule deer would not be disturbed during sensitive periods due to seasonal

restrictions (**Section 2.2**), thus temporary displacement of mule deer would be limited to times when moving longer distances to avoid or move away from disturbance would not affect reproductive rates or otherwise affect populations.

Ground disturbance would mainly be confined to pulling stations, access roads, and the centerline, and all big game habitats within pole placement areas as well as woodland (i.e., pinyon-juniper or oak woodland) habitat would be permanently lost or cleared (a long-term disturbance). Impacts to big game from long-term habitat losses within pole placement areas would be minimal.

Acres of substantial summer mule deer habitat, crucial winter mule deer habitat, crucial year-long pronghorn habitat, substantial winter elk habitat, and substantial year-long elk habitat disturbance under the Action Alternatives are summarized in **Table 4.3-4** below.

No disturbance under any alternative would constitute more than 0.05 percent of the total mule deer range (crucial winter or substantial summer) within the Beaver unit.

The main direct and indirect impact to big game from construction would be the alteration of habitat as the ROW would be altered in its utility for big game species. Specifically, cover areas would be lost and foraging habitat may be increased over the long term as the area is maintained in an early seral condition. In general, early seral plant communities are more valuable forage for mule deer because early plant growth is more digestible (WAFWA 2009). In addition, the removal of woodland species such as pinyon and juniper, although they provide cover, is generally a positive change for understory forage plants that do not receive adequate moisture and sunlight once woodland species encroach (WAFWA 2009). As a result, disturbed areas within the ROW may provide valuable foraging habitat for mule deer over the long term if human disturbance does not occur during sensitive periods (**Section 2.2**) and individuals become habituated to structures and other modified aspects of the area. The Proposed Action and Alternative 1 would create substantial alterations of habitat described above, as they contain relatively undisturbed habitats, whereas Alternative 2 would largely remain the same because most of the alignment was burned in the 2007 Milford Fire and is already in an early seral condition.

The primary adverse impact on mule deer and other big game from construction would be fragmentation of habitat, as previously undisturbed areas would be bisected by noise and human activity, resulting in direct and indirect impacts to big game in the short term. Individuals would need to move longer distances than normal to avoid the construction zone. If construction occurred during spring or fall, migration between summer and winter range would be more adversely affected by the Proposed Action and Alternative 1, as Alternative 2 only crosses winter range and is less likely to interfere with movement patterns (see **Figure 3.2-3** in **Appendix I**). However, the Alternative 2 alignment does cross a large, relatively undisturbed area of winter range and thus the line would fragment this area as construction re-disturbs reclaimed habitat surrounding the old power line.

Table 4.3-4 Acres of Big Game Habitat Disturbances

Species	Habitat	Duration	Proposed Action		Alternative 1		Alternative 2	
Mule deer	Crucial winter	Short-term	Disturbance Acreage	25.1	Disturbance Acreage	23.7	Disturbance Acreage	46.2
			Percentage of Habitat Type	0.005673%	Percentage of Habitat Type	0.005356%	Percentage of Habitat Type	0.010442%
		Long-term	Disturbance Acreage	36.7	Disturbance Acreage	27.1	Disturbance Acreage	2.1
			Percentage of Habitat Type	0.00829%	Percentage of Habitat Type	0.00612%	Percentage of Habitat Type	0.00047%
	Substantial summer	Short-term	Disturbance Acreage	8.1	Disturbance Acreage	10.4	Disturbance Acreage	0
			Percentage of Habitat Type	0.01929%	Percentage of Habitat Type	0.02477%	Percentage of Habitat Type	0.00000%
		Long-term	Disturbance Acreage	13	Disturbance Acreage	20.3	Disturbance Acreage	0
			Percentage of Habitat Type	0.03096%	Percentage of Habitat Type	0.04835%	Percentage of Habitat Type	0.00000%

The Proposed Action would not introduce a substantial amount of human disturbance into mule deer habitats considering Design Features to Reduce Impacts for public access (**Section 2.2**) would be implemented. Pass Road currently encourages some public access that has the potential to adversely affect mule deer, but because the Proposed Action line follows Pass Road for much of its length through mule deer summer and winter range, the level of human disturbance would remain the same considering Design Features to Reduce Impacts would be implemented to avoid further impacts. In addition, the value of the habitat along the Proposed Action route is lower considering the current disturbance from Pass Road. Alternative 1 does not follow Pass Road and is therefore of higher value in this respect. Design Features to Reduce Impacts would be implemented to discourage new human disturbance along Alternative 1 where none existed previously, by gating or blocking roads, followed by reclamation of access after project completion. Likewise, Alternative 2 traverses a reclaimed power line alignment and new disturbance has the potential to invite encroachment, but BMPs would be implemented to block off and discourage the use of new access roads. The relative value of Alternative 2 in the above respect is high, considering it is relatively undisturbed by human encroachments.

Operations, Maintenance, and Abandonment. Vegetation maintenance within the ROW (tree clearing) would result in a long-term alteration of habitat. Human disturbance would periodically occur for maintenance. In general, PacifiCorp would coordinate maintenance activities with the BLM in consideration of timing restrictions. If maintenance activities are necessary in mule deer summer range between May 1 and June 15, or in mule deer crucial winter range between November 15 to April 30, activities would be coordinated with the BLM to avoid disturbance of habitats to the extent practicable in accordance with timing restrictions. Outside this sensitive period, noise and human activity during maintenance of the transmission line would not impact big game individuals.

Migratory Birds

Construction. Direct and indirect impacts to migratory birds (including raptors) from construction would be a loss and alteration of habitat. Disturbances in migratory bird habitats from construction are summarized in **Table 4.3-5** below.

Table 4.3-5 Acres of Migratory Bird Habitat Disturbances

Habitat	Duration	Proposed Action	Alternative 1	Alternative 2
Riparian	Short-term	0.0	0.0	0.0
	Long-term	0.0	0.0	0.0
Sagebrush	Short-term	13.1	29.1	4.8
	Long-term	0.05	0.1	<0.05
Greasewood	Short-term	2.9	2.7	4.0
	Long-term	<0.05	<0.05	<0.05
Woodland- and shrub-covered low mountains	Short-term	3.9	3.9	7.2
	Long-term	1.1	1.1	<0.05

Habitat	Duration	Proposed Action	Alternative 1	Alternative 2
Pinyon-juniper	Short-term	32.2	58.4	0.0
	Long-term	26.4	45.5	0.0
Mahogany-conifer	Short-term	16.2	0.0	0.0
	Long-term	14.0	0.0	0.0
Burn (oak)	Short-term	9.2	0.9	28.8
	Long-term	8.3	0.9	0.1
Burn (mixed grasses)	Short-term	2.6	0.0	43.8
	Long-term	<0.05	0.0	0.1

Temporary noise impacts to migratory birds would occur during construction at springs or streams that occur near the ROW (these areas would not be directly disturbed). Several springs and the Cherry Creek riparian system occur within 100 meters of the Proposed Action and Alternative 1 alignments. Approximately 11 acres within a 100-meter radius of springs/streams would fall within the Proposed Action ROW, and approximately 5 acres within a 100-meter radius of springs/streams would fall within the Alternative 1 ROW. Alternative 2 would not come within a 100-meter radius of any spring or visible riparian system (on an aerial photo). Birds that utilize these riparian habitats would likely seek out alternative habitats away from construction. These impacts would be short-term (for the duration of construction) and migratory birds would likely resume using the area after construction is complete.

Operations, Maintenance, and Abandonment. Direct impacts to birds may occur via collisions with structures, conductors, or shield wires. Emergency maintenance has potential for adverse impacts to raptors because, due to public safety concerns, it cannot be scheduled around nesting periods. In most cases, pre-activity surveys would not be feasible prior to emergency maintenance activities. Some nests could be destroyed or abandoned within the ROW during emergency maintenance activities that occur during the nesting season. This would have a direct effect on individual birds, including any raptors that may nest on power poles. Any bird may be directly affected by maintenance activities that disturb a nest. Only those individuals in the immediate vicinity of emergency maintenance activities would be affected for one season thus impacts would be short-term.

Threatened, Endangered, and Candidate Species

Utah prairie dog. The Alternative 1 route would cross approximately 5.2 miles requiring low intensity UPD surveys. Because the area requiring low intensity UPD surveys that could be affected by Alternative 1 has not been surveyed, currently it is not known if or how much of the area contains occupied habitat. Impacts to UPD are possible under Alternative 1 should the required low intensity surveys identify the presence of UPD.

Greater sage-grouse - Construction. Direct and indirect impacts to greater sage-grouse from construction would occur from a loss and alteration of occupied habitat. Sage brush would be trampled, crushed, and in some cases removed during construction

activities. Acres of disturbance within occupied greater sage-grouse habitat are compared among the Action Alternatives in **Table 4.3-6** below.

Table 4.3-6 Occupied Greater Sage-grouse Habitat Disturbance

Habitat Type	Length/Duration	Proposed Action	Alternative 1	Alternative 2
Occupied	Length of Route through Occupied Habitat (miles)	1.5	3.9	0.0
	Number of Poles and Guys	Single Poles – 19 Double Poles – 1 Guys - 1	Single Poles – 39 Guys – 1*	N/A
	Short-term Access Disturbance (acres)	Centerline Overland Travel – 1.8	Centerline Overland Travel – 4.7	N/A
	Total Short-term Disturbance (acres)	5.3	11.1	0.0
	Total Long-term Disturbance (acres)	0.04	0.05	0.0
	Existing Roads in Occupied Habitat used for ROW Access (miles)	4.4	8.6	0.0

* The Alternative 1 route pole and other disturbance locations shown in the map book in Appendix C are estimates; the route is not engineered where it deviates from the Proposed Action route, and potential guy locations are unknown.

Under the Proposed Action, there would be approximately 20 poles in occupied greater sage-grouse habitat; of the 20 poles, one would be a double pole, the rest would be single poles, and one pole would be guyed. Within occupied greater sage-grouse habitat, Pass Road and an unnamed gravel road would be used to access the ROW for a total of 4.4 miles (see the Proposed Action map book in **Appendix C**). Approximately 1.5 miles of overland travel along the centerline would occur within occupied greater sage-grouse habitat from pole 136 to pole 155 (see the Proposed Action map book in **Appendix C**). No spur routes would be constructed within occupied greater sage-grouse habitat under the Proposed Action; however, there would be one pulling and tensioning site at the easternmost end of the ROW.

The portion of the Alternative 1 route on the easternmost side of the project is common with the Proposed Action route, and impacts within occupied greater sage-grouse habitat would be the same as described above. Additional disturbance and impacts would occur within the portion of the route unique to Alternative 1 that would cross occupied greater sage-grouse habitat in the western portion of the project area. In addition to the portion of the route common with the Proposed Action route, there would be approximately 20 single poles in occupied greater sage-grouse habitat between pole numbers 472 and 492 where overland travel would occur between most pole sites (see the Alternative 1 map book in **Appendix C**). Several existing roads would be used to access the ROW, which total approximately 8.6 miles in length. No spur routes would be constructed within occupied greater sage-grouse habitat under the Proposed Action;

however, there would be one a total of two pulling and tensioning sites (one site unique to Alternative 1).

Surveys conducted in 2010 indicated that greater sage-grouse were not within the project area. One historic lek is within 0.67 miles from the Proposed Action route. No greater sage-grouse have been observed at the lek since 1989. Any greater sage-grouse in the vicinity of construction activities would be temporarily displaced by construction noise and increased human disturbance; however, it is expected they would return to the area upon completion of construction when noise and activity subsides.

Direct loss of sage-grouse is not anticipated to result in population level impacts and construction of the transmission line is expected to have only minor effects on sage-grouse habitat (see **Appendix H**).

Greater sage-grouse - Operations, Maintenance, and Abandonment.

The potential for sage-grouse mortality as a result of collision with the transmission line is low due to the proximity to active leks, nesting, brood-rearing, and winter habitat. Due to the uncertainties of the impacts of transmission lines on greater-sage grouse and whether sage-grouse avoid tall structures or electromagnetic fields the project may impact greater sage-grouse use of the area. The impact is anticipated to low (see **Appendix H**).

BLM Sensitive Species

Any of the Action Alternatives may impact individual BLM sensitive species or their habitat, but none are likely to cause a trend toward federal listing or reduce the viability of any population or species.

Sensitive Raptors - Construction. No direct nesting impacts to BLM sensitive raptors, including ferruginous hawks, bald eagle, burrowing owl, or short-eared owl, would be expected.

Habitat disturbance would occur for BLM sensitive raptors as described for migratory birds. The most important habitats for BLM sensitive raptors that may occur in the Project Area are grassland and shrublands, although ferruginous hawks have been found in most habitats along the ROW (see table below). Other than flying from one area to another, bald eagles would only be expected in areas near water, thus none of the action alternatives would result in direct habitat disturbance for this species. Individual BLM sensitive raptors that may be found in each habitat are noted in **Table 4.3-7** below.

Table 4.3-7 Acres of BLM sensitive Raptor Habitat Disturbances

Habitat Species	Duration	Proposed Action	Alternative 1	Alternative 2
Sagebrush	Short-term	13.1	29.1	4.8
Burrowing owl, short-eared owl, ferruginous hawk	Long-term	0.05	0.1	<0.05
Greasewood	Short-term	2.9	2.7	4.0
Burrowing owl, short-eared owl, ferruginous hawk	Long-term	<0.05	<0.05	<0.05
Woodland- and shrub-covered low mountains	Short-term	3.9	3.9	7.2
Ferruginous hawk	Long-term	1.1	1.1	<0.05
Pinyon-juniper	Short-term	32.2	58.4	0.0
Ferruginous hawk	Long-term	26.4	45.5	0.0
Mahogany-conifer	Short-term	16.2	0.0	0.0
Ferruginous hawk	Long-term	14.0	0.0	0.0
Burn (oak)	Short-term	9.2	0.9	28.8
Ferruginous hawk	Long-term	8.3	0.9	0.1
Burn (mixed grasses)	Short-term	2.6	0.0	43.8
Burrowing owl, short-eared owl, ferruginous hawk	Long-term	<0.05	0.0	0.1

Sensitive Raptors - Operations, Maintenance, and Abandonment. Impacts to BLM sensitive raptors would be the same as described for migratory birds.

Sensitive Bats - Construction. There would be no direct habitat impacts to BLM sensitive bats, including big free-tailed bat, fringed myotis, spotted bat, or Townsend's big-eared bat during construction because there would be no disturbance to caves or buildings, and limited potential to impact crevices where bats may roost. As noted in the general discussion under *Bats*, the insect prey base for BLM sensitive bats would be unaffected by construction, and all riparian areas (potential foraging habitat for bats) would be avoided. Construction may displace sensitive bats temporarily from foraging habitats within and adjacent to the ROW; these noise impacts would be short-term. Refer to the *Bats* section (above) for a discussion of aquatic habitat impacts (i.e., potential foraging habitat for BLM sensitive bats).

Sensitive Bats - Operations, Maintenance, and Abandonment. There would be no impacts to sensitive bats once the transmission line is constructed and operational.

Kit Fox -Construction. Kit fox may be present within or near the ROW and if so, would be directly affected by construction activities. Kit fox dens within or near the ROW may be abandoned and individuals would be displaced. Reproductive activities of some individuals would be affected; however, these direct impacts would be short-term because individuals would only be affected for one season (during construction). No kit fox were observed and no dens were identified during surveys.

Kit fox would be directly and indirectly affected by a loss of suitable habitat within the ROW. **Table 4.3-8** below summarizes the acres of potential kit fox habitat that would be lost due to construction. The Proposed Action would disturb the least amount of potential kit fox habitat; Alternative 2 would disturb the greatest amount.

Table 4.3-8 Acres of Kit Fox Habitat Disturbance

Habitat	Duration	Proposed Action	Alternative 1	Alternative 2
Sagebrush	Short-term	13.1	29.1	4.8
	Long-term	0.05	0.1	<0.05
Greasewood	Short-term	2.9	2.7	4.0
	Long-term	<0.05	<0.05	<0.05
Burn (mixed grasses)	Short-term	2.6	0.0	43.8
	Long-term	<0.05	0.0	0.1

Kit Fox - Operations, Maintenance, and Abandonment. There would be no impacts to kit foxes once the transmission line is constructed and operational.

Long-billed Curlew - Construction. Long-billed curlew may be present within or near the ROW and if so, would be directly affected by construction activities. Long-billed curlew nests may be abandoned and individuals would be displaced. No long-billed curlews were observed during the surveys. Long-billed curlew would be directly and indirectly affected by a loss of suitable habitat within the ROW. **Table 4.3-9** below summarizes the acres of potential long-billed curlew habitat that would be lost due to construction. Alternative 2 would disturb the largest amount of potential habitat for long-billed curlew.

Table 4.3-9 Acres of Long-billed Curlew Habitat Disturbance

Habitat	Duration	Proposed Action	Alternative 1	Alternative 2
Burn (mixed grasses)	Short-term	2.6	0.0	43.8
	Long-term	<0.05	0.0	0.1

Long-billed Curlew - Operations, Maintenance, and Abandonment. Direct impacts to long-billed curlew from operation of the line would consist of increased predation from raptors perching on the transmission line. These impacts would be long-term (i.e., for the life of the transmission line). The transmission line may also fragment long-billed curlew habitat, particularly if individuals utilized the disturbed area less frequently or avoided it due to increased predation.

Pygmy Rabbit - Construction. Pygmy rabbits are not known to occur in the vicinity, although suitable habitat occurs, thus direct impacts are not expected. Pygmy rabbits that may occur in the vicinity of the proposed transmission line would be disturbed by construction noise and human presence. Noise in the vicinity of pygmy rabbit burrows could interfere with rabbits' ability to detect predators and thus would cause direct impacts to pygmy rabbits.

Pygmy rabbits would be indirectly affected by a loss of suitable habitat within the ROW if this species were to occur in or colonize adjacent areas. **Table 4.3-10** below summarizes the acres of potential pygmy rabbit habitat that would be lost due to construction. Alternative 1 would result in the largest amount of indirect habitat losses for pygmy rabbit.

Table 4.3-10 Acres of Pygmy Rabbit Habitat Disturbance

Habitat	Duration	Proposed Action	Alternative 1	Alternative 2
Sagebrush	Short-term	13.1	29.1	4.8
	Long-term	0.05	0.1	<0.05

Pygmy Rabbit - Operations, Maintenance, and Abandonment. The transmission line would fragment potential pygmy rabbit habitat if the line passed through a patch of suitable sagebrush. Impacts to pygmy rabbits from fragmentation would be long-term (for the life of the line). Pygmy rabbit populations are vulnerable to isolation and local extinction due to their short dispersal distances and slow pace of re-colonization in new habitats (ONE 2011).

Western Toad - Construction. Western toads are not known to occur within or near the ROW, thus direct impacts are not expected. Western toads would be indirectly affected by a loss of suitable habitat within the ROW if this species were to occur in or colonize adjacent areas. **Table 4.3-11** below summarizes the acres of potential western toad habitat that would be lost due to construction. In actuality, there are very few locations in the Project Area, if any, which contain riparian or aquatic habitats *and* adjacent woodlands suitable for western toad, thus direct or indirect habitat impacts to this species are not expected under any of the action alternatives.

Table 4.3-11 Acres of Western Toad Habitat Disturbance

Habitat	Duration	Proposed Action	Alternative 1	Alternative 2
Riparian	Short-term	0.0	0.0	0.0
	Long-term	0.0	0.0	0.0
Woodland and shrub-covered low mountains	Short-term	3.9	3.9	7.2
	Long-term	1.1	1.1	<0.05

Western Toad - Operations, Maintenance, and Abandonment. There would be no impacts to western toads once the transmission line is constructed and operational.

4.3.5.2 Proposed Action

The Proposed Action:

- Would cross occupied greater sage-grouse habitat and come within one mile of an historic lek.
- Would not affect UPD.
- Would disturb year-long habitat for elk and pronghorn; it would not disturb any winter range.

- Would disturb potential riparian habitats via construction noise. Eleven acres of the Proposed Action ROW comes within 100 meters of a spring or stream. Noise could disturb migratory birds and possibly foraging bats.
- Would disturb about 20 acres of mahogany-conifer, which is a unique habitat to this alternative. Raptors such as ferruginous hawk could be affected by this habitat loss.
- BLM sensitive species with the most potential to be affected by the Proposed Action include sensitive bats and ferruginous hawk.

4.3.5.3 Alternative 1

Alternative 1:

- Would cross occupied greater sage-grouse habitat. It also occurs less than one mile from an historic lek (the same distance as the Proposed Action).
- May affect UPD. If Alternative 1 were selected, low-intensity surveys for UPD would be required in suitable habitat.
- Would disturb big game habitat.
- Would cross Cherry Creek and may disturb some riparian habitat via construction noise, but fewer acres than the Proposed Action. Five acres of the Alternative 1 ROW comes within 100 meters of a spring or stream. Noise could disturb migratory birds and possibly foraging bats.
- Would disturb sagebrush habitat and pinyon-juniper habitat. Sensitive raptors and other migratory birds could be affected by these habitat losses.
- BLM sensitive species with the most potential to be affected by Alternative 1 include sensitive bats, ferruginous hawk, pygmy rabbit, and Townsend's big-eared bat.

4.3.5.4 Alternative 2

The majority of Alternative 2 crosses habitat that burned in 2007, and the ROW would be within a ROW maintained for an existing transmission line. Thus, there would be no tree clearing required under Alternative 2, and long-term habitat impacts are generally fewer under this alternative. Grasses, some shrubs, and oak have regenerated within burned areas, providing foraging habitat for wildlife (e.g., herbivores like big game; raptors), although the lack of mature trees provides relatively little cover. Snags in burned areas provide perching habitat for raptors.

Alternative 2:

- Would introduce routine noise and human activity into an area in conjunction with operation of a new substation, which may cause wildlife to avoid the area surrounding the substation.
- Would not cross any mapped habitats for greater sage-grouse and would not be in the vicinity of any active or historic leks. However, there are isolated observations of greater sage-grouse individuals or sign in the vicinity of Alternative 2, thus the species may still be affected.
- Would not affect UPD.
- Would alter both winter and yearlong habitat for elk. Alternative 2 would also alter crucial winter habitat for mule deer.
- Would not come near any springs or riparian systems.

- Would disturb grassland and oak habitats, which were burned in 2007. Sensitive raptors and other migratory birds could be affected by these habitat losses.
- BLM sensitive species with the most potential to be affected by Alternative 2 include ferruginous hawk, short-eared owl, burrowing owl, and long-billed curlew.

4.3.6 Range Resources

For purposes of the analysis of impacts to range resources, long-term disturbance would result at the pole locations due to occupation of the pole site and lack of revegetation in immediate proximity of the poles. Long-term disturbance would also result in areas of substation expansion, within the footprint of the substation. All short-term disturbance areas (tree cutting, access routes, pole construction areas, pulling stations, and temporary disturbance areas around substations) would be reseeded and would revegetate within the short-term timeframe.

Indicators of impacts to range resources are acreage of short- and long-term disturbance within grazing allotments.

4.3.6.1 Impacts Common to All Action Alternatives

Construction. Disturbed areas potentially reduce the amount or quality of forage within a grazing allotment. Short-term disturbances under any of the Action Alternatives would represent less than one percent of any one allotment/unit. Elimination of trees within the allotments and subsequent revegetation with grasses and shrubs would potentially result in an increase in forage within the allotments, although it would only be a portion of the disturbed area.

The proposed ROW for the Action Alternatives would roughly bisect many allotment use areas; however, none would create a barrier to movement between the portions of the allotments/use areas. No long-term impacts to grazing operations from the transmission line under any Action Alternative are anticipated.

Construction would likely occur during the period of use (**Table 3.2-3**) for all affected allotments. Once construction is underway, cattle would likely avoid construction zones due to noise and activity. Cattle may be reluctant to cross the ROW while construction is underway in any area; however, construction in any one area would be short in duration and should not affect the health and wellbeing of any livestock.

Impacts to range resources in tree cutting areas may be adverse in the short term if grazing is allowed to continue while the area revegetates, as cattle may damage the vegetation before it becomes established. Long-term beneficial impacts to range resources would result from tree cutting areas being revegetated with grasses and forbs for the life of the project, which would provide additional forage.

Operations, Maintenance, and Termination. There would be no direct or indirect impacts to grazing operations from operation, maintenance, or abandonment activities.

4.3.6.2 Proposed Action

The Proposed Action transmission line would cross several grazing allotments. There would be 142 poles located within the Mineral Range allotments (55 in West Use Areas and 87 within South Use Areas) and 106 poles within the Whitaker allotment. Two short-term pulling stations would be located within the Whitaker allotment and seven pulling stations would be located within the Mineral Range allotments (two stations within West

Use Areas and five within South Use Areas). **Table 4.3-12** details estimated disturbance to each allotment from the proposed transmission line.

Table 4.3-12 Acres of Disturbance within Grazing Allotments – Proposed Action

Disturbance Type		Mineral Range		North Creek	Whitaker	Total Allotment Disturbance (Acres)
		South Use Areas	West Use Areas			
Pole Installation (Short-term)		10.2	2.9	0.6	11.5	25.2
Pulling Stations (Short-term)	Inside ROW	4.4	1.0	0	1.8	7.2
	Outside ROW	3.9	1.3	0	1.0	6.2
New Access Construction (Short-term)	Inside ROW	8.3 (BLM)	3.1 (BLM)	0	1.5 (BLM) 0.6 (Private)	12.9 (BLM) 0.6 (Private)
	Outside ROW	0.8 (BLM)	0.5 (BLM)	0	0	1.3 (BLM)
Total Short-term Disturbance – Potential short-term loss of forage		27.6	8.8	0.6	16.4	53.4
Total Long-term Disturbance – loss of forage		<0.1	<0.1	<0.1	<0.1	0.1
Total Long-term Beneficial Impact – Gain of Forage in Areas where Trees Cut		19.4	17.5	0	11.7	48.6
Percentage of Allotment Affected	Adverse Impacts	0.1%	<0.1%	<0.1%	<0.1%	N/A
	Beneficial Impacts	<0.1%	<0.1%	0	<0.1%	N/A

Pole installation in conjunction with expansion of the Cameron Substation would temporarily disturb 0.6-acre of the North Creek Allotment (<0.1 percent of the allotment). This disturbance would be short-term.

Operations, Maintenance, and Termination. Vehicles would travel Pass Road during routine inspection or for necessary repairs of the line; however, this would not be expected to increase traffic levels on Pass Road appreciably. Approximately 48.6 acres of forested vegetation may be cleared within the ROW as needed, over the life of the line. Any trees felled would be lopped and scattered or bull hogged outside the wire zone within the ROW.

4.3.6.3 Alternative 1, Southern Route

The Alternative 1 transmission line would cross several grazing allotments. Approximately 213 poles would be located within the following allotments: Mineral Range (South Use Areas), Minersville #2, Milford Cattle, and Whitaker allotments. Two short-term pulling stations would be located within the Whitaker allotment; two pulling stations would be located in the Mineral Range allotments; and five pulling stations would be located within the Minersville #2 allotment.

Table 4.3-13 details estimated disturbance to each allotment from the proposed transmission line.

Table 4.3-13 Acres of Disturbance within Grazing Allotments – Alternative 1

Disturbance	Milford Cattle	Mineral Range	Minersville #2	North Creek	Whitaker	Total	
		South Use Areas					
Substation	0	0	0	0.7	0	0.7	
Pole Installation (Short-term)	0.2	7.7	8.7	0	7.9	24.4	
Pole Footprint (Long-term)	0	<0.1	<0.1	0	<0.1	0.1	
Pulling Stations (Short-term)	Inside ROW	0	0.6	1.4	0	0.9	2.9
	Outside ROW	0	2.4	5.3	0	1.8	9.5
New Access Construction (Short-term)	Inside ROW	0	6.2 (BLM)	6.4 (BLM) <0.01 (Private) 0.1 (State)	0	3.4(Private)	12.6 (BLM) 3.4 (Private) 0.1 (State)
	Outside ROW	0	0.2 (BLM)	0.5 (BLM)	0	0.2 (Private)	0.7 (BLM) 0.7 (Private)
Total Short-term Disturbance– Potential short-term loss of forage		0.2	28.7	42.5	0.7	13.3	85.4
Total Long-term Disturbance		0	<0.1	<0.1	0	<0.1	0.1
Total Long-term Beneficial Impact – Gain of Forage in Areas where Trees Cut		0	18.8	27.6	0	0	46.4
Percentage	Adverse	<0.1%	0.1%	0.2%	<0.1%	<0.1%	N/A

Disturbance		Milford Cattle	Mineral Range	Minersville #2	North Creek	Whitaker	Total
of Allotment Affected	Impacts						
	Beneficial Impacts	0	<0.1%	<0.2%	0	0	N/A

As under the Proposed Action, pole installation in conjunction with expansion of the Cameron Substation would temporarily disturb 0.6 acre of the North Creek Allotment (<0.1 percent of the allotment) under Alternative 1. This disturbance would be short-term.

Operations, Maintenance, and Termination. Approximately 46.4 acres of forested vegetation may be cleared within the ROW as needed, over the life of the line. Any trees felled would be lopped and scattered or bull hogged outside the wire zone within the ROW.

4.3.6.4 Alternative 2, Cove Fort to Milford Route

The Alternative 2 transmission line would cross several grazing allotments. Approximately 237 poles would be located within the following allotments: Mineral Range (West Use Areas), Mineral Range (North Use Areas), Milford Cattle, Milford Bench, Pine Creek/Indian Creek and Whitaker. One short-term pulling station would be located within the Whitaker allotment; two would be located within the Milford Bench allotment, three would be within the West Use Areas and six within the North Use Areas of the Mineral Range allotment.

Table 4.3-14 details estimated disturbance to each allotment from the proposed transmission line.

Table 4.3-14 Acres of Disturbance within Grazing Allotments – Alternative 2

Disturbance Type	Mineral Range		Milford Cattle	Milford Bench	Pine Creek/ Indian Creek	Whitaker	Total	
	North Use Areas	West Use Areas						
Substation (Short-term)	0	0	0	0	3.0	0	3.0	
Substation (Long-term)	0	0	0	0	2.0	0	2.0	
Pole Installation (Short-term)	10.6	4.6	0.2	7.3	0.1	5.0	27.8	
Pole Footprint (Long-term)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	
Pulling Stations (Short-term)	Inside ROW	0.4	0.8	0	1.7	0	1.4	4.3
	Outside ROW	0.1	3.4	0	1.1	0	0	4.6

Disturbance Type		Mineral Range		Milford Cattle	Milford Bench	Pine Creek/ Indian Creek	Whitaker	Total
		North Use Areas	West Use Areas					
New Access Routes (Short-term)	Inside ROW	2.5 (BLM) 0.9 (Private)	3.1 (BLM) 1.4 (State)	0		0	0 (BLM) 0.6 (Private)	5.6 (BLM) 1.5 (Private) 1.4 (State)
	Outside ROW	3.3 (BLM) 0.7 (Private) 1.4 (State)	0.1 (BLM)	0	None	0	<0.1 (Private)	3.4 (BLM) 0.7 (Private) 1.4 (State)
Total Short-term Disturbance– Potential short-term loss of forage		38.4	18.4	0.2	9.6	3.1	6.7	76.4
Total Long-term Disturbance		0.1	<0.1	<0.1	<0.1	2.0	<0.1	2.1
Total Long-term Beneficial Impact – gain of forage in areas where trees cut		0	0	0	0	0	0	0
Percentage of Allotment Affected	Adverse Impacts	0.1%	<0.1%	<0.1%	<0.1%	0.2%	<0.1%	N/A
	Beneficial Impacts	0	0	0	0	0	0	N/A

The Cove Fort substation construction under Alternative 2 would not disturb any grazing allotments.

Operations, Maintenance, and Termination. The ROW is currently maintained free of trees for an existing transmission line. In the future, occasional scattered trees may be cleared within the ROW as needed, over the life of the line. Any trees felled would be lopped and scattered or bull hogged outside the wire zone within the ROW.

4.3.6.5 No Action Alternative

There would be no impacts to grazing allotments under the No Action Alternative.

4.3.7 Wilderness Characteristics

Short-term impacts to wilderness characteristics would be noise and visual disturbances that would be associated with construction. Long-term impacts to wilderness characteristics would be the presence of the transmission line in the area with wilderness characteristics and would last for the life of the project.

Indicators of impacts to wilderness characteristics are the acreage of area that would no longer possess wilderness characteristics as a result of the project and qualitative effects of the presence of the transmission line on the wilderness experience.

4.3.7.1 Proposed Action

Construction. Impacts to wilderness characteristics are analyzed based on impacts to the size, naturalness, opportunity for solitude or primitive and unconfined recreation, and supplemental values.

The proposed transmission line would generally follow the boundary of the Granite Peaks area with wilderness characteristics, and would fall within the boundary for short distances. Nearly seven acres of the Proposed Action ROW would fall within the boundary. Within this area any trees would be cut. Approximately one acre of short-term disturbance from pole installation, pulling stations, and access within the ROW, and approximately 0.5-acre of disturbance from pulling stations outside the ROW would occur within this area with wilderness characteristics. Disturbance within the ROW would be long-term (for the life of the project). Disturbance outside the ROW would be a short-term visual impact until the vegetation recovers from the disturbance.

The Proposed Action ROW would separate three small areas (<0.1 acre, 2.2 acres and 0.4 acre) from the main body of the area with wilderness characteristics. The largest of these separated areas is between poles 180 and 188 where the transmission line is routed on the north side of Pass Road to achieve separation between the proposed transmission line disturbance and Cherry Creek Spring. The approximately 10-acre area comprised of the ROW and areas cut off by the ROW would no longer be considered to have wilderness characteristics, thus the proposed transmission line would reduce the size of the Granite Peaks area with wilderness characteristics by approximately 10 acres, which represents less than 0.01 percent of the area. This would be a long-term impact for the life of the project. However, reduction of the Granite Peaks area with wilderness characteristics by approximately 10 acres (<0.1 percent) would not affect its size such that its wilderness characteristics would be jeopardized. After construction, the northern edge of the ROW where it is on the north side of the Pass Road would be identified as the new boundary for the Granite Peaks area with wilderness characteristics.

In the short term, visitors in the Mineral Mountains area near the proposed ROW during the period of construction would experience an increased level of activity and noise, adversely affecting their sense of solitude and perceptions of the untrammled nature of the area. Short-term impacts to the recreational experience of visitors to the Granite Peaks area with wilderness characteristics would depend on their proximity to the proposed ROW. As visitors move deeper into the area with wilderness characteristics, construction in the ROW would no longer be visible and there would be no impacts to their wilderness experience (see **Figure 4.3-3** for the area where the transmission line would be visible).

Operations, Maintenance, and Termination. Operation and maintenance of the transmission line would occur outside the area with wilderness characteristics (assuming it is reduced in size to exclude the Proposed Action ROW), therefore there would be no impact to wilderness characteristics.

4.3.7.2 Alternative 1, Southern Route

No lands with wilderness characteristics would be affected by Alternative 1.

4.3.7.3 Alternative 2, Cove Fort to Milford Route

No lands with wilderness characteristics would be affected by Alternative 2.

4.3.7.4 No Action Alternative

Lands with wilderness characteristics would not be affected by the No Action Alternative.

4.3.8 Recreation

Long-term impacts to recreation would be related to the visual changes in the landscape from the new transmission line and are discussed under Visual Resources (**Section 4.3.9**). Short-term impacts to recreation are the noise and visual disturbances, and travel delays that would occur during the construction period, and are discussed below.

Indicators of impacts to recreation would be changes in the recreational experience.

4.3.8.1 Proposed Action

Construction. Recreational use in the vicinity of the proposed ROW would be affected in the short term by increased vehicle traffic on Pass Road and actual construction activity in areas where the transmission line is adjacent to the road. Pass Road may be closed for short periods of time, particularly when construction involves installing the line across the road. Upon completion of the project, visitors in the immediate vicinity of Pass Road would visually experience long-term impacts including an increased level of development from the removal of trees within the ROW in addition to the transmission line.

Noise and increased activity levels from construction may disturb wildlife in the short-term and affect hunting if construction is taking place during a hunting season.

Due to the proximity of the Cameron Substation and associated transmission lines to private property and development, no impacts from construction to recreation on BLM-administered lands in the vicinity of the Cameron Substation are expected.

Operations, Maintenance, and Termination. Routine inspection of the transmission line would occur via Pass Road; however, short-term adverse impacts resulting from increases in vehicle travel on the road as a result of operation and maintenance would not be perceptible to recreationists. Should repair or replacement of components be required an increased level of equipment, activity, and noise may affect recreationists for the short term in the immediate proximity to the work. No long-term loss of recreational experience would result from the project.

4.3.8.2 Alternative 1, Southern Route

Construction. Noise and increased activity levels may disturb wildlife in the area and affect small game and antelope hunting if construction is taking place during a hunting season.

Alternative 1 would avoid most of the Mineral Mountains area and thus would not have as many direct or indirect impacts on recreation as under the Proposed Action (or Alternative 2).

Operations, Maintenance, and Termination. Direct or indirect impacts to the recreation experience along Alternative 1 are not expected from operations, maintenance, or abandonment activities.

4.3.8.3 Alternative 2, Cove Fort to Milford Route

Construction. Noise and increased activity levels may disturb wildlife in the area and affect hunting if construction is taking place during a hunting season. Hunting may take place anywhere along the Alternative 2 ROW.

In the short term, visitors in the Mineral Mountains area near the Alternative 2 ROW during the period of construction would experience an increased level of activity and noise, likely adversely affecting their sense of solitude and perceptions of the untrammled nature of the area. Overall, there would be fewer direct and indirect impacts on recreation resources under Alternative 2 in the Mineral Mountains area than under the Proposed Action, as fewer visitors are expected due to a lower level of access (i.e., secondary roads only).

Similar to the Proposed Action, the proximity of the Cove Fort Substation and associated transmission lines to private property and development would likely preclude direct and indirect impacts on recreation within BLM-administered lands in the vicinity of the Cove Fort Substation.

Operations, Maintenance, and Termination. Direct or indirect impacts to the recreation experience along Alternative 2 are not expected from operations, maintenance, or abandonment activities.

4.3.8.4 No Action Alternative

There would be no impacts to the recreation experience under the No Action Alternative.

4.3.9 Visual Resources

Methods for determining impacts to visual resources can be found in the Visual Resources Technical Report (**Appendix G**). Refer to **Appendix G** for an explanation of how impacts to landscape scenery and sensitive viewers were determined based on the baseline visual characteristics of each Visual Analysis Unit, described in **Section 3.2.8**. **Appendix G** also contains a description of KOPs along the proposed ROW and an analysis of compliance with BLM Visual Resource Management Objectives.

The main visual disturbances in the Project Area would be the clearing of vegetation within the ROW and the addition of a transmission line to the landscape. The following analysis describes the specific impacts to landscape scenery and viewer sensitivity in the Project Area.

Landscape Scenery Impacts. Impacts to the landscape scenery on the eastern- and western-most portions of the Project Area would be similar. In Unit 1 (Southeast), Unit 4 (Northeast), and Unit 3 (West), effects to landscape scenery would range from low, in areas of less topography and more distant from the Mineral Mountains (where the level of agriculture use and development increase), to moderate as the viewer approaches the Mineral Mountains. Impacts to the landscape scenery in the middle of the Project Area (Unit 2) would be moderate to high, as this is a highly scenic area with strong landscape contrast.

Viewer Sensitivity Impacts. Impacts to viewer sensitivity in the Project Area depend on the sensitivity rating of the area, the landscape contrast, and proximity of the transmission line to roads or scenic features in areas that attract sensitive viewers. In areas where the ROW would be visible from a road or where a road would intersect the ROW, viewer sensitivity impacts would be more adverse, while in areas where the ROW would parallel or be further from a road, viewer sensitivity impacts would be less adverse. Impacts to viewer sensitivity are discussed further in the sections below, by alternative.

For purposes of the analysis of impacts to visual resources, long-term disturbance would result at any location where visual differences would remain at the end of the short-term timeframe.

4.3.9.1 Proposed Action

CGBA RMP Amendment. Under the Proposed Action the CGBA RMP would be amended to change the VRM classification for 594 acres of the Project Area from VRM Class II to VRM Class IV (**Figures 1.1-1 and 2.1-1 in Appendix I**). The amended area would take in areas where the transmission line would not meet the existing VRM objectives. The change in VRM Class would allow the proposed 138 kV transmission line to meet VRM objectives, but no other direct effects to visual resources would occur. The change in VRM Class may allow for future development of other projects in the area, but determination of any impacts to visual resources would be speculative at this time and beyond the scope of this analysis.

Construction. Impacts to visual resources from the Proposed Action are summarized in **Table 4.3-15**.

Table 4.3-15 Summary of Impacts to Visual Resources by Unit – Proposed Action

	Visual Analysis Units			
	Unit 1 – Southeast	Unit 2 – Middle	Unit 3 - West	Unit 4 – Northeast
Landscape Scenery Impact	Low to Moderate	Moderate to High	Low to Moderate	N/A
Impact to Sensitive Viewers	Pass Road and I-15 – Low to Moderate	Secondary Roads – Low to Moderate	All roads – Low	N/A
		Pass Road – Moderate		
		Granite Peaks – Moderate to High		
Compliance with Agency Visual Management Objectives	VRM Class IV Objectives would be met	VRM Class II Objectives would not be met without an RMP Amendment	VRM Class IV Objectives would be met	N/A
Overall	Low to Moderate	Moderate	Low	N/A

Sensitive viewers from Pass Road and other secondary roads in the eastern- and western portions of the line (Units 1 and 3) would be viewing the Proposed Action transmission line from 0.25- to 0.50-mile away. Impacts to sensitive viewers on Pass

Road would be low to moderate in the eastern-most portion, and low in the western-most portion of the Project Area.

Impacts to visual resources in the central portion of the proposed ROW (Unit 2) would be relatively more adverse (**Table 4.3-15**) than those occurring to the other units. The transmission line infrastructure in this area would contrast moderately to strongly with the surrounding natural environment. The sensitivity level for most of the proposed ROW in this area is moderate; however, three poles (numbers 174, 186 and 187) would fall within the area of high sensitivity level (discussed below) and ten poles would be on the boundary between the areas of moderate and high sensitivity. All trees within this portion of the proposed ROW may be cut within the ROW, which would be parallel and adjacent to or contiguous with Pass Road in places. Sensitive viewers on Pass Road would be viewing the transmission line less than 0.25-mile away for approximately 4.5 miles as the line parallels Pass Road through the Unit. For 1.8 miles, travelers on Pass Road would be looking at the area of high sensitivity with the transmission line in the foreground. The viewer impact for sensitive viewers on Pass Road for this Unit would be moderate (**Table 4.3-15**).

Sensitive viewers within the Granite Peak area with wilderness characteristics, which has a high sensitivity level, would observe the transmission line and/or ROW within or on the boundary of the area for 1.1 miles. **Figure 4.3-3** (found in **Appendix I**) below is a viewshed analysis of the transmission line poles along and within the area with high sensitivity overlaying the viewshed analysis of Pass Road in the same area. The areas of pink indicate where Pass Road can be seen. The areas of blue indicate where the transmission line poles can be seen and the road cannot be seen. Note that the viewshed analysis reflects topography only and not vegetation, and thus represents a worst case scenario of visibility of the transmission line and poles from the area with high sensitivity. The figure demonstrates that very little area within the area with high sensitivity would be visually impacted by the transmission line that is not already visually impacted by Pass Road. Most of this newly impacted area is at lower elevations and is in relatively close proximity to Pass Road.

In some portions of the area with wilderness characteristics where Pass Road is not visible, visitors would be looking at the upper portions of the transmission line and poles. The transmission line infrastructure would not be skylined; visually, the background would be complex and interesting with rock formations and vegetation, and has a high capacity to absorb the additional development. The linear nature of the conductor would lend itself to blending with the background. The dark wood poles would blend well with the background scenery. With increased distance the transmission line infrastructure would be less and less noticeable.

Depending on their vantage point, viewers in the area of high sensitivity would see multiple poles and the cleared ROW, or just the upper portion of the poles, or in some cases none of the development would be visible as topography and vegetation would be expected to block or partially block the view. After a certain point the transmission line and poles would blend with the background, reducing or eliminating their visibility. Impacts to sensitive viewers within the high sensitivity area would experience impacts that could range from none to high, depending on whether they could see the poles and the distance from which they are viewing them.

There would thus be a potential for moderate to high impacts to sensitive viewers within the Granite Peaks area (**Table 4.3-15**).

Appendix G contains visual simulations prepared for each KOP to provide an approximation of the appearance of the Proposed Action transmission line and ROW within the scenery. The effect of feathering the ROW edges on the appearance of the ROW in the scenery would depend on BLM specifications, and may vary from the simulations presented in **Appendix G**. KOP 2 and KOP 4 would not comply with the existing BLM VRM objectives for Class II. All other KOPs would meet the VRM objectives designated for the area in which the KOPs occur. By amending the CGBA RMP as a part of the Proposed Action, all KOPs would meet VRM objectives.

Cameron Substation Expansion Area. One double pole would be added on BLM lands in VRM Class IV adjacent to the Cameron Substation; there is already a transmission line located in this area, connected to the Cameron Substation. The area would continue to meet VRM Class IV objectives.

Operations, Maintenance, and Termination. Operation of the transmission line would not create any disturbance within the Project Area. Repair or replacement of poles, conductor, etc. would involve operation of vehicles and/or equipment within the ROW, which would crush vegetation and may result in some ground disturbance. Short-term impacts to visual resources from operation and maintenance would include the presence of workers and equipment, and would be a low impact, if any.

4.3.9.2 Alternative 1, Southern Route

Construction. Impacts to visual resources from Alternative 1 are summarized in **Table 4.3-16**.

Table 4.3-16 Summary of Impacts to Visual Resources by Unit – Alternative 1

	Unit 1 - Southeast	Unit 2 - Middle	Unit 3 - West	Unit 4 - Northeast
Landscape Scenery Impact	Low to Moderate	High	Low to Moderate	N/A
Impact to Sensitive Viewers	Low	Pass Road – Low to Moderate	Low	N/A
		Granite Peaks – Moderate		
Compliance with Agency Visual Management Objectives	VRM Class IV Objectives would be met	VRM Class III Objectives would be met	VRM Class IV Objectives would be met	N/A
Overall	Low to Moderate	Moderate	Low	N/A

Sensitive viewers in the eastern and western portions of the Alternative 1 ROW would be impacted as described under the Proposed Action.

Impacts to sensitive viewers in the middle portion of the Alternative 1 ROW, through the Mineral Mountains, would be moderate. There are multiple access points to this area from secondary roads, from which the transmission line would be visible, and users in

the Mineral Mountains area have an awareness and appreciation of recreation and natural areas. Secondary roads are 0.25-0.5 mile away from the Alternative 1 line and several secondary roads would cross it. Sensitive viewers (hunters and other recreationists) may also see the line from nearby areas used for dispersed recreation. Overall impacts to sensitive viewers on secondary roads from the Alternative 1 line in the middle portion of the line would be low moderate, depending on the distance between the viewer and the transmission line (**Table 4.3-16**).

Under Alternative 1 impacts to sensitive viewers would be less adverse than under the Proposed Action. VRM objectives would be met.

Operations, Maintenance, and Termination. Impacts would be the same as those described for the Proposed Action.

4.3.9.3 Alternative 2, Cove Fort to Milford Route

Construction. Impacts to visual resources from the Proposed Action are summarized in **Table 4.3-17**.

Table 4.3-17 Summary of Impacts to Visual Resources by Unit – Alternative 2

	Unit 4 - Northeast	Unit 2 - Middle	Unit 3 - West	Unit 1 - Southeast
Landscape Scenery Impact	Low	Low	Low	N/A
Impact to Sensitive Viewers	Low	Low	Low	N/A
Compliance with Agency Visual Management Objectives	VRM Class IV Objectives would be met	VRM Class II Objectives would be met	VRM Class IV Objectives would be met	N/A
Overall	Low	Low/Moderate	Low	N/A
Cove Fort Substation Expansion	Class IV VRM Objectives would be met			N/A

Sensitive viewers on secondary roads in the eastern and central portion of the line (Units 4 and 2) could be viewing the Alternative 2 transmission line as close as 0 to 0.25-mile away, from an unpaved road that runs very close to the line. The line would also be visible to travelers on I-15; however, at highway speeds views would be brief. Travelers on Black Rock Road, over four miles away to the north, may also be able to see the transmission line. Sensitive viewers along the Alternative 2 ROW in the Mineral Mountains area have an awareness and appreciation of recreation and natural areas, and may also see the line from nearby areas used for dispersed recreation. The transmission line would be visible from multiple areas, but the proposed line would replace an existing line, therefore the impact to sensitive viewers would be low (**Table 4.3-17**).

Overall, viewer sensitivity impacts under Alternative 2 would be less adverse than the Proposed Action or Alternative 1. VRM objectives would be met.

Cove Fort Substation. There is existing disturbance in the VRM Class IV area where the substation would be constructed on BLM lands. The area would continue to meet VRM Class IV objectives.

Operations, Maintenance, and Termination. Impacts would be the same as those described for the Proposed Action.

4.3.9.4 No Action Alternative

The No Action Alternative would have no impact on visual resources.

4.3.10 Cultural Resources

The analysis of the Proposed Action, Alternative 1, and Alternative 2 impacts to cultural resources utilizes the Class I literature review and Class III pedestrian inventory data presented in **Section 3.2.9**. This data is summarized in **Table 4.3-18**.

Table 4.3-18 Summary of Class I Data

Alternative	Total Length in Miles	Number of Previous Projects*	Number of Previously Recorded Sites*	Number of Prehistoric Sites	Number of Historic Sites	Number of Multi-Component Sites	Number of Unknown Affiliation Sites
Proposed Action	15.3	37	77	34	31	6	6
Alternative 1	19.6	40	57	24	28	4	1
Alternative 2	26.0**	75	272	219	35	4	14

*within 0.5 mile of either side of ROW

**Total length of the ROW following the Alternative 2 route would be 26 miles; however, four miles of the route have already been reconstructed. The portion of the cultural resources found within this four mile segment would not be affected by construction under Alternative 2.

Indicators of impacts to cultural resources are the number of sites potentially impacted and the ability to mitigate for any impacts.

4.3.10.1 Proposed Action

The results of the record search indicate both prehistoric and historic use of the Proposed Action area. Based on the previously recorded sites within 0.5 mile either side of the Proposed Action, cultural resources would be expected to include prehistoric artifact scatters dating to the Archaic and Formative periods and historic cultural resources related to transportation, mining, ranching, and/or infrastructure (Yoder and Neilson 2011).

A Class III field inventory was conducted on the Proposed Action ROW and 13 NRHP-eligible sites were recorded within the ROW (**Section 3.2.9**). The Proposed Action would avoid, by design or redesign, 11 of the 13 NRHP-eligible cultural resource sites (**Table 3.2-7**). The physical integrity and function of these 11 sites, including the characteristics of location, design, materials, workmanship, and association, would not be damaged or destroyed by project-related construction. There would be No Adverse Effect to these 11 sites since the undertaking would not alter, damage, or destroy these NRHP-eligible sites.

Regarding the remaining two sites, a large artifact scatter (42BE874) and a large historic debris scatter associated with the Union Pacific Railroad (42BE3662) would be adversely affected by power pole construction under the Proposed Action. Mitigation of these sites would be implemented (see **Section 2.2**).

4.3.10.2 Alternative 1, Southern Route

The results of the record search for Alternative 1 are similar to the Proposed Action and site density, or archaeological sensitivity, is expected to be similar as well. Cultural resources within the Alternative 1 ROW would be expected to include prehistoric artifact scatters dating to the Archaic and Formative periods and historic cultural resources related to transportation, mining, ranching, and/or infrastructure.

4.3.10.3 Alternative 2, Cove Fort to Milford Route

The results of the record search for Alternative 2 indicate both prehistoric and historic use of the Alternative 2 area. Site density, or archaeological sensitivity, is higher than the Proposed Action or Alternative 1 (Wygant and Boley 2012) with a greater range of time periods represented. Cultural resources within the Alternative 2 ROW would be expected to include quarries and more complex prehistoric artifact scatters. Sites could date anywhere from the Paleoindian to Protohistoric periods. Historic cultural resources related to ranching, transportation, and/or infrastructure would be expected.

A Class III cultural resource inventory would be conducted prior to any construction activities if this alternative were selected. Because the site density within the Alternative 2 ROW is expected to be higher, it would likely be more difficult to avoid all NRHP-eligible sites; therefore, there may be a larger number of sites included in the treatment plan (**Section 2.2**).

4.3.10.4 No Action Alternative

There would be no impacts to cultural resources under the No Action Alternative.

4.3.11 Socioeconomic Resources

Most impacts to socioeconomic resources would be the same under all the Action Alternatives due to the scope of the analysis (Beaver County). For purposes of the analysis of impacts to socioeconomics, short-term impacts would be those temporary effects associated with construction and would end with completion of construction. Long-term impacts would result from ongoing operations and maintenance of the project.

Indicators of impacts to socioeconomics would be changes to the socioeconomic environment including supply of electricity, economic growth and development, and impacts to electrical rates.

4.3.11.1 Impacts Common to all Action Alternatives

Construction. Construction of the transmission line would employ 5-10 workers at any one time during the 12 months estimated to complete the line. These workers may come from within Beaver County, which may provide a few jobs to local residents, but these additions to the job market would not have a measurable effect on socioeconomic resources in Beaver County.

Operations, Maintenance, and Termination. Operation and maintenance of the transmission line would not require enough workers to measurably affect socioeconomic resources in Beaver County.

The main socioeconomic impact of the transmission line would be the provision of an adequate supply of reliably available electrical service to western Beaver County. The 138 kV service would fully meet PacifiCorp's existing contracted service levels for commercial/industrial services, as well as the existing agricultural and residential needs. Replacement of the presently unreliable system would alleviate routine outages and reduce the number of minutes/hours of lost service to residential and commercial users. The availability of 138 kV service would meet existing needs without posing a threat to the viability of the electric distribution system and supply would exceed current demand, allowing for future economic growth and development, and residential expansion in the area (discussed in greater detail under the cumulative impacts analysis in **Section 4.4.4**).

4.3.11.2 Proposed Action

Total construction costs under the Proposed Action are estimated to be the least costly of the Action Alternatives, helping to minimize price impacts to rate payers.

Under the Proposed Action 24 acres of private lands would be contained within the ROW. One acre of farmland of statewide importance on private lands would be disturbed by the project, potentially affecting private agriculture. The ROW would not cross any SITLA lands.

Under the Proposed Action the existing 46 kV transmission line would be maintained to provide redundancy for the electrical supply to Milford. The existing 46 kV service does not fully meet the electrical demand in the Milford area, but it would temporarily sustain service in the case of an outage along the new 138 kV transmission line).

4.3.11.3 Alternative 1, Southern Route

Under Alternative 1 the total construction costs have a greater impact on the rates paid by customers relative to the Proposed Action; however, because of the increased overall cost of Alternative 1, there would be a slightly greater beneficial impact on the local economy through job creation and construction spending.

Under Alternative 1, 45 acres of private lands and 13 acres of SITLA lands would be contained within the ROW. Similar to the Proposed Action, 1.1 acres of farmland of statewide importance on private lands would be disturbed by the project, potentially affecting private agriculture. Encumbering SITLA lands with a utility ROW may affect the ability of the State to utilize the lands for other purposes.

Under Alternative 1, system redundancy would be the same as described for the Proposed Action. The existing 46 kV transmission line would be maintained to provide redundancy for the electrical supply to Milford. The existing 46 kV service does not fully meet the electrical demand in the Milford area, but it would temporarily sustain service in the case of an outage along the new 138 kV transmission line.

4.3.11.4 Alternative 2, Cove Fort to Milford Route

Similar to Alternative 1, the total construction costs under Alternative 2 are estimated to have a greater impact on the rates paid by customers relative to the Proposed Action,

and slightly greater impact on the local economy through jobs and construction spending.

Under Alternative 2, 37 acres of private lands and 10 acres of SITLA lands would be contained within the ROW. An estimated 10.3 acres of farmland of statewide importance on private lands would be disturbed by the project, potentially affecting private agriculture. Encumbering SITLA lands with a utility ROW may affect the ability of the State to utilize the lands for other purposes.

Under Alternative 2, the existing 46 kV transmission line would be maintained to provide redundancy for the electrical supply to Milford. The existing 46 kV service does not fully meet the electrical demand in the Milford area, but it would temporarily sustain service in the case of an outage along the new 138 kV transmission line. However, nearly half of the Alternative 2 route is parallel to the existing 46 kV transmission line connecting the Blundell Geothermal Plant with the Milford Substation. Should an event, such as wildfire, damage both of these lines, the 46 kV system could not be supported with power from the Blundell plant, which may reduce the amount of electricity available during an outage of the 138 kV transmission line (depending on the functionality of Blundell at the time of the outage).

4.3.11.5 No Action Alternative

Under the No Action Alternative the proposed transmission line would not be built. Additional power supply to the town of Milford would not be available; frequent outages would continue through the use of the fundamentally unreliable electric transmission system, and may become more frequent as demand for electricity increases. Frequent outages, which result from a fundamentally unreliable system with no redundancy, and demand that exceeds available supply, would have adverse social and economic impacts on area residents (500 or more minutes per year per customer) and businesses. Electrical demand would not be able to be met during certain times of the year, and contracted levels of service may not be able to be provided, depending on demand levels. Economic expansion (residential or commercial) in the vicinity of Milford would be difficult without the availability of reliable electrical service, and development may be hampered.

4.4 Impact Summary

Table 4.4-1 summarizes impacts from the Proposed Action and Action Alternatives by resource.

Table 4.4-1 Impact Summary Table

Resource	Disturbance/Impact			
	Proposed Action	Alternative 1 – Southern Route	Alternative 2 – Cove Fort to Milford Route	No Action Alternative
Soils				
Total Short-term Disturbance (acres)	81.9	92.7	68.2	0
Total Long-term Disturbance (acres)	1.2	1.2	2.2	0
Sensitive Soils - Total Short-term Disturbance (acres)	16.5	9.4	17.6	0
Short-term Farmland Disturbance - Total (acres)	12.6	7.1	10.7	0
Short-term Disturbance to Prime Farmland – Total (acres)	0	0	0.5	0
Short-term Farmland Disturbance – Private Lands (acres)	1.0	1.1	10.3	0
Short-term Disturbance to Areas Susceptible to Erosion (acres)	3.9	2.3	6.9	0
Sensitive Soils - Total Long-term Disturbance (acres)	0.2	0.2	<0.1	0
Long-term Farmland Disturbance (acres)	0.2	0.2	<0.1	0
Long-term Disturbance to Prime Farmland	0	0	<0.01*	0
Long-term Disturbance to Areas Susceptible to Erosion (acres)	<0.1	<0.01	<0.1	0
Water Resources				
Short-term Disturbance within 100-meter Buffer of Riparian Areas (acres)	10.8	5.3	0	0

Resource		Disturbance/Impact			
		Proposed Action	Alternative 1 – Southern Route	Alternative 2 – Cove Fort to Milford Route	No Action Alternative
Long-term Disturbance within 100-meter Buffer of Riparian Areas (acres)		0.01	<0.01	0	0
Vegetation					
Total Short-term Disturbance (acres)		81.9	92.7	68.4	0
Short-term – Vegetation Clearing and Long-term Vegetation Maintenance (acres)		48.6	46.4	0	0
Total Long-term Disturbance (acres)		49.7	47.5	2.0	0
Woodland Products & Forestry					
Short-term Tree Cutting (acres)		40.4	45.5	0	0
Tons/Cords Wood Products		186/62	614/204	0	0
Long-term Vegetation Maintenance (acres)		48.6	46.4	0	0
Wildlife including Special Status Species					
Greater Sage-grouse	General	Would cross occupied greater sage-grouse habitat and come within one mile of an historic lek	Would cross occupied greater sage-grouse habitat and less than one mile from an historic lek	Does not cross any mapped habitats for greater sage-grouse and is not in the vicinity of any active or historic leks. However, there are isolated observations of greater sage-grouse individuals or sign in the vicinity of Alternative 2, thus the species may still be affected	N/A

Resource		Disturbance/Impact						
		Proposed Action		Alternative 1 – Southern Route		Alternative 2 – Cove Fort to Milford Route		No Action Alternative
Greater Sage-grouse (Continued)	Occupied Habitat – Total Short-term Disturbance (acres)	5.3		11.1		0.0		0
	Occupied Habitat – Total Long-term Disturbance (acres)	0.04		0.05		0.0		0
	Type and Number of Poles and Guys in Occupied Habitat	Single Poles – 19 Double Poles - 1 Guys - 1		Single Poles – 39 Double Poles – 1 Guys – 1**		0		0
	Type, Miles, and Disturbance Acreage of Access in Occupied Habitat	Existing – 4.4 miles Centerline Overland Travel – 1.5 miles, 1.8 acres		Existing – 8.6 miles Centerline Overland Travel – 3.9 miles, 4.7 acres		0		0
UPD		No Impact		Route would cross 5.2 miles of USFWS-designated areas where low-intensity surveys for UPD are required as potentially containing suitable habitat; may affect UPD if present		No Impact		No Impact
Mule Deer	Crucial Winter Range Disturbance (acres)	Short-term	25.1	Short-term	23.7	Short-term	46.2	0
		Percent of Habitat Type	0.005673%		0.005356%		0.010442%	

Resource		Disturbance/Impact						
		Proposed Action		Alternative 1 – Southern Route		Alternative 2 – Cove Fort to Milford Route		No Action Alternative
Mule Deer (Continued)	Crucial Winter Range Disturbance (acres) (Continued)	Long-term	36.7	Long-term	27.1	Long-term	2.1	
		Percent of Habitat Type	0.00829%		0.00612%		0.00047%	
	Substantial Summer Range Disturbance (acres)	Short-term	8.1	Short-term	10.4	Short-term	0	
		Percent of Habitat Type	0.01929%	Percent of Habitat Type	0.02477%	Percent of Habitat Type	0.00000%	
		Long-term	1.3	Long-term	20.3	Long-term	0	
		Percent of Habitat Type	0.03096%	Percent of Habitat Type	0.04835%	Percent of Habitat Type	0.00000%	
Migratory Birds & Bats		Would disturb potential riparian habitats via construction noise. Eleven acres of the Proposed Action ROW comes within 100 meters of a spring or stream. Noise could disturb migratory birds and possibly foraging bats		Would cross Cherry Creek and may disturb some riparian habitat via construction noise, but fewer acres than the Proposed Action. Five acres of the Alternative 1 ROW comes within 100 meters of a spring or stream. Noise could disturb migratory birds and possibly foraging bats		Would not come near any springs or riparian systems. Would disturb grassland and oak habitats, which were burned in 2007. Sensitive raptors and other migratory birds could be affected by these habitat losses		No Impact
Raptors		Would disturb about 20 acres of mahogany-conifer; unique habitat potentially affecting ferruginous hawk		Would disturb sagebrush habitat and pinyon-juniper habitat potentially disturbing sensitive raptors and other migratory birds				No Impact

Resource	Disturbance/Impact			
	Proposed Action	Alternative 1 – Southern Route	Alternative 2 – Cove Fort to Milford Route	No Action Alternative
BLM Sensitive Species	Could affect sensitive bats and ferruginous hawk	Could affect sensitive bats, ferruginous hawk, pygmy rabbit, and Townsend's big-eared bat	Could affect ferruginous hawk, short-eared owl, burrowing owl, and long-billed curlew	No Impact
Range Resources				
Total Short-term Loss of Forage to Grazing Allotments (acres)	53.4	85.4	76.4	0
Total Long-term Disturbance to Grazing Allotments (acres)	0.1	0.1	2.1	0
Total Potential Long-term Gain of Forage to Grazing Allotments (acres)	48.6	46.4	0	0
Average Percentage of Allotment Affected	<0.1%	0.1%	0.1%	0
Wilderness Characteristics				
Acreage of Wilderness Characteristics Lost	10	0	0	0
Recreation				
Short-term Impacts	Noise, Construction Activity, Traffic Delays Along Pass Road	Noise and wildlife disruptions affecting hunting	Noise and wildlife disruptions affecting hunting	No Impact
Long-term Impacts	Visual disturbance associated with cut trees and presence of transmission line	Fewer impacts than Proposed Action because Mineral Mountains avoided	Fewer impacts than Proposed Action because fewer visitors	No Impact

Resource	Disturbance/Impact			
	Proposed Action	Alternative 1 – Southern Route	Alternative 2 – Cove Fort to Milford Route	No Action Alternative
Visual Resources				
Overall Impacts	Unit 1 – Low to Moderate Unit 2 - Moderate Unit 3 – Low	Unit 1 – Low to Moderate Unit 2 – Moderate Unit 3 – Low	Unit 1 – Low Unit 2 – Low to Moderate Unit 3 – Low	No Impact
RMP Amendment Required?	Yes	No	No	No
VRM Class Objectives Met?	No	Yes	Yes	Yes
Change in VRM Class (acres)	594	0	0	0
Cultural Resources				
NRHP-eligible Cultural Resource Sites	No adverse effect to 11 sites; two sites adversely affected and mitigation implemented.	Expected to be similar to Proposed Action. NRHP-eligible sites would be avoided and any adverse effects mitigated.	Record search indicates density and sensitivity higher than the Proposed Action and Alternative 1. NRHP-eligible sites would be avoided and any adverse effects mitigated.	No effect
Socioeconomics				
Energy to Meet Current Obligations and to Allow for Additional Growth	All Action Alternatives would meet the present energy needs of western Beaver County and allow for additional growth.			Energy needs would go unmet.
System Redundancy to Provide Backup Power During and Outage	The existing 46 kV transmission line would be maintained to provide redundancy for the electrical supply to Milford, to the extent that 46 kV would meet the demand at that time.		Same as Proposed Action; however, should an event, such as wildfire, damage both of these lines, the 46 kV system could not be supported with power from the Blundell plant, which may reduce the amount of electricity available during an outage.	Frequent outages would continue through the use of the existing 46 kV system, which has no redundancy.

Resource	Disturbance/Impact			
	Proposed Action	Alternative 1 – Southern Route	Alternative 2 – Cove Fort to Milford Route	No Action Alternative
Impacts to Private and SITLA Lands	ROW contains 24 acres of private lands and no SITLA lands; 1 acre farmland of statewide importance on private lands	ROW contains 45 acres of private lands, 13 acres of SITLA lands, and may affect agriculture on 1.1 acres of farmland of statewide importance on private lands	ROW contains 37 acres of private lands, 10 acres of SITLA lands, and may affect agriculture on 10.3 acres of farmland of statewide importance on private lands	None

*Poles of the existing transmission line that would be replaced under Alternative 2 result in existing long-term disturbance to prime farmland, similar to the amount estimated here.

** The Alternative 1 route pole and other disturbance locations shown in the map book in Appendix C are estimates; the route is not engineered where it deviates from the Proposed Action route, and potential guy locations are unknown.

4.5 Cumulative Impacts Analysis

CEQ regulations define cumulative effects as "...the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7).

Projects that are anticipated to be completed within the next five years are, for purposes of this analysis, considered to be within a reasonable planning timeframe, as general project parameters would be known. Similar to impact analysis associated with the Proposed Project, the duration of short-term cumulative impacts would be five years, while long-term impact would be expected to last 10 years.

4.5.1 Cumulative Impacts Areas

4.5.1.1 Soils

The cumulative impacts area (CIA) for soils includes an area 0.50-mile either side of the proposed disturbance area under each alternative and extended to take in disturbance in the immediate area such as Pass Road and Blundell; and also includes the boundaries of any sensitive soils units (high erosion potential and prime farmland) crossed (**Figure 4.5-1 in Appendix I**). The 43,074-acre CIA encompasses:

- 27,697 acres of BLM-managed public lands
- 12,990 acres of private lands
- 2,343 acres of SITLA lands
- 34 acres of U.S. Forest Service-managed public lands

4.5.1.2 Water Resources

The CIA for water resources is an area that is (1) Bounded on the East by Indian Creek, Wildcat Creek, and Beaver River (south of Cameron) drainages; (2) Bounded on the West by the Beaver River Valley; (3) Also includes Mineral Mountain, Ranch Canyon, Corral Canyon, Negro Mag Wash (**Figure 4.5-2 in Appendix I**). The 500,016-acre CIA encompasses:

- 286,980 acres of BLM-managed public lands
- 125,429 acres of private lands
- 56,487 acres of U.S. Forest Service-managed public lands
- 29,732 acres of SITLA lands
- 624 acres of wildlife reserve/management area managed by the Utah Division of Wildlife Resources
- 594 acres of waterbeds
- 170 acres of parks and recreation area managed by Utah State Parks

4.5.1.3 Vegetation

Similar to soils, the CIA for vegetation an area 0.50-mile either side of the proposed disturbance area under each alternative (**Figure 4.5-3 in Appendix I**). The 37,401-acre CIA encompasses:

- 25,741 acres of BLM-managed public lands
- 9,409 acres of private lands

- 2,217 acres of SITLA lands
- 34 acres of U.S. Forest Service-managed public lands

4.5.1.4 Woodland Products and Forestry

The CIA for woodland products and forestry includes all “wood” vegetation types that intersect the project area, and areas identified by the BLM as “fuel wood” (**Figure 4.5-4** in **Appendix I**). The 97,019-acre CIA encompasses:

- 82,116 acres of BLM-managed public lands
- 9,639 acres of SITLA lands
- 5,217 acres of private lands
- 40 acres of wildlife reserve/management area managed by the Utah Division of Wildlife Resources and parks and recreation area managed by Utah State Parks
- 7 acres of U.S. Forest Service-managed public lands
- The burned area within the CIA totals 49,941 acres.

4.5.1.5 Wildlife

The CIA for wildlife (other than raptors, greater sage-grouse, and UPD) is a compilation of the separate ranges for pronghorn, mule deer, and elk, truncated at areas that were distant from the project area where the habitat narrowed to a neck (**Figure 4.5-5** in **Appendix I**). The acreages within the CIA by managing agency are provided in **Table 4.5-1**.

Table 4.5-1 Wildlife Cumulative Impacts Area Acreages by Species and Land Ownership/Management

Type	Acres							
	BLM	Indian Reservation	Private	SITLA	UT State Parks	USFS	Water	Total
Pronghorn Year-long Crucial Habitat	777,607	0	271,369	90,144	0	0	192	1,139,312
Mule Deer Habitat	395,264	1,898	72,159	36,124	1,112	66,681	80	573,318
Rocky Mountain Elk Habitat	206,163	1,898	66,901	16,370	2,413	108,622	0	402,367
Combined Big Game CIA*	1,064,246	1,898	353,448	116,096	2,521	127,438	271	1,665,918

*Accounts for overlap.

GIS data sources: prho20100429; mude20120209; rmelk20080324.

4.5.1.6 Greater Sage-Grouse

The CIA for greater sage-grouse includes greater sage-grouse occupied habitat contiguous to project disturbance areas (**Figure 4.5-6** in **Appendix I**). The 562,674-acre CIA encompasses:

- 431,496 acres of BLM-managed public lands
- 80,146 acres of private lands

- 966 acres of waterbeds
- 213 acres of parks and recreation area managed by Utah State Parks

4.5.1.7 Raptors

The CIA for raptors includes the area bounded by drainages as described in **Section 4.5.1.2**, expanded to include areas to create a 2-mile buffer of identified eagle nests or a 0.5-mile buffer of other raptor nests (**Figure 4.5-7** in **Appendix I**). The 510,328-acre CIA encompasses:

- 289,338 acres of BLM-managed public lands
- 132,342 acres of private lands
- 56,301 acres of U.S. Forest Service-managed public lands
- 30,129 acres of SITLA lands
- 1,626 acres of wildlife reserve/management area managed by the Utah Division of Wildlife Resources and parks and recreation area managed by Utah State Parks
- 592 acres of waterbeds

4.5.1.8 Utah Prairie Dog

The CIA for UPD is a 20-mile buffer to the south of Alternative 1 where it intersects low-intensity survey area for UPD as required by USFWS (**Figure 4.5-8** in **Appendix I**). The 262,158-acre CIA encompasses:

- 182,960 acres of BLM-managed public lands
- 54,815 acres of private lands
- 24,371 acres of SITLA lands
- 12 acres of waterbeds

4.5.1.9 Range

The CIA for range resources includes the entirety of all grazing allotments crossed by the Proposed Action and Action Alternatives (**Figure 4.5-9** in **Appendix I**). The 160,231-acre CIA encompasses:

Allotments

- 11,976-acre Milford Bench allotment
- 7,025-acre Milford Cattle allotment, North Pasture
- 34,588-acre Mineral Range North Unit
- 26,917-acre Mineral Range South Unit
- 27,876-acre Mineral Range West Unit
- 18,000-acre Minersville # 2 West Pasture
- 5,609-acre North Creek Table Grounds Pasture

Land Management

- 127,255 acres of BLM-managed public lands
- 21,072 acres of private lands
- 11,201 acres of SITLA lands
- 683 acres managed by Utah State Parks/Division of Wildlife
- 7 acres of U.S. Forest Service-managed public lands
- 3 acres of waterbeds

Allotments

- 1,101-acre Pine Creek/Indian Creek North Pasture
- 27,139 Whitaker allotment

Total: 160,321 Acres

Land Management

Total: 160,321 Acres

4.5.1.10 Wilderness

The CIA for wilderness includes the Granite Peaks area with wilderness characteristics (**Figure 4.5-10 in Appendix I**), which encompasses 18,308 acres.

4.5.1.11 Recreation

The Recreation CIA includes the Beaver Hunt Unit for cougar, general deer, spike elk, and pronghorn (**Figure 4.5-11 in Appendix I**). The 1,146,530-acre CIA encompasses:

- 563,407 acres of BLM-managed public lands
- 292,120 acres of U.S. Forest Service-managed public lands
- 226,133 acres of private lands
- 60,932 acres of SITLA lands
- 3,309 acres managed by Utah State Parks/Division of Wildlife
- 629 acres of waterbeds

4.5.1.12 Visual Resources

The CIA for visual resources includes all HUC 12 watersheds that encompass the Project Area plus additional key-holed areas to the east of the Project Area that encompass the portions of I-15 where the transmission line would be visible from the highway (**Figure 4.5-12 in Appendix I**). The 222,993-acre CIA encompasses:

- 140,745 acres of BLM-managed public lands
- 67,386 acres of private lands
- 14,821 acres of SITLA lands
- 40 acres managed by Utah State Parks/Division of Wildlife
- 1 acre of waterbeds

4.5.1.13 Cultural Resources

The CIA for cultural resources includes an area 0.50-mile either side of the transmission line, based on the Class I cultural resources survey area (**Figure 4.5-13 in Appendix I**). The 35,434-acre CIA encompasses:

- 24,526 acres of BLM-managed public lands
- 8,738 acres of private lands
- 2,170 acres of SITLA lands

4.5.1.14 Socioeconomics

The CIA for socioeconomics includes the entirety of Beaver County, as that is the area for which census data are available (**Figure 4.15-14 in Appendix I**). The 1,654,700-acre CIA encompasses:

- 1,138,567 acres of BLM-managed public lands
- 209,084 acres of private lands

- 139,044 acres of U.S. Forest Service-managed public lands
- 155,116 acres of SITLA lands
- 11,925 acres managed by the Utah Division of Wildlife
- 212 acres of parks and recreation area managed by Utah State Parks
- 752 acres of waterbeds

4.5.2 Past and Present Actions

Past uses of lands within the CIAs include mining activities (areas along the southern boundary of the Granite Peaks area), utility construction (the Milford area is currently serviced by a 46 kV transmission line), range improvements such as fences and troughs as well as a dam/reservoir, road developments (Pass Road, in particular), agricultural uses (the main action on private lands), recreational uses, fuel wood collection, and residential development (generally sparse in the CIAs with the exception of Milford, population 1,450). In addition to human uses of the land, large portions of the CIAs have been burned by wildfires, and are impacted by non-native and invasive species.

Current actions in the CIAs are described below:

Geotechnical Investigations for the Sigurd to Red Butte 345 kV Transmission Line Project. PacifiCorp is conducting geotechnical investigations to support the Sigurd to Red Butte 345 KV transmission line project. The geotechnical investigations consists of drilling up to 234 boreholes to sample/evaluate subsurface soil and rock to provide important information regarding subsurface conditions which will be incorporated into the engineering design on the transmission tower foundations. Temporary access roads are being constructed to reach borehole sites in remote locations. A number of the borehole locations fall within the CIAs (BLM 2011).

4.5.3 Reasonably Foreseeable Action Scenario

The following reasonably foreseeable action scenario applies to the CIAs.

- Agriculture and development of residential uses on private lands in the CIA would be expected to continue.
- Vehicle use of Pass Road would be expected to continue at current levels.
- There are no known plans for Utah to develop or sell any of the SITLA lands in the CIA.
- Future demand for fuel wood on BLM-administered lands would be estimated to be similar to past and present demand levels.
- Other current public and industrial uses of BLM-administered lands, such as grazing and recreation, as well as wind and geothermal power generation and testing, would be expected to continue at current levels.
- While a 138 kV loop (the proposed transmission line could be one leg of a loop) may be required in the future to meet the power needs of the area, there are no reasonably foreseeable plans for development of a loop.
- BLM management actions such as vegetation treatments are ongoing.

Approval of the ROW for the proposed Cameron to Milford transmission line would not establish a corridor for additional utility development. While future development of other

linear utilities parallel to or within the proposed Cameron to Milford ROW could be proposed there are no proposals currently within the reasonably foreseeable future.

The BLM has the following projects planned in the CIA within the foreseeable future. Any future projects involving federal lands or funding that may develop in the CIA would be subject to NEPA and the full array of federal laws addressing environmental protection. As required by law, resources would be protected or appropriately mitigated.

PacifiCorp Sigurd to Red Butte 348 kV Transmission Line. PacifiCorp proposes to construct a new 345 k transmission line connecting the Sigurd Substation (located six miles northeast of Richfield, Utah) to the Red Butte Substation (located southwest of the town of Central, Utah). The transmission line would be approximately 160 miles long, constructed with steel H-frame structures, and would require construction of new roads. Alternate routes for the transmission line would cross the western portion of the CIA both east and west of Milford. The BLM published the Record of Decision dated December 2012.

Milford Wind Corridor Project. Milford Wind Corridor Phase III, LLC proposes to build a wind energy facility north of Milford, Utah. The principal components of the wind energy facility include approximately 300 wind turbine generators, an underground power collection system, a connector road system, and an operations and maintenance facility. The wind turbines would be arranged in parallel rows (arrays) oriented west-northwest to east-southeast and approximately one mile apart. The connector road system would run along the turbine arrays, and the underground power collection system would be installed along the side of the connector roads. The operations and maintenance facility would occupy about 15 acres. Electrical power from the proposed Wind Energy Facility would interconnect to the existing 345-kV generator lead line that runs between the Milford Wind Corridor Phase I Project substation and the Intermountain Power Plant substation near Delta, Utah by means of a new, approximately 7-mile-long overhead generator lead line. Steel two-pole H-frame towers would support the transmission line cables. The transmission line towers would be spaced at approximately 1,000-foot intervals within a permanent transmission line ROW. The switching station would occupy about 5 acres. The EA is currently being drafted.

ENEL Geothermal Plant. Enel Cove Fort LLC is constructing a binary geothermal power plant near the intersection of I-15 and I-70. Total plant capacity will be 65 megawatts. The first phase of development is scheduled for completion by the end of 2013 (BLM 2013; www.enelgreenpower.com 2013).

4.5.4 Cumulative Impacts

4.5.4.1 Soils

Soils within the CIA have likely been affected by historic, recent past, and present human development, primarily through agriculture and mining. Future projects would result in direct soils disturbances within the CIA, including erosion and soil losses following new disturbances, and the permanent conversion of designated farmland soils to nonagricultural uses.

Potential short-term cumulative impacts to soils both during and after construction include wind and water erosion, and compaction. Potential long-term impacts without

mitigation, such as revegetation, would include continued erosion, loss of topsoil, gulying, and nutrient depletion. Under the Proposed Action the project would contribute soil disturbance of approximately 82 acres in the short term and approximately one acre in the long term, with the Alternative 1 route contributing more and the Alternative 2 route contributing less.

4.5.4.2 Water Resources

The Water Resources CIA was and will continue to be impacted by past and present agriculture uses in the area, including heavy use of irrigation and elimination of natural channels in favor of irrigation waterways or ditches; elimination of riparian areas. Future development and uses within the CIA would result in short-term sedimentation resulting from erosion; and long-term impacts from disturbances within floodplains and other natural drainages.

The Proposed Action would disturb approximately 11 acres of short-term and 0.01-acre of long-term disturbance within riparian area buffer, contributing to cumulative impacts to water resources in the CIA. Short- and long-term disturbances to the riparian area buffer that would contribute to cumulative impacts to water resources under Alternative 1 would be approximately half that of the Proposed Action. Alternative 2 would not disturb the riparian area buffer, and would make no contribution to cumulative impacts to water resources in this respect. While BMPs and Design Features to Reduce Impacts (such as straw waddles) would be expected to largely control short-term impacts to water resources from soil erosion, minimal contribution to cumulative impacts to water resources would be possible under all Action Alternatives.

4.5.4.3 Vegetation

Vegetation within the CIA has been extensively affected by past and present agriculture and grazing, transportation uses (on and off-road), non-native and invasive species, and wildfire. Future projects within the CIA would result in short-term disturbance of vegetation through overland travel, drilling of boreholes, erecting poles for transmission lines, and temporary uses such as staging areas for construction projects. This type of ground disturbance frequently leads to the long-term indirect impact of spreading non-native and invasive plants. Long-term disturbances to vegetation would result from this expansion of non-native and invasive species, which in turn contribute to increased incidence of wildfire.

Under the Proposed Action approximately 82 acres would be disturbed in the short term, and approximately 49 acres would be cleared in the short term and maintained in the long term, contributing to cumulative impacts to vegetation. Alternative 1 would make a slightly lower contribution. Alternative 2 would disturb approximately 68 acres in the short term, two acres in the long-term, and would not involve short-term clearing and long-term maintenance that would contribute to cumulative impacts to vegetation.

4.5.4.4 Woodland Products and Forestry

Woodland Products and Forestry resources in the CIA are located at higher elevations in and around the Mineral Mountains and have been affected by a variety of land uses; however, the greatest recent impact to the resource has been through wildfire. Nearly 50,000 acres, approximately half of the CIA, has burned. Portions of the CIA designated for green and dry fuel wood cutting may see some reduction in mass from future cutting.

CCFO projects all appear to be planned for lower elevation areas outside, or minimally impacting forested lands within the CIA.

Under the Proposed Action, approximately 40 acres of vegetation that would constitute woodland products would be cut in the short term, and approximately 49 acres would be maintained clear of trees in the long term, contributing to cumulative impacts to Woodland Products and Forestry. Alternative 1 would make a similar contribution to cumulative impacts to Woodland Products and Forestry. Alternative 2 would make no contribution to cumulative impacts to Woodland Products and Forestry.

4.5.4.5 Wildlife

Wildlife within the CIA have been cumulatively impacted by a reduction in habitat through vegetation changes, water diversions, habitat fragmentation, fire, non-native species introductions; and increased human presence, activity, and use of the land. Future uses of wildlife habitat would continue to impact wildlife through human presence and noise in the short term associated with future projects. Reduced quality of wildlife habitat in the long term would result from vegetation disturbance and modification, and through expansion of populations of non-native and invasive species.

Potential short-term (during construction) impacts to smaller wildlife during construction include harassment, injury, and mortality. Potential short-term impacts include harassment and avoidance of habitat near the project area. As a result of the amount of human activity and traffic in CIA, wildlife have been and will continue to be subject to harassment, injury, mortality, and avoidance of habitats. The project would contribute to cumulative effects to wildlife short-term disturbance of approximately 47 acres and the long-term disturbance of approximately one acre of wildlife habitat. Alternative 1 would contribute to cumulative effects short-term disturbance of approximately 57 acres and the long-term disturbance of approximately one acre of wildlife habitat. Alternative 2 would contribute to cumulative effects short-term disturbance of approximately 68 acres and the long-term disturbance of approximately two acres of wildlife habitat.

All alternatives potentially impact big game habitat, but Alternative 2 has relatively greater impacts to big game habitat, and may result in a proportionally higher contribution to cumulative impacts to big game.

4.5.4.6 Greater Sage-Grouse

Greater sage-grouse in the west, and likely within the CIA, have been adversely affected by habitat fragmentation resulting from human development, particularly linear development such as roads and transmission lines; overall reduction in habitat from conversion of native sage vegetation to agricultural uses; and reduction in the quality of habitat remaining habitat from expansion of non-native and invasive species.

Potential short-term (during construction) impacts to greater sage-grouse during construction include harassment, injury, mortality, and avoidance of habitat near the project area. As a result of the amount of human activity and traffic in CIA, greater sage-grouse have been and will continue to be subject to harassment, injury, mortality, and avoidance of habitats. Overall long-term impacts to greater sage-grouse from cumulative effects in the CIA would be reduction of habitat and declining populations. The Proposed Action and Alternative 1 would contribute to cumulative impacts to greater sage-grouse by crossing occupied greater sage-grouse habitat and come within

one mile of an historic lek. Alternative 2 would not cross any mapped greater sage-grouse habitat, and would be less likely to contribute to cumulative effects to greater sage-grouse.

4.5.4.7 Raptors

Impacts to nesting raptors would be avoided through temporal and spatial buffers. If raptors were foraging in or passing through the project area, such individuals may avoid the areas of construction and seek out alternate routes or foraging areas. Given the past, future, and especially present activities in the CIA that may have, or could have in the future, this same impact on raptors, this project would have no measureable cumulative effects on raptors.

4.5.4.8 Utah Prairie Dog

Impacts to UPD are possible under Alternative 1 as suitable habitat exists. Under Alternative 1, low-intensity UPD surveys would be required in identified areas. Currently it is not known how much, if any occupied habitat exists. If Alternative 1 is chosen and it was determined that implementation could impact UPD, a Biological Assessment would be prepared and conservation measures identified to minimize and mitigate potential effects to UPD.

During construction activities, the possibility of permanent and temporary “take” on the Utah prairie dogs may occur as a result of the project. Temporary “take” would be in the form of harassment from increased construction activities, human disturbance, and increased vehicles during construction of the line.

Most of the Utah prairie dog habitat in the CIA is likely on private property where UPD have been, are currently, and will continue to be impacted by grazing, farming, traffic, legal and illegal take, and other activities.

Considering the past, future, and especially present activities in the CIA that may have, or could have in the future, the same harassment and habitat loss impact on UPD, implementation of Alternative 1 could have detectable, although slight, cumulative effects on the species.

4.5.4.9 Range

Historic range in the CIA has been reduced by the conversion of range by human development and to other agricultural uses. Expansion of invasive and non-native species has resulted in the present reduced quality of range. Future planned development in the CIA and potential for expansion of invasive and non-native species would be expected to cumulatively reduce the overall size and quality of range resources of the CIA.

Under the Proposed Action, the short-term loss of approximately 53 acres and the potential long-term gain of 49 acres of range would contribute to cumulative impacts to range resources. Alternative 1 would make a greater contribution to short-term cumulative impacts with approximately 85 acres of range lost for the short term, with the same approximate long-term gain as the Proposed Action. Alternative 3 would contribute approximately 76 acres in short-term impacts, with no potential for long-term gain.

4.5.4.10 Wilderness Characteristics

No other projects are known to be planned within the Granite Peaks area with wilderness characteristics. The Proposed Action would result in the loss of approximately 10 acres of wilderness characteristics within the Granite Peaks area with wilderness characteristics in the long term. The Action Alternatives do not cross and would not make a contribution to impacts to the Granite Peaks area with wilderness characteristics.

4.5.4.11 Recreation

The primary area for a variety of recreation is the central portion of the CIA in the Mineral Mountains. The presence of Pass Road beneficially impacts recreation by providing an easy access route, while also adversely impacting the resource by bringing traffic, noise, and dust into a natural area. Should the Proposed Action be constructed at the same time as other projects in the cumulative impacts scenario, cumulative impacts to the recreational experience would include higher levels of activity and noise in the natural setting. All alternatives potentially impact big game and may contribute to cumulative impacts to hunting, but Alternative 2 has relatively greater impacts to big game habitat, and may result in a proportionally higher contribution to cumulative impacts to hunting as recreation.

4.5.4.12 Visual Resources

As viewed from I-15, the visual impact of the proposed transmission line would contribute to changing the visual impression of the area from pastoral to more developed.

The main visual impact along the central portion of the CIA through the Mineral Mountains is Pass Road. Some historic mining occurred on the north side of Pass Road, but those impacts would not be noticeable to the casual observer traveling Pass Road. Grazing is currently occurring and has been permitted historically by the BLM in this section, but would have minimal visual impacts.

The future projects identified on BLM lands would all occur on lands in the western portion of the CIA, west of the Mineral Mountains. Should the geotechnical work for the two proposed transmission lines occur simultaneous with construction of the proposed Cameron to Milford line, there would be short-term cumulative impacts from additional equipment, vehicles, activity and associated dust. The long-term contribution to cumulative impacts from the Sigurd to Red Butte 348 kV transmission line in conjunction with the Cameron to Milford line would depend on the location of the viewer, but would be minimal.

4.5.4.13 Cultural Resources

Cultural resources in the CIA have been subject to degradation over time through weather and land use changes, and many cultural resources have been degraded or lost as human development in the CIA has increased. These losses have likely occurred mainly on private lands where cultural resource evaluations and mitigation of resource disturbances are not required. The proposed project would have minimal impacts and make a minimal contribution to cumulative impacts to cultural resources.

4.5.4.14 Socioeconomics

Short-term cumulative impacts to socioeconomics would result from simultaneous execution of the proposed project in conjunction with other development projects in the county, resulting in local hiring and expenditures, which would also indirectly benefit tax revenue. Long-term cumulative impacts to socioeconomics would result from additional development that could occur in the western part of Beaver County as a result of the availability of sufficient electricity that would be provided by the proposed transmission line to support development, regardless of the alternative selected.

5.0 CONSULTATION AND COORDINATION

5.1 Persons, Groups, and Agencies Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Utah State Historic Preservation Office (SHPO)	Consultation for the determination of cultural resource site eligibility and determination of “adverse effect” for this undertaking, as required by the National Historic Preservation Act (NHPA) (16 USC 470). Mailed letter to UTSHPO on May 20, 2011.	UT SHPO concurred with determinations of eligibility and effect on May 26, 2011.
Paiute Indian Tribe of Utah	Government to Government Tribal consultation for this project took place on June 4, 2010 via meeting with Cultural Resource Specialist Dorena Martineau of the Paiute Indian Tribe of Utah and Rachel Tueller of the BLM. Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and the National Historic Preservation Act (16 USC 1531)	
Paiute Indian Tribe of Utah and Hopi Tribe	Additional consultation with the Paiute Indian Tribe of Utah for the cultural resources inventory report and treatment plan took place in person on March 16 th , May 11 th , and August 5 th , 2011. Letters were also mailed to the Hopi Tribe on March 17 th and May 11 th , 2011. Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and the National Historic Preservation Act (16 USC 1531)	The Paiute Indian Tribe of Utah reviewed the project and had no objection to the project going forward. They requested to be informed of any changes or updates to the project. The Hope Tribe responded with no concerns about the inventory report or treatment plan.

5.2 Summary of Public Participation

During preparation of the EA, public notification of the project was provided on January 7, 2011 via the Environmental Notification Bulletin Board, a BLM internet web site used to notify the public of potential projects on BLM-administered lands in Utah. One comment letter was received. The Notice of Intent to prepare an EA was published in the Federal Register on August 24, 2012 (FR 77[165]:51559-51560). Two comment letters were received within the 30 day public scoping period. An onsite tour of the proposed ROW was announced to the public on September 19, 2012 and conducted on October 3, 2012. In addition to BLM, PacifiCorp, and third party representatives contracted to prepare this EA, five member of the public were also present. No new comments not already addressed in this EA were received during the tour.

The EA was made available for public review from October 29, 2013 to November 27, 2013. Two comment letters were received within the 30 day public comment period.

All letters and other comments received from the public in addition to a matrix of responses to comments are included in **Appendix A**. Comments have been addressed in this EA as indicated in the matrix.

5.3 List of Preparers

A. List of BLM Reviewers:

Name	Title	Responsible for the Following Section(s) of this Document
Craig Egerton	Natural Resource Specialist	Soils, Floodplains, Prime Farmland, Hydrology, Water Quality, Vegetation, Woodlands/Forestry, Reclamation, Rehabilitation
Dan Fletcher	Assistant Field Manager	Range Resources
Gina Ginouves	NEPA Coordinator	NEPA Review
Dave Jacobson	Outdoor Recreation Planner	Wilderness Characteristics, Recreation, Visual Resources
Karen McAdams-Kunze	Realty Specialist	All Sections of the EA
Adam Stephens	Rangeland Management Specialist	Riparian/Wetlands
Nathan Thomas	Archeologist	Cultural Resources and Native American Religious Concerns
Sheri Whitfield	Wildlife Biologist	Wildlife, Threatened, Endangered and Candidate, Migratory Birds, Special Status Plant Species

B. List of non BLM Preparers:

Name	Title	Responsible for the Following Section(s) of this Document
Eric Holt	Project Manager/ Wildlife Biologist	Project Management
Schelle Davis	Deputy Project Manager/ Environmental Planner	Document preparation; visual resources analysis
Laura Arneson	Environmental Specialist	Document preparation; biological resources analysis
Claudia Gallegos	GIS Administrator/ Environmental Specialist	GIS data analysis
Nick Faust	GIS Analyst	GIS data analysis
Jon Schulman	Environmental Engineer/ Hydrologist	Floodplain analysis

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